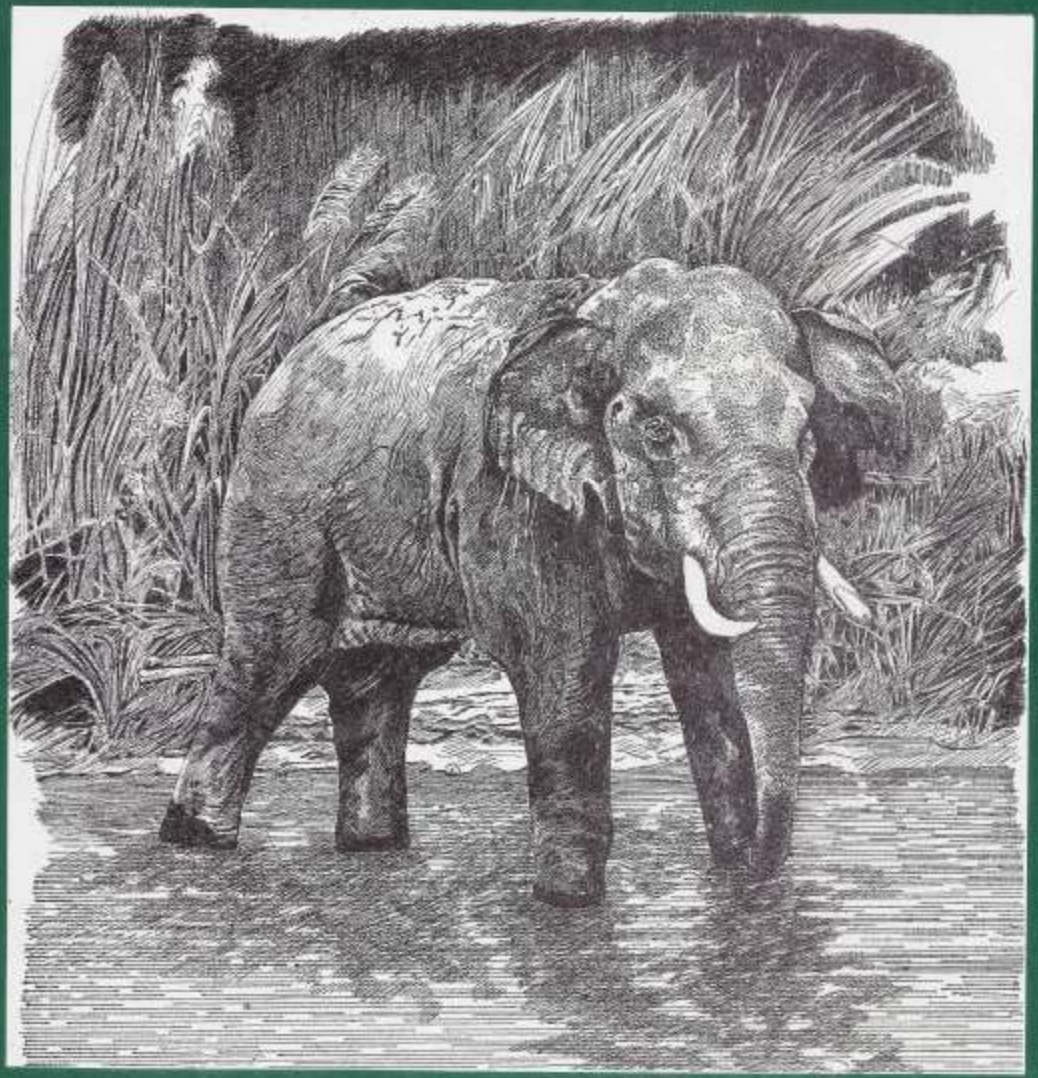
DIRECTORY OF NATIONAL PARKS AND SANCTUARIES IN

KARNATAKA

MANAGEMENT STATUS AND PROFILES



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Editors

Directory of National Parks and Sanctuaries in Karnataka

MANAGEMENT STATUS AND PROFILES

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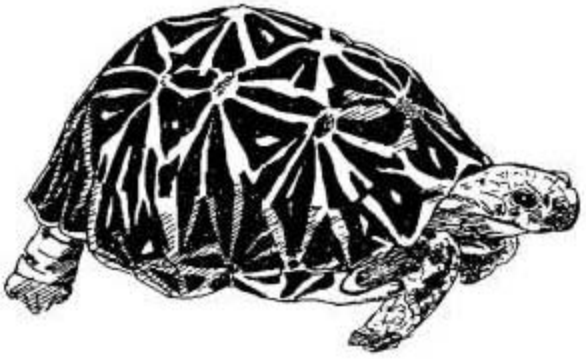

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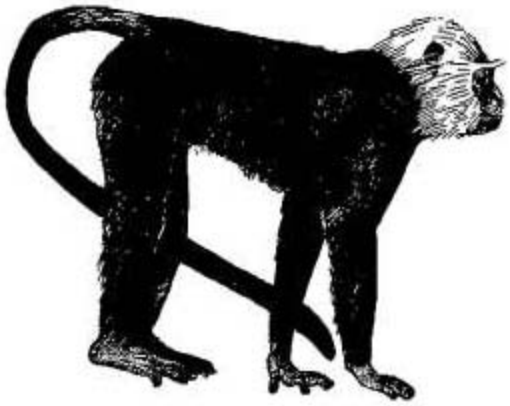

Illustrations by Pratibha Pande

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GLOSSARY AND LIST OF ABBREVIATIONS

Glossary of Local/Hindi/Kannada Terms

Balle	Elephant camp
Bare	Hill
Betta	Hill
Bettu	Fields
Dak	Mail
Dodda	Big
Dongar	Tribe
Giri	Hill
Gudi	Temple
Halla	Stream/River
Hole/Holle	Stream/River
Jamedar	Keeper/worker
Kallu	Stone
Katte	Waterbody
Kavadi	Mahout's assistant
Kere	Tank
Kolachi	Marshy land
Kolli	Hen/Cock/Chicken
Koppalu	Hamlet
Kottam	Cluster
Maddi	Hill
Malai	Meadow
Male	Rain
Mandir	Temple
Manti	Hill
Math/Matha	Religious institution
Mayur	Peafowl
Motte	Egg
Mula	River origin
Munti	Hillock
Nadi	River
Pole /Pula	River
Puzha	River
Tirtha	Pilgrimage spot
Tittu	Rock formations
Todu	Stream
Yatra	Journey (Religious yatra = pilgrimage)
Zilla Parishad	District Council

List of Abbreviations with Their Expansions

For a full list of abbreviations and symbols used in the maps, see Key to the Maps, p. 17. The abbreviations marked with an asterix (*) are standard sources for all or most of the parks and sanctuaries, and are further explained in the chapter 'Note on Methodology'.

ACF	Assistant Conservator of Forests
Approx.	Approximately
BNHS	Bombay Natural History Society
BSI	Botanical Survey of India
BZ	Buffer Zone
C	Celsius
CF	Conservator of Forests
CCF	Chief Conservator of Forests
CWLW	Chief Wildlife Warden
CZ	Core Zone
Dept.	Department
DC	Deputy Commissioner
DCF	Deputy Conservator of Forests
DFO	Divisional Forest Officer
Dist.	District
Dy.	Deputy
E	East
Ed(s).	Editor(s)
FRH	Forest Rest House
fv*	Field Visitor's report/observations
GH	Guest House
Govt.	Government
Ha.	Hectare(s)
HWLW	Honorary Wildlife Warden
IB	Inspection Bungalow
IIPA	Indian Institute of Public Administration
IUCN	World Conservation Union (Formerly International Union for Conservation of Nature and Natural Resources)
JBNHS	Journal of Bombay Natural History Society
KFRI	Kerala Forest Research Institute
KIOCL	Kudremukh Iron Ore Company Ltd.
Km(s)	Kilometer(s)
KSEB	Karnataka State Electricity Board
m	Metre(s)
MAB	Man and Biosphere Programme
Map*	Map sent by the wildlife authorities
Met	Records of Meteorological Department, Government of India
mm	Millimeters
mp*	Management Plan
MPC	Mysore Power Corporation
MSL	Mean Sea Level
N	North
NBR	Nilgiri Biosphere Reserve

NGO	Non-Governmental Organisation
NH	National Highway
No.	Number(s)
notif*	Notification
NP	National Park
N/S	National Park / Sanctuary
NWFP	Non-Wood Forest Produce
PA	Protected Area
Pers. Comm.	Personal Communication
PF	Protected Forest
PWD	Public Works Department
qa*	Answers by wildlife wing officials to queries
q1*	Questionnaire I of IIPA
q3*	Questionnaire III of IIPA
R.	River
Retd.	Retired
RF	Reserved Forest
RFO	Range Forest Officer
RH	Rest House
RLEGP	Rural Landless Employment Guarantee Programme
RO	Range Officer
RS	Railway Station
S	South
Sch.	Schedule(s)
Sq.	Square
sq. km	Square Kilometer(s)
Sp.	Species (singular)
Spp.	Species (plural)
St. map	Survey of India State map
S-W	South-west
TB	Tourist Bungalow
tp*	Survey of India topographical sheet
TZ	Tourist Zone
UT	Union Territory
VCR	Video Cassette Recorder
UNESCO	United Nations Educational Scientific and Cultural Organisation
Vet	Veterinarian
Vol.	Volume
W or WL	Wildlife
WLS	Wildlife Sanctuary
WP*	Forest Division Working Plans
WT	Watchtower
ZSI	Zoological Survey of India

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Mrs. Dilnavaz Variava was the instigator of much of this work and was closely involved with it in its earlier phases. To her this project owes more than can be expressed in words.

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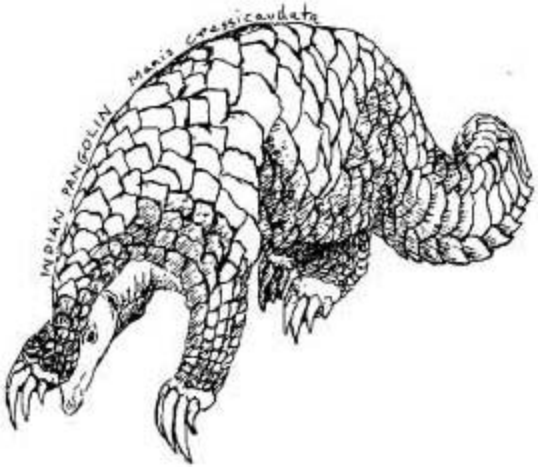
The Research Team



INTRODUCTION

This directory on Karnataka is the third in a series of volumes covering national parks and sanctuaries in India, each volume containing information on one state, depending on the number of parks and sanctuaries to be covered. The first two volumes were on Himachal Pradesh, and Andaman and Nicobar Islands.

The primary objective of this set of directories on the national parks and sanctuaries in India is to make available to the public detailed information on protected wildlife areas, which are a part of our common heritage. Considering the pressures that most of our wilderness areas are facing today, from development projects, industry, and local communities, the task of preserving at least some areas in their natural state has become one of national significance. But people cannot be expected to respond to this task unless they are informed about these areas, and what they contain and represent. These directories, then, are a small step in this direction.

One symptom of the neglect of our protected areas has been the almost total lack of information about them. The task of building up a reliable data-base is so enormous and complex that it cannot possibly be done by the Government alone. Considering the varied expertise needed to properly understand and catalogue the diverse ecosystems in our parks and sanctuaries, a joint cooperative effort between governmental and non-governmental agencies and individuals is urgently required. It is, therefore, hoped that these directories would help in catalysing a process by which groups and individuals would record information and monitor ecological changes within national parks and sanctuaries.

The directory sheets, and other sections of this volume, contain information on various aspects of the management of national parks and sanctuaries which would be of interest to wildlife managers, researchers, policy makers, and enthusiasts. In addition there are sections giving a broad ecological profile of Karnataka, and providing an analysis of the status of wildlife management in the state.

We recognise that this directory, by perhaps facilitating visits to protected areas, may increase the pressure on them. Though well organised and managed tourist activities are, in our opinion, supportive to the conservation effort, many protected areas in Karnataka have inadequate management resources to deal with a surge in visitors. It is clear that management of most of the parks and sanctuaries in Karnataka needs to be strengthened, especially by involving the local communities, and we hope that the State Government will heed this.

We intend to continuously up-date the information in this directory, both through our own efforts and with the help of others. Readers are therefore requested to write in, especially to correct any wrong information that we might have reported, or to fill in gaps in our directory sheets, or just because they have something interesting to share. Readers who would like to be kept informed about future volumes of the directory and other related publications, or can contribute relevant information, may please write to:

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KARNATAKA: A BRIEF PROFILE

Karnataka is located in the west-central part of peninsular India, forming the country's eighth largest state. Given below are some data which will help to put the information in this directory in context.

GEOGRAPHICAL PROFILE [Government of Karnataka 1982; Krishnan and Mani 1987; FSI 1991]

Area	1,91,791 sq. kms.
Latitude	11°31' to 18°45' N
Longitude	74°12' to 78°40' E
Minimum temperature	2°C
Maximum temperature	46°C
Mean annual rainfall	1975 mm. (ranging from 450 to 7500 mm)
Soils	Predominantly read, with stretches of coastal alluvium, laterite, and black soils.

LAND USE [DES 1983; FSI 1991]

	Karnataka	India
	(% of total)	
Cultivated area (including current fallows)	60.3	51.3
Legally classified forest	20.2	23.4
Actual forest	16.8	19.4
Pastures/grazing lands	6.6	3.9
Permanent fallows/culturable wastes	5.2	8.5
Area subject to degradation/erosion	59.9	52.6

DEMOGRAPHIC PROFILE [Census of India]

	1971	1981	1991
Total population	2,92,99,014	3,71,35,714	4,49,77,201
Rural population	2,21,76,921	2,63,32,348	3,10,69,413
Urban population	71,22,093	1,07,11,103	1,39,07,788
Density of population	153/sq. km.	193/sq. km.	240/sq. km

FORESTS AND WETLANDS [FSI 1991; MoEF 1990; WWF 1992]

(Broad forest classification: Evergreen and semi-evergreen belt, Moist deciduous belt, Dry deciduous scrub belt, Mangrove belt).

Forest area (legally recorded)	38,646 sq. km.	(20.2% of total State area)
Reserved Forest	28,610 sq. km.	
Protected Forest	3,932 sq. km.	
Other forest	6,104 sq. km.	
Forest area (actual)	32,199 sq. km.	(16.8% of total State area)
Mangroves	60 sq. km.	
Wetland area	5,425 sq. km.	
Natural wetlands	33 sq. km.	
Human-made wetlands	5,392 sq. km.	

WILDLIFE MANAGEMENT IN KARNATAKA

STRUCTURE OF THE FOREST DEPARTMENT AND WILDLIFE WING

The Forest Department is headed by the Principal Chief Conservator of Forests (PCCF). He is assisted by four Chief Conservators of Forests (CCF's), in charge of Wildlife, Social Forestry, Development and Administration.

The CCF (Wildlife), also designated the Chief Wildlife Warden, heads the Wildlife Wing, and is assisted by two Conservators of Forests (CFs), 8 Deputy Conservators of Forests (DCFs), and 14 Assistant Conservators of Forests (ACFs), in charge of Wildlife Circles, Divisions, and Sub-divisions, respectively [Appayya, pers. comm., 1992].

STATE WILDLIFE ADVISORY BOARD AND HONORARY WILDLIFE WARDENS

The State Advisory Board is a non-official body constituted by the State Government with 22 members headed by the Minister of Forests [Appayya 1985]. The members, who have a term of two years, are government officials, non-official wildlife experts, and state legislators.

In addition, an effort has been made to appoint one person per district as Honorary Wildlife Wardens. These are usually conservationists residing in the vicinity of the national park or sanctuary for which they are appointed [Appayya 1985].

HUNTING AND ANIMAL POACHING

The Government of Karnataka has banned hunting from 1975 [Appayya, 1985]. However, some poaching of various species continues to be reported from many parts of the state. For instance, Elephant poaching for ivory has taken a heavy toll of tuskers in the last decade. In 1983- 84 as many as 26 tuskers were poached. Extensive patrolling has brought down the toll to 6 in 1984-85, 8 in 1985-86, 3 in 1988-89, 7 in 1989-90 and 10 in 1990-91 [Appayya, pers. comm., 1991].

MANAGEMENT STATUS: A PROFILE

The declaration of a wildlife habitat as a national park or sanctuary is only one of the steps towards its effective protection. A number of other measures are needed, including implementation of the various provisions of the Wild Life (Protection) Act of 1972, building up and implementation of management plans, and provisions of adequate staff, funds, equipment and research inputs. Given below is a statement of the management status of the parks and sanctuaries in Karnataka, describing the actual situation with regard to these and other important parameters.

Table 1 gives a quick overview of the status of various critical management aspects in each of the national parks and sanctuaries in Karnataka. Greater details on these parameters are given in the individual directory sheets. The table also gives a consolidated statement for the whole State. The picture that emerges can be categorized into four heads: legal status, ecological factors, human presence, and management.

Legal Status: *The completion of legal procedures* as laid down in the Wild Life (Protection) Act, (hereafter called the Act) is essential for the proper management of a national park or sanctuary. It must be kept in mind that the set of procedures applicable to a national park was, till 1991, different to that applicable to a sanctuary. In the latter case, an area was first declared a sanctuary (under section 18 of the Act) and then steps were taken to determine, extinguish, acquire or otherwise adjust the existing rights of the people in the area (Section 19 to 26 of the Act). In the case of a national park, an intention to constitute an area was first declared (Section 35 of the Act), then all the steps prescribed for a sanctuary (Sections 19 to 26) were followed, and only then was the area notified a national park (Section 35 (4) of the Act).

Legal procedures were therefore considered completed for a sanctuary if all the rights and leases had been settled, either under the 1972 Act, or any other previous Act under which the sanctuary was declared. For a

national park, however, completion of procedures was achieved only when the final notification was issued.

With amendments to the Act in 1991, the legal procedure for setting up a sanctuary has been made the same as that of a national park : state governments will now have to first notify *intention* (section 18 (1)) to declare a sanctuary, and finally notify it (section 26a(1)) only after completion of steps under sections 19 to 26. But it must be kept in mind that all of Karnataka's existing parks and sanctuaries were set up prior to this amendment. The amendment does, however, exempt existing areas within Reserve Forests from having to go through the steps are prescribed in sections 19 to 25. This is presumably because very similar steps are prescribed under the Indian Forest Act while declaring an area a Reserve Forest (for a discussion on this please see Kothari et.al. (1989). This means that a number of sanctuaries in Karnataka whose legal procedures were incomplete as per the Act , can be considered fully constituted provided they are completely within Reserve Forests.

In Karnataka, only the Rajiv Gandhi National Park has been finally notified, and of the 19 sanctuaries, legal procedures have reportedly been completed in seven. In view of the earlier mentioned section (26a) the position of Rajiv Gandhi National Park stands changed.

Ecological Factors: Of the many physical and biological factors which have a bearing on the management of an area, some critical ones are periodic occurrences of fire and drought, and outbreaks of disease among wildlife. These factors can often reach serious proportions, threatening the habitat, flora and fauna, and therefore often need to be prevented or controlled.

Forest fires have been reported from all five national parks and 11 of the 18 sanctuaries . Fire counter-measures have been taken in five of the national parks and eight sanctuaries.

Three national parks and one sanctuary have reportedly been affected by *drought*, measures to counter which have been taken by four of the parks and 10 sanctuaries.

It must be noted that, without a deeper analysis, it is not possible either to judge the impact of fire and drought on the ecosystem and its constituents, or to assess the adequacy of the preventive or control measures.

Disease among animals has been reported from two national parks, Bandipur and Nagarhole, both of which were struck by a rinderpest epidemic back in 1968, and one sanctuary (Bhadra), similarly struck in 1989. Since grazing by domestic livestock (a potential source of disease) has been reported from all five parks and as many as 15 sanctuaries (see below under *Human Presence), vaccination of livestock* is an important preventive measure. Four parks and 12 sanctuaries reported having an active vaccination programme. It is relevant to mention here that the Wildlife Protection Amendment Act of 1991 specifies that "the Chief Wildlife Warden shall take measures for immunisation against communicable diseases of the livestock kept in or within five kilometers of a sanctuary (section 33 A(1)), and further that ,"no person shall take any livestock in a sanctuary without getting it immunised. " (section 33 A (2)."

Disease among plants has not been reported from any of the sanctuaries or national parks.

It must be stressed that surveillance regarding disease among flora and fauna is neither regular nor adequate in India's wildlife areas. Though 21 parks and sanctuaries have reported no disease amongst fauna in their area, and none of them have reported disease amongst flora, it is quite possible that the incidence of both is higher than reported. The weeds *Lantana* , *Parthenium* and Eupatorium *Chromolaena odorata* are found in four national parks and 9 sanctuaries. In some parks the spread of these weeds is being controlled while in some they are still spreading. There have also been reports of cattle being affected by rinderpest and anthrax in areas adjoining several parks and sanctuaries (e.g. Anshi, Kudremukh, Someshwar). Also, it is not possible to comment with this level of analysis, either on the impact of disease on flora and fauna populations, or on the adequacy of the preventive or control measures taken.

Human Presence: Very few wildlife habitats in India are completely free of human presence. Adequate protection to these areas can therefore only be given if human activities are harmonised with the requirements of the habitat and wildlife management. But at the same time, it is essential to ensure that the people affected are given a fair deal and their fundamental rights respected. Apart from this being just, wildlife protection that disregards human interest cannot succeed for long, especially if it results in alienating local communities.

The situation with regard to human presence in Karnataka's national parks and sanctuaries is as follows. Four national parks and 13 of the sanctuaries reported the existence of *rights, leases or concessions* within them.

More significantly, five national parks and 12 sanctuaries have permanent or semi-permanent *human habitation* inside. Human activities in these, therefore persist throughout the year. It must be pointed out that the existence of human settlements, as well as of rights, inside a finally notified national park, is illegal under the Wildlife Act of 1972—this would therefore apply to Rajiv Gandhi National Park. Till the 1991 amendment to the Wildlife (Protection) Act, continuation of rights inside a sanctuary was also not permitted. Thus, for instance, the anomaly in the case of sanctuaries like Mookambika, where wildlife authorities reported completion of legal procedures, yet also reported the existence of rights. With the 1991 amendments, rights can now be permitted.

Five national parks and as many as 15 sanctuaries have reported *grazing* by livestock, belonging either to communities living inside or to those living outside and coming in.

It must be stressed that human and livestock activities are not necessarily inimical to the interests of wildlife conservation; impact studies on these pressures are uncommon, and exceptional circumstances would be needed to justify the dislocation entailed in curtailing these activities.

One way to judge the potential pressure of human and livestock population inside a protected area is to look at its density. Table 2 presents the relevant figures for each park and sanctuary. It should be noted that population estimates for each park and sanctuary are as given by the wildlife authorities, and have not been verified from census figures or other sources. Density of human population inside national parks ranges from nil (Bandipur) to 0.21 persons per hectare (Bannerghatta), whereas for sanctuaries it varies between 0.06 (Biligiri Rangaswamy) to a high of 1.25 persons per hectare (Someshwara). Livestock densities similarly ranged between 0.04 (Bandipur) to 0.8 (Rajiv Gandhi) heads per hectare for national parks, and between 0.02 (Biligiri Rangaswamy) to a high of 7.56 (Ranebennur) heads per hectare for sanctuaries. Apart from Someshwara, Mookambika and Shettihally Sanctuaries recorded high human populations residing inside; interestingly, these are Western Ghats areas. In the case of livestock, the exceptionally high grazing density of Ranebennur is almost matched by the tiny Gudavi Sanctuary. Someshwar and Shettihally also recorded high grazing density, which, combined with the fact of their high human density, indicates the urgent need for impact studies there.

Since one of the major pressures on wildlife areas is the fuel and fodder need of the local and migratory communities, *plantations of fuel and fodder species* could be an effective way of reducing this pressure. Two national parks and six sanctuaries have reported the existence of such plantations.

Perhaps most worrying is the incidence of *illegal activities* reported from all five national parks and as many as 14 sanctuaries. Of course the range and intensity of such activities differs considerably from area to area, but the fact that only five sanctuaries are apparently free of them is telling enough.

Tourist activity was reported from all five national parks, and 18 sanctuaries. The details for every year were not kept by all the parks and sanctuaries, therefore the annual variations in tourism are not known.

One of the glaring anomalies of wildlife management in India is the existence of activities by *government departments and agencies other than wildlife authorities* inside parks and sanctuaries (for country-wide details, see Kothari, et al. 1989). Such activities are forbidden in national parks, and are illegal without the permission of the Chief Wildlife Warden in sanctuaries. Even in sanctuaries they have to be in consonance with wildlife management requirements. Yet, in Karnataka all five national parks and as many as 12 sanctuaries reported the presence of such agencies, with activities ranging from open cast mining [in a very large scale in Kudremukh National Park] to road maintenance, commercial forestry operations, and the imparting of military training.

The proximity of parks and sanctuaries to villages and settlements occasionally results in attacks by wild animals on human beings, livestock lifting, and crop damage.

In Karnataka, three national parks and flour sanctuaries have reported incidence of fatal *attacks on human beings*, since 1984. *Compensation* for this was payable in three parks, and three sanctuaries . Three parks and 9 sanctuaries reported cases of *livestock lifting*, while *compensation* was payable in three parks and seven sanctuaries. Four parks and 10 sanctuaries have reported cases of *crop damage*, while four parks and eight sanctuaries reported that *compensation* was payable for this.

Conflicts between wildlife and local human communities, illegal activities, or tension with wildlife authorities can lead to physical *clashes* between local people and wildlife officials. While all five national parks and 14 sanctuaries in Karnataka have reported the occurrence of illegal activities, clashes have apparently taken place in only one of the parks (Rajiv Gandhi), and none of the sanctuaries.

Management Activities and Facilities: Amongst the first steps towards managing parks and sanctuaries is the development of a *management plan*. Such a plan "should identify the major objectives of the park/sanctuary, assemble comprehensive background data, establish the relationship of different factors to each other, identify the priority areas and strategies for protection and management, and indicate locations for building facilities". [Kothari, et al 1989].

Four of the national parks and 16 of the sanctuaries in Karnataka have a management plan (most of them drawn up for the period 1990–95). However, almost all of these were only drawn up in 1989–90 and have yet to be approved. Previous to this, only two parks (Rajiv Gandhi and Bandipur) had management plans.

For proper long-term planning and for relative independence in the functioning of park or sanctuary authorities, it is necessary that each area has a *separate budget*. In this respect Karnataka seems to be fairly well-off, with all five national parks and 18 sanctuaries having a separate budget.

All five national parks and 19 sanctuaries have *personnel* stationed in them , though the number and level of staff members varies considerably (see Table 1 for numbers). *Equipment* for use by the staff is available in all four national parks and 14 sanctuaries. There is, again, considerable variation in the kind and quantity of equipment.

It is at this stage important to clarify that in the absence of more detailed analysis, it is not possible to judge the quality and adequacy of the above mentioned management inputs. How good or bad are the management plans, how adequate are the budgets, how qualified and adequate is the staff, and how appropriate is the equipment cannot be determined at this level of analysis.

Zoning of the area of a national park or sanctuary is considered essential for its proper protection and management. A report for the Indian Board of Wildlife on eliciting public support for wildlife conservation states: "Of over-riding and primary importance is the need for each individual reserve to adopt a 'core—buffer multiple use surrounds' structure, wherein a restricted forest, i.e. buffer surrounds the core, insulating it from an outer multiple use area, the last comprising forests and villages where land use practices are compatible with vildlife conservation" [Indian Board for Wildlife 1983].

In Karnataka, zoning *within* the notified boundaries of a park or sanctuary (please see 'Area and Zoning' in the chapter **KEY TO THE DIRECTORY SHEETS, p. 18**) has been done in two of the five parks and seven of the 19 sanctuaries.

Proper management of wildlife reserves requires an adequate database, which can be obtained only by appropriate research. Also essential is the monitoring of habitat changes, of fauna and flora, and of management activities themselves. *Research and monitoring* have usually been given very little attention in Indian wildlife reserves; in Karnataka, three out of five national parks but only four sanctuaries reported such activity. One sanctuary provided no information on this.

One final parameter of importance to management is the interaction of wildlife authorities with the local people. Building up a relationship of harmony and mutual support requires not only a sensitivity to the needs of the local communities but also an active extensive programme amongst them. Of vital importance would be the involvement of non-government organisations and individuals who could mediate between the official and local people. Such NGOs/NGIs could also help in research, and in monitoring the success or failure of management strategies. In Karnataka, all five parks, but only 10 out of 19 sanctuaries have reported the existence of *community extension/interaction programmes*, while four parks and 13 sanctuaries had *NGO/NGI involvement*. In the majority of cases however, NGO/NGI involvement meant merely the appointment of one or more Honorary Wildlife Wardens.

Table 1 . STATUS OF MANAGEMENT PARAMETERS IN NATIONAL PARKS & SANCTUARIES IN KARNATAKA

	National Parks					Sanctuaries																		TOTAL YES N S	TOTAL NO N S	TOTAL OTHER N S
	ANS	BAND	BANN	KUD	NAG	ADL	ARA	BHA	BIL	BRA	CAU	DAN	DHA	GUD	MEL	MOO	NUG	PUS	RANI	RANG	SHA	SHE	SOM	TAL			
LEGAL STATUS																											
Completion of legal procedures	N	N	N	N	Y	N	Y	N	N	Y	N	N	N	Y	N	Y	N	N	Y	Y	Y	Y	Y	N	1 7	4 12	0 0
ECOLOGICAL FACTORS																											
Fire occurrence	Y1	Y	Y	Y	Y	N	Y	Y	Y	Y	1	Y	N	N	N	N	Y	Y	Y	N	N	Y1	Y1	Y	5 11	0 7	0 1
Fire counter-measures	Y	Y	Y	Y	Y	1	Y	Y	Y	Y	1	Y	1	1	1	1	Y	Y	N	1	1	N	N	Y	5 8	0 13	0 8
Drought occurrence	Y	Y	Y	N	N	N	N	N	N	N	1	N	N	N	N	N	N	N	Y	N	N	N	N	N	3 1	2 17	0 1
Drought counter-measures	Y	Y	Y	1	Y	1	Y	Y	Y	1	N	Y	1	1	Y	Y	Y	1	Y	1	Y	1	Y	1	4 10	0 1	1 8
Diseases among fauna	N	Y	N	N	Y	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	2 1	1 18	0 0
Diseases among flora	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	0 0	5 19	0 0
Vaccination programme	Y	Y	Y	N	Y	N	Y	Y	Y	Y	N	Y	N	N	Y	Y	Y	N	N	N	Y	Y	Y	N	4 12	1 7	0 0
Weed occurrence	Y	Y	N	Y	Y	N	N	Y	Y	Y	N	Y	N	Y	N	Y	Y	N	N	N	Y	Y	Y	N	4 9	1 10	0 0
HUMAN PRESENCE																											
Rights/Leases/Concessions	Y	Y	N	Y	Y	Y	N	Y	Y4	N5	Y	Y	Y	Y	N	Y	N	N	Y	N	Y	Y	Y	Y	4 13	1 6	0 0
Human habitation inside	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	N	N	N	Y	N	Y	N	N	Y	Y	Y	Y	5 12	0 7	0 0
Grazing	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y	Y	Y	Y	Y	5 11	0 4	0 0
Offences/Illegal activities	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y	Y	Y	Y	Y	5 14	0 1	0 0
Tourism	Y2	Y	Y	Y	Y	*	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y2	Y	Y	Y	Y	Y	Y	Y2	Y	5 10	0 2	0 1
Use by other government agencies	Y	Y	Y	Y	Y	N	N	Y	Y	N	Y	Y	Y	N	Y	Y	Y	N	Y	N	Y	Y	Y	N	5 12	0 7	0 0
Fuel-fodder plantations	Y	N	N	Y	N	N	N	N	N	*	N	N	Y	N	Y	N	N	Y	N	N	Y	Y	Y	N	2 6	3 12	0 1
Wildlife attacks on humans	N	Y	Y	N	Y	N	N	Y	N	N	*	Y	N	N	N	N	N	N	N	N	Y	Y	N	N	1 4	2 14	0 1
Wildlife attacks on livestock	Y	Y	N	N	Y	N	N	Y	N	N	*	Y	N	N	N	Y	Y	Y	Y	N	Y	Y	Y	N	1 9	2 9	0 1
Crop damage by wildlife	N	Y	Y	Y	Y	N	N	Y	N	N	*	Y	Y	N	N	*	Y	Y	Y	N	Y	Y	Y	Y	4 10	1 7	0 1
Compensation for attacks on humans	1	Y	Y	1	Y	1	1	Y	1	1	*	Y	1	1	1	1	1	1	1	1	*	Y	1	1	5 3	0 9	2 16
Compensation for attacks on livestock	Y	Y	1	1	Y	1	1	N	1	1	*	Y	1	1	1	Y	Y	Y	N	1	Y	Y	Y	1	5 7	0 1	2 10
Compensation for crop damage	1	Y	Y	Y	Y	1	1	Y	1	1	*	Y	N	1	1	1	Y	N	Y	1	Y	Y	Y	Y	6 8	0 2	1 9
Liabilities	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	1 0	4 19	0 0
MANAGEMENT																											
Management plan	N	Y	Y3	Y3	Y3	Y3	Y3	Y3	Y3	Y3	Y3	N	N	Y3	Y3	Y3	Y3	Y3	N	Y3	Y3	Y3	Y3	Y3	4 16	2 3	0 0
Separate budget	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	5 18	0 1	0 0
Personnel	1	171	87	41	258	2	6	57	161	16	4	Y6	4	3	6	20	14	Y6	33	20	6	8	8	12			
Equipment	N	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	N	Y	Y	Y	Y	Y	N	4 14	1 5	0 0
Zoning	N	Y	N	N	Y	N	N	Y	Y	Y	N	N	N	N	N	Y	N	N	Y	N	N	Y	Y	N	3 7	3 12	0 0
Research and monitoring	N	Y	N	Y	Y	N	N	N	N	N	Y	N	N	Y	N	Y	N	N	Y	N	N	N	N	N	3 6	2 15	0 1
Extension/Interaction programmes	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	Y	N	N	Y	Y	N	N	Y	Y	Y	Y	N	N	5 10	0 9	0 2
NGO/NGI involvement	N	Y	Y	Y	Y	N	N	Y	N	Y	Y	Y	N	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	N	4 13	1 6	0 0

NOTE: Y = Yes N = No i = Irrelevant * = Information not available

1. Minor forest fires with negligible effect.
2. Very small tourist flow, unrecorded
3. Submitted, awaiting approval.
4. While no right, leases or concessions officially exist, villagers are allowed certain activities outside the sanctuary— (see directory sheet)
5. According to the park authorities the activities of the villagers living inside the sanctuary are restricted to duly settlements and do not constitute rights or leases. The status of these activities remains unclear.
6. Exact number not specified (see directory sheet).

TABLE 2: DENSITY OF HUMAN POPULATION INSIDE, AND LIVESTOCK GRAZING WITHIN, NATIONAL PARKS AND SANCTUARIES IN KARNATAKA

(Please refer to the section 'Human Presence' above)

Park Sanctuary	Area (ha.)	Human Population*	Human Density (Persons/ha.)	Livestock Population	Livestock Density (Heads/ha.)
National Parks					
Anshi	25,000.00	1392	.06	1380	.06
Bandipur	87,420.00	390	Negligible	3500	0.04
Bannerghatta	10,427.00	200	0.21	7500	0.72
Kudremukh	60,032.35	51120	.85	30291	.50
Rajiv Gandhi	64,339.00	13000	0.20	5000	0.08
Sanctuaries					
Adichunchunagiri	84.44	Not known		00	0.00
Arabithittu	1,350.00	00	0.00	Not known	
Bhadra	49,246.00	4600	0.09	7400	0.15
Biligiri Rangaswamy	53,952.94	3450	0.06	1500	0.02
Brahmagiri	18,129.00	2000	0.11	Not known	
Cauvery	51,051.50	16973	.33	23225	.45
Dandeli	83,415.71	25775	.31	7049	.08
Ghataprabha	2,978.50	1452	.48	430	.14
Gudavi	73.68	00	000	550	7.47
Melkote	4,982.00	00	0.00	0	0.00
Mookambika	24,700.00	24981	1.01	30000	1.22
Nugu	3,032.00	00	0.00	00	0.00
Pushpagiri	10292.15	112	.01	15	Negligible
Ranebennur	11,900.00	59865	5.03	9000	7.56
Ranganithittu	67.50	00	0.00	11	6.11
Sharavathi	43,123.00	19600	0.45	14500	0.34
Shettihally	39,560.00	49202	1.24	124500	3.15
Someshwara	8,840.00	11045	1.25	20000	2.26
Talakaveri	10,559.00	3500	0.33	155	.01

*In the case of most parks and sanctuaries, the number of villages given by the wildlife authorities does not tally with the number depicted on relevant SOI toposheets. Population figures are as given by the wildlife authorities, and are likely to have been based on the 1981 Census.

National Parks and Sanctuaries in Karnataka

NOTE ON METHODOLOGY

The information in this directory is primarily from a questionnaire (QI or QA) filled in by the director or person in-charge of each national park and sanctuary in Karnataka.

Information relevant to the directory was first extracted from this questionnaire. Queries concerning gaps in the information, and seeking clarifications, were then sent to the State/UT Governments. Project personnel (listed below) also visited a sample of the parks/sanctuaries to get more detailed and up-to-date information, and went to Bangalore, Mysore, and Shimoga to consult Wildlife Wing officials. Finally, available secondary sources were consulted before drafting the directory sheets.

SOURCES

The specific sources of information are indicated in the text, abbreviated and within square brackets [ ]. **Where no source is mentioned, it implies that the information was obtained from Questionnaire I or Questionnaire A, or from the State Wildlife Wing in response to queries [qa].**

Though a list of sources, along with the abbreviations used for them in the text, is given under References at the back of the volume, some of the more important and frequently used sources are listed below:

qI/QA	Questionnaire I/Questionnaire A; filled for each park/sanctuary by the wildlife authorities.
Map	Maps of various national parks and sanctuaries sent by the wildlife authorities
mp	Management plans for various national parks and sanctuaries
notif	Gazetted notification of the park/sanctuary
tp	Survey of India topographical sheet
fv	Field visitor's report/observations
qa	Answers by wildlife wing officials to queries from IIPA (if followed by figures, these denote the year of the answers, e.g. qa'91 means answers received in 1991).

FIELD VISITORS

The names of field visitors to parks and sanctuaries in Karnataka are given below, with the place visited and the month/year of visit. Apart from those listed here, other parks and sanctuaries were not visited.

National Park	*Field Visitor*	*Dates*
Anshi	Farhad Vania	May 1989
Bandipur	Shekhar Singh	1990
Bannerghatta	Ashish Kothari,	April 1986 and
	Usha Ganesan	May 1987
Kudremukh	Farhad Vania	May 1989
	Pratibha Pande	June 1993
Rajiv Gandhi	Ashish Kothari	April 1986
	Shekhar Singh	1990
Sanctuary		
Bhadra	John D'Souza	May 1986
Brahmagiri	Ashish Kothari,	May 1994
	Sunita Rao	
Dandeli	Farhad Vania	May 1989
Ranganathittu	Ashish Kothari	April 1986
Sharavathi Valley	John D'Souza	May 1986
Shettihally	John D'Souza	May 1986

CODE, NAME, AREA, YEAR OF NOTIFICATION, AND LOCATION OF NATIONAL PARKS AND SANCTUARIES IN KARNATAKA

NATIONAL PARKS

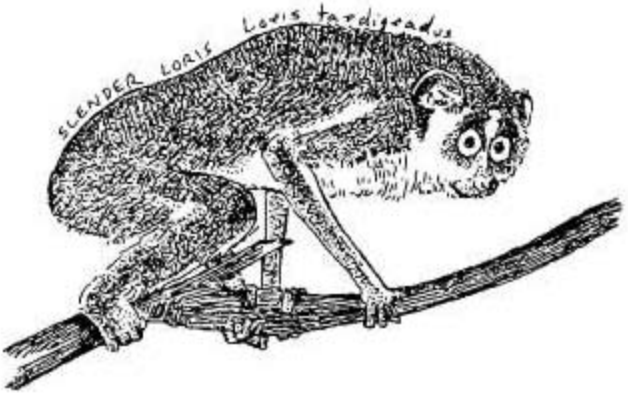
Code	*Name*	*Notified Area (ha)*	*Year of Notification*	*District(s)*
N/ANS	Anshi	25,000.00	1987	Uttara Kannada
N/BAND	Bandipur	87,420.00	1931[1]/1974	Mysore
N/BANN	Bannerghatta	10,427.00	1974	Bangalore
N/KUD	Kudremukh	60,032.35	1987	Dakshina Kannada and Chikmagalur
N/RAJ	Rajiv Gandhi	64,339.26	1955[1]/1983	Kodagu and Mysore (Nagarahole)
Total Parks Area		247,218.61[2]		

SANCTUARIES

S/ADI	Adichunchunagiri Peacocks	84.44	1981	Mandya
S/ARA	Arabithittu	1,350.00	1985	Mysore
S/BHA	Bhadra Wild Life	49,246.00	1974	Chikmagalur and Shimoga
S/BIL	Biligiri Rangaswamy Temple Wildlife	53,952.94	1974	Mysore
S/BRA	Brahmagiri Wild Life	18,129.00	1974	Kodagu
S/CAU	Cauvery Wildlife	51,051.50	1987	Mysore, Bangalore, Mandya
S/DAN	Dandeli Wildlife	83,415.71	1956	Uttara Kannada
S/GHA	Ghataprabha Birds	2,978.50	1974	Belgaum
S/GUD	Gudavi Bird	73.68	1989	Shimoga
S/MEL	Melkote Temple Wild Life	4,982.00	1974	Dakshina Kannada
S/MOO	Mookambika Wildlife	24,700.00	1974	Mandya
S/NUG	Nugu Wild Life	3,032.00	1974	Mysore
S/PUS	Pushpagiri Wildlife	10,292.15	1987	Kodagu
S/RANE	Ranebennur Black Buck	11,900.00	1974	Dharwad
S/RANG	Ranganathittu Bird	67.50	1940	Mysore

Code	*Name*	*Notified Area (ha)*	*Year of Notification*	*District(s)*
S/SHA	Sharavathi Valley Wild Life	43,123.00	1972	Shimoga
S/SHE	Shettihally Wild Life	39,560.00	1974	Shimoga
S/SOM	Someshwara Wild Life	8,840.00	1974	Dakshina Kannada
S/TAL	Talakaveri Wild Life	10,559.00	1987	Kodagu
Total Sanctuaries Area		417,337.42[3]		
Total Area under Parks and Sanctuaries		664,556.03[4]		

1. Year in which area was first declared a sanctuary prior to its subsequent upgradation to national park.
2. 1.29% of total area of state (1,91,77,000 ha.)
3. 2.17% of total area of state
4. 3.47% of total area of state



NATIONAL PARKS AND SANCTUARIES OF KARNATAKA

MAHARASHTRA

To Kurduvadi

Solapur

Bhima R.

To Satara

To Pune

Krishna R.

Kolhapur

Don R.

BIJAPUR

BIDAR

NH 9

To Hyderabad

GULBARGA

To Hyderabad

NH 13

To Hyderabad

Krishna R.

RAICHUR

Ghataprabha Sanctuary

Gokak

Ghataprabha R.

Yanur

BELGAUM

Malprabha Reservoir

Malprabha R.

Tungabhadra R.

To Hyderabad

Kurnool

ANDHRA PRADESH

GOA

To Panaji

NH 4A

DHARWAD

Alnavar

Hubli

Dandeli

Supa

Dandeli Sanctuary

To Panaji

Kumbharwada

Kalinadi R.

Tungabhadra Reservoir

BELLARY

NH 7

Anshi

Anshi National Park

KARWAR

Dharma R.

Dharma Reservoir

Ranebennur Black Buck Sanctuary

Gudavi Sanctuary

NH 17

Tungabhadra R.

Vedavati R.

Bhairavanatippa Reservoir

Anantapur

Sharavathi Valley

Talguppa

Anjanapura Reservoir

Sharavathi Sanctuary

Linganamakki Reservoir

Shettihally Sanctuary

CHITRADURGA

Bharati

SHIMOGA

Vanavasa Sagara

Bandur

Tunga Reservoir

Tarikere

Gayatri Jalashaya

Mookambika Sanctuary

Bhadra Reservoir

Someshwara Sanctuary

Barakanave Reservoir

Bhadra Sanctuary

Kudremukh National Park

Muthodi

CHIKMAGALUR

TUMKUR

Tiptur

Shimsha R.

Arkavati R.

To Palmaner

ARABIAN SEA

Bhadra R.

Malleshwara

HASSAN

NH 48

KOLAR

Chamarajasagar Reservoir

Marakonahalli Reservoir

MANGALORE

Netravati R.

BANGALORE

Adichunchangiri Sanctuary

Melkote Temple Sanctuary

Hole Narsipur

Pushpagiri Sanctuary

Krishnarajasagar Reservoir

Bannerghatta National Park

MANDYA

Talakaveri Sanctuary

Cauvery R.

MADIKERI

Arabithittu Sanctuary

Srirangapattana

Ranganathittu Sanctuary

Halagur

TAMIL NADU

Hunsur

MYSORE

Cauvery Sanctuary

Nagarahole National Park

Nanjagud

Brahmagiri Sanctuary

Nagarahole

Sargur

Mugu Reservoir

Biligiribetta

Biligiri Rangaswamy Temple Sanctuary

Stanley Reservoir

Mugu Sanctuary

Gundlupet

KERALA

To Kozhikode

Kabani R.

To Kalpatta

Bandipur National Park

Palar R.

To Gudalur

Cauvery R.

Salem

To Attur

To Bhavani

20 KM

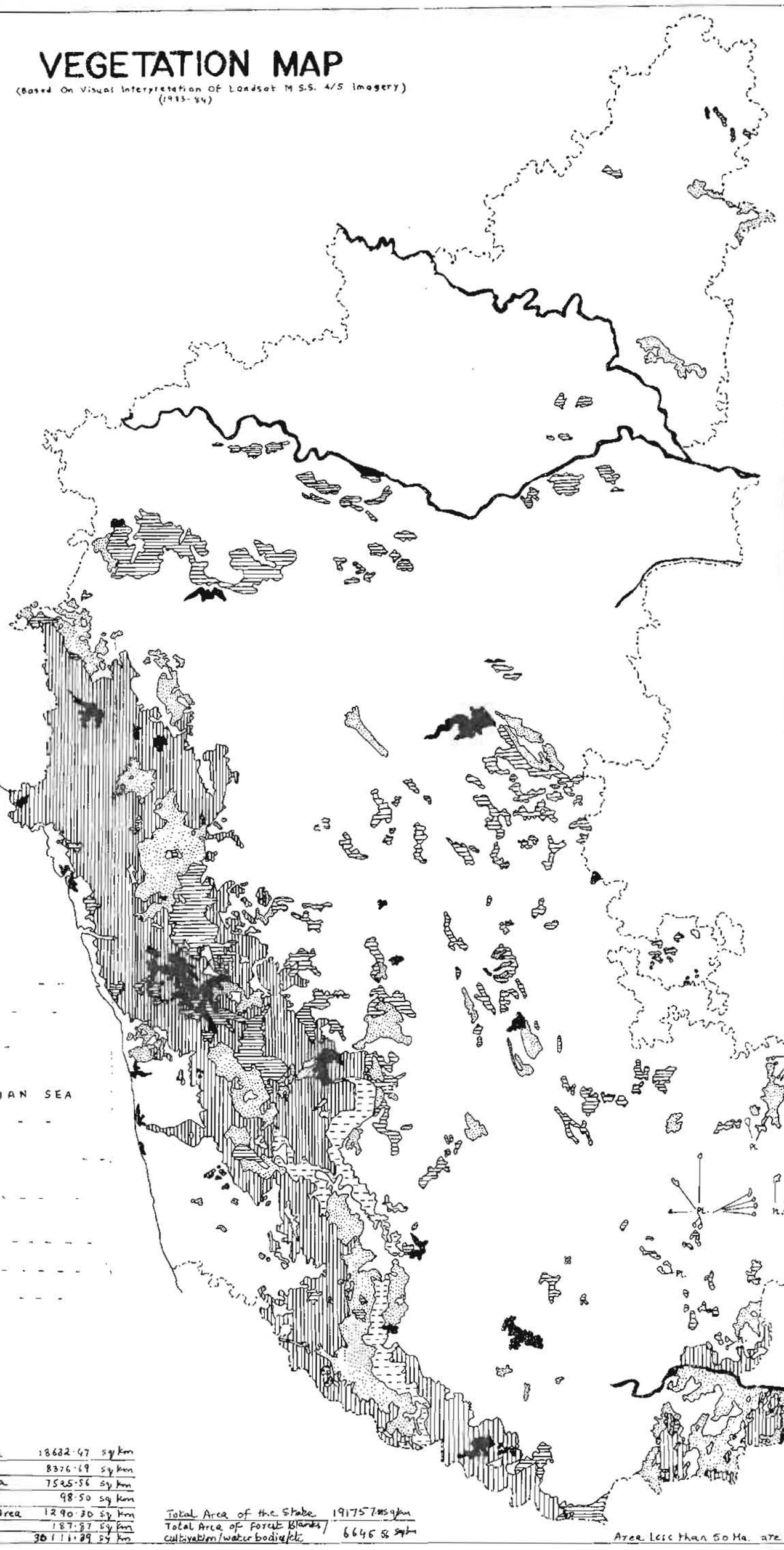
	Karnataka State bondary
	Other State boundaries
	State capital/District capitals/ Other town, cities.
	Protected Areas

74° 75° 76° 77° 78°

18° 17° 16° 15° 14° 13° 12°

VEGETATION MAP

(Based On Visual Interpretation Of Landsat M S.S. 4/5 Imagery)
(1983-84)



Closed Forest Area	18682·47	sq km
Open Forest Area	8376·69	sq km
Degraded Forest Area	7525·56	sq km
Plantation Area	98·50	sq km
Coffee Plantation Area	1290·30	sq km
Grassland Area	187·87	sq km
Total	36111·89	sq km

Total Area of the State	191757·45 sq km
Total Area of Forest Blanks/ cultivation/water bodies/etc	6646·56 sq km

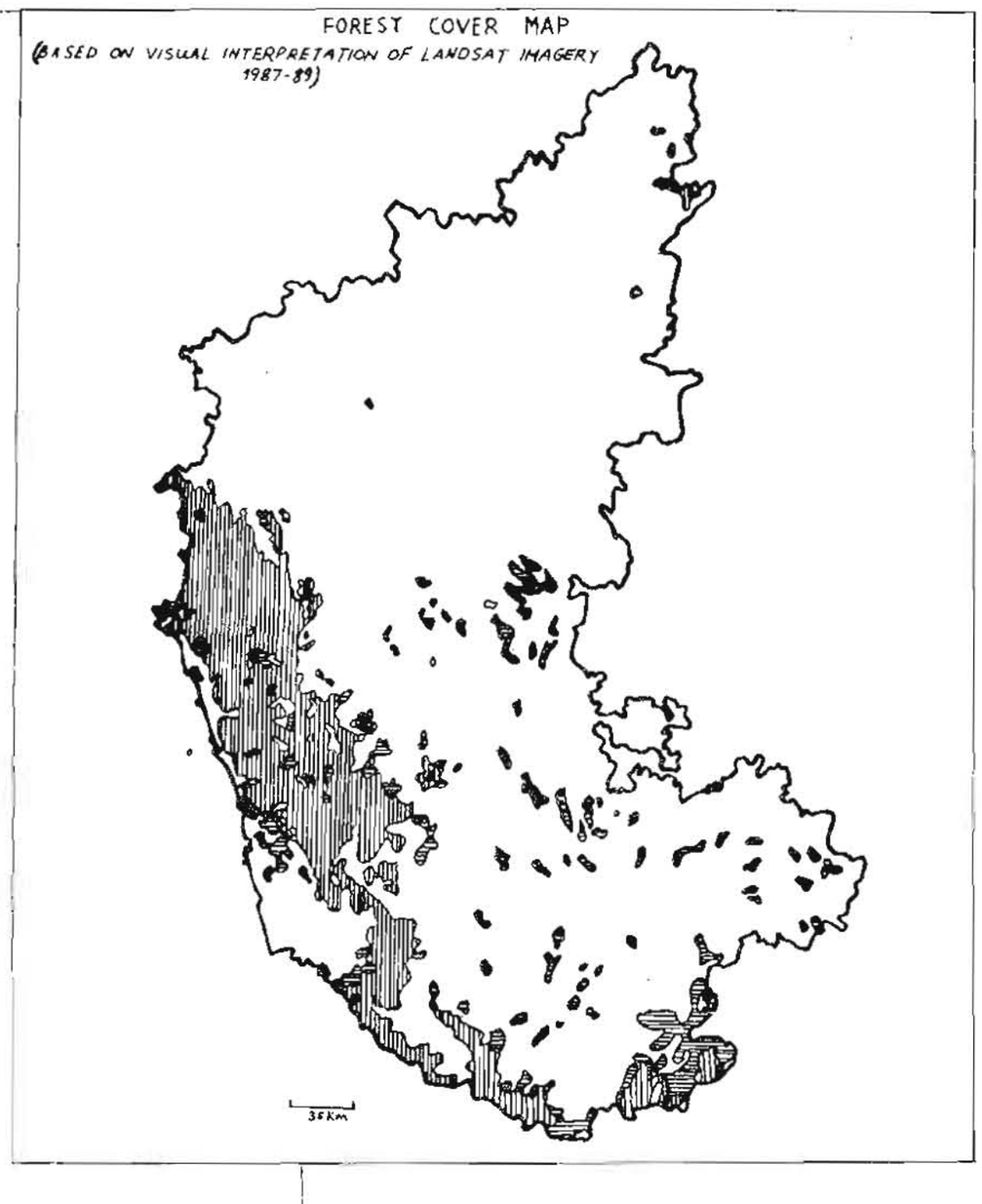
Area Less than 50 Ha. are excluded

CLOSED FOREST	
OPEN FOREST	
DEGRADED FOREST	
PLANTATIONS	PL
COFFEE PL.	
GRASS LAND	x x
WIDE OPEN WATER BODIES	
FOREST BLANKS/cultivated land	

Published in 1992.

FOREST COVER MAP

(BASED ON VISUAL INTERPRETATION OF LANDSAT IMAGERY 1987-89)



KEY TO MAPS


national park and sanctuary boundary


river bed with rocks

habitation/abandoned village sites-mostly a open grassy patch with some ruins occasionally scattered


perennial streams, small arrow indicates the direction of water flow


major seasonal stream, small arrow indicates the direction of water flow. Where river forks, and it is not possible to determine which of those forks is part of the main river, either the longest fork, or two longest forks of similar length, have been depicted


perennial river, with a wide bed, dotted area indicates sand beaches. Small island is also shown

major seasonal river with a wide, dry bed

perennial reservoir showing extents of seasonally dry patches (dotted area)

perennial lakes/ponds (natural)

seasonal lakes/ponds (natural)

ridges

embankment and a road on it.

steep cliffs

grassland

marshes

high points, peaks

highest point

check post

met roads

unmet roads

tracks/paths

vet dispensary or hospital

places of religious worship

accommodation available (e.g. Rest Houses RH, Dak Bungalow DB, Forest Rest House FRH)

plantations-Soft wood plantation; Teak plantation; Eucalypt plantation; Cashew plantation

spring

railway track

encroachments

enclosures as shown on Survey of India topographical sheets. These usually represent non-forest areas within demarked reserve forest or protected forest areas

steep high cliffs forming a raised land form.


specified width of deforested corridor, cleared to check spread of forest fires. It can also be used as roads.

old ruins

KEY TO THE DIRECTORY SHEETS

Information on the national parks and sanctuaries in Karnataka is given in directory sheets. The format of these directory sheets is explained below. Headings of sections, as they appear in the directory sheets, are given in **bold** and CAPITAL letters. The type of information each section contains is given in italics, within square brackets [], after the heading. Where headings of sections do not appear in the directory sheets (eg. HIGHLIGHTS), these are also given within brackets. Clarifications and qualifications, if any, concerning each section are given in normal typeface after the brackets close.

[Code: *Appears at the top right-hand corner of the first page of each directory sheet. Each national park or sanctuary has a code consisting of three elements as follows:*

1. *The first three letters denote the State, eg. KAR for Karnataka.*
2. *The next letter denotes whether the area is a national park (N) or sanctuary (S), eg. KAR/N/ANS for Anshi National Park and KAR/S/ADI for Adichunchunagiri Peacocks Sanctuary.*
3. *The next three letters denote the first three letters of the first word in the name of the park or sanctuary (see examples above). Where the first three letters of the first word are identical for more than one park/sanctuary, the fourth letter is used. For example, KAR/N/BAND denotes Bandipur National Park, whereas KAR/N/BANN denotes Bannerghatta National Park.*

(For a full list of codes and names of national parks and sanctuaries of Karnataka, see page 12–13)

[NAME OF PARK/SANCTUARY]

[HIGHLIGHTS: *Gives a brief description of the area, highlighting the ecological, topographical, historical, and cultural values.*]

LEGAL STATUS: [*Gives the date on which a sanctuary or national park was notified, and whether the steps required to complete legal procedures have been taken or not. If the area was notified prior to 1972, it gives the Act under which this was done. For national parks where final notification has not been issued (for explanation see below) it gives the date when the intention to constitute the area into a national park was declared. For those national parks which were earlier sanctuaries, it also gives the date on which the area was earlier notified a sanctuary. In all the above instances the notification numbers, where available, are also given.*]

The Wild Life (Protection) Act, 1972, (hereafter called the Act) which governs the setting up and management of national parks and sanctuaries, prescribes a number of steps for the establishment of protected areas. Certain amendments have recently (1991) been made in the Act, and the steps given below are from the latest version of the Act.

These steps are:

1. Declaration of intent to make an area into a sanctuary [Section 18(1)] or national park [Section 35(1)]. (Previous to the 1991 amendments, this step was not required for setting up a sanctuary, and will therefore not be applicable to any of the existing sanctuaries of Karnataka).
2. Identification of any rights existing in the area [Section 19].
3. Acquisition, settlement, exclusion, acceptance or disallowance of these rights [Section 24].
4. Final notification of a sanctuary [Section 26(1)] or national park [Section 35 (4)].

Prior to 1972, some sanctuaries in the state were set up under the Mysore Game and Fish Preservation Act of 1901. In such cases, the 1972 Act does not require the above-mentioned steps (Section 19 to 25) to be taken. In some sanctuaries, such as Melkote and Nugu, it is known that no rights exist; nevertheless, legal procedures will still be considered incomplete, since the 1972 Act does not provide exemption in such cases.

Control by Wildlife Wing: The Act prescribes that each state may have a Chief Wildlife Warden [Section 4 (1)] and that the control of the naitonal parks and sanctuaries would rest with the wildlife staff.

In Karnataka the control of several of the national parks and sanctuaries is shared between the Wildlife Wing and the Territorial Wing of the Forest Department. For those areas where the control is still not with the Wildlife Wing (e.g. Ghataprabha), this fact is mentioned here or in the HIGHLIGHTS. A full list of these appears in the chapter WILDLIFE MANAGEMENT IN KARNATAKA (p. 3).

Where certain activities or specific uses in a park or sanctuary are controlled by agencies other than the Wildlife Wing, the relevant information is given under the head Use by Other Government Agencies, in the section on HUMAN PRESENCE.

AREA AND ZONING: [*Gives the total area of the park or sanctuary in hectares, rounded off to two decimal places; and in square kilometers, within parentheses, also rounded off to two decimal places. Also gives details of any modifications in this area that may have taken place since the park/sanctuary was established, or the extent of area not yet transfered to the Wildlife Wing, if any. This section further gives the existing or proposed break-up of the area into various types of zones, if any.*]

Various types of zonation, mainly into core and buffer management units, are found in parks and sanctuaries in India. The core zone is usually the sanctum sanctorum where no or minimal human activity is allowed, while the buffer comprises of areas where wildlife protection interest are mixed with human use interests. In many protected areas of Karnataka, a third category, the tourist zone, has been demarcated. These are areas where visitors are allowed, and facilities developed for them. Bandipur National Park also has an Administrative Zone (for offices, etc.) and Rajiv Gandhi National Park a Restoration Zone (for regeneration of degraded area).

The core and buffer zones may be demarcated in various ways:

1. Where both the buffer and the core zone are inside the notified park/sanctuary.
2. Where the park/sanctuary is designated the core zone, and an area surrounding it but **outside the park/sanctuary** is designated buffer zone.
3. Where a national park is designated the core zone and a sanctuary surrounding it or adjacent to it is designated buffer zone.
4. Where the original notification designates both the core and the buffer zones, but only the core zone has been taken over for management as park/sanctuary while the buffer zone remains outside the managed area.

The parks and sanctuaries of Karnataka all fall into the first category. Also, the term 'zone' has been universally used to describe what has been variously called 'belt' or 'area' in the notifications and other documents.

LOCATION: [*Gives the administrative district(s) within which the area is located, the latitudinal and longitudinal range of the area, and the nearest town, railhead and airport.*]

Information regarding longitude and latitude of each park and sanctuary was mostly obtained from Survey of India topographical sheets and state map. Information on nearest town, railhead, and airport, is mostly also taken from toposheets, supplemented by authorised tourist road guides.

APPROACH(ES): [*Gives distances and convenient approaches to the area, from state headquarters or other prominent towns or cities. Unless otherwise specified, the routes mentioned are by road.*]

Approaches to parks and sanctuaries have mostly been given from Bangalore, Mysore, and/or Mangalore.

TOPOGRAPHY AND CLIMATE: [*Gives altitudinal and temperatures ranges, and mean annual rainfall.*]

Information regarding highest point in each park and sanctuary was mostly obtained from Survey of India toposheets. Data on the lowest point is as given by the wildlife authorities, except in a few cases where the lowest contour line is taken from the toposheets.

Information regarding temperatures and rainfall is as given by the wildlife authorities. Only in some cases was it possible to verify this with records of the meteorological station nearest to the park/sanctuary.

The abbreviations used under this head are:

m : metres above mean sea level
mm : millimetres
C : celcius

FLORA: [*Describes the vegetation, gives the forest cover density as indicated in satelite imagery, and lists the forest types as per the revised list of Champion and Seth (1968). Information is also given about plantations, and about introduced and threatened plant species, if any. A list of trees and other plants found in the park/sanctuary is given within the main text if short, and at the back of the directory sheet (Appendix A) where long.*]

The names of plants appear in the text mainly in their scientific forms. The English, vernacular, and family names of these species are given in Appendices 1 & 2, at the back of the book. Plants have been divided into 'trees' and 'other plants': in the former are included plants which have been definitely classified as trees in recognized texts; in the latter come all other forms of plants, including those for which the classification into 'trees' and 'non-tree plants' is unclear.

Available lists of flora are not comprehensive, except in a small number of areas. In the majority of cases, information is scanty on non-tree species.

FAUNA: [*Lists mammals, birds, reptiles, fish, amphibians, insects and other fauna occurring in the area. Where the fauna lists are extensive, they have been appended to the directory sheet (Appendix B). Also indicates locally threatened species, i.e., those that are threatened in the area, irrespective of whether they are threatened in the country as a whole. Overpopulation of species, if any, is indicated.*]

Usually only common names of fauna are listed, except in the case of some species of fish, for which common names are not available. Common names of various species are listed in alphabetical order, generic names first and then specific name (e.g. Crow, House). For the sake of comparability, the scientific names of species appearing in the sheets are given in Appendix 4.

There are inconsistencies in the usage of common and scientific names among different sources. For the purpose of this directory, usage has been standardised according to the following sources:

Mammals : Prater 1980
Birds : Ripley 1982
Snakes : Whitaker 1978
Other Reptiles : Daniel 1983
Amphibians : Hawkins 1986; ZSI 1992
Fishes : Chhapgar 1987; Jayaram 1981

The available lists of fauna are neither necessarily complete nor always current. Especially scanty is information on insects, fish, and other invertebrates. Biological studies on many parks and sanctuaries have not been done or are inadequate. It is, therefore, expected that all the fauna listed for any park or sanctuary might have occurred there at some point in time, but whether all of it still exists there is not certain.

The population and density of species has not been mentioned except occasionally in a most general way. This is mainly because reliable information on these aspects was usually not available.

OCCURRENCE AND CONTROL OF DISEASE : [*Gives information about flora and fauna diseases and epidemics, vaccination of livestock, checking of livestock entering the sanctuary/park, and location of the nearest veterinarian.*]

Vaccination for Livestock: As very few areas have reported vaccination programmes for livestock, their absence has not been mentioned in the directory sheets. Only where vaccination has actually taken place, has the fact been mentioned. The same applies for the practice of checking whether livestock entering parks or sanctuaries are vaccinated. The 1991 amendments to the Wildlife (Protection) Act have made such vaccination of livestock, in or within five km. of a sanctuary or national park, a compulsory duty of the wildlife authorities, and have prohibited entry of un-vaccinated livestock into such areas.

Veterinarian: Location of veterinarians in or around the park/sanctuary has been taken from wildlife authorities' answers, or from SOI toposheets. Though veterinarians have been reported from many areas, it must be remembered that they are invariably trained to look after domesticated animals. However, their presence ensures the availability of their advice and services during an epidemic or in an emergency involving wild animals.

OTHER FACTORS AFFECTING HABITAT: [*Gives details of forest fires, frost, gales and cyclones, hailstorms, hot winds, pollution, water-logging, avalanches, and landslides, if any.*]

In most cases, the level of information available is not adequate to judge the impact of these occurrences, so only their existence, extent, and frequency has been mentioned.

WATER RESOURCES : [*Lists natural and artificial water sources, both perennial and seasonal.*]

The location of water sources is taken from SOI toposheets and from maps provided by the wildlife authorities.

BUDGET : [*Indicates whether a separate budget exists for each area. Where a separate budget does exist, the budgeted amount for the last two years for which information is available is given. Budgetary figures have been given in either of two forms: budget allocated, or actual expenditure incurred*].

MANAGEMENT PLAN : [*Indicates the existence of a management plan for the area, who has prepared it, its status, and the period for which it is valid.*]

Though some of the parks and sanctuaries have prepared management plans, these vary in content and coverage; some have a lot of details, while others are just a little more than a budget for capital expenditure.

Also, it is not always certain that the management plan, though prepared, has been approved, or is being followed even if it has been approved.

PERSONNEL: [*Gives designation and number of staff, and identifies the local in-charge. Only Wildlife Wing staff is mentioned, unless some Territorial Wing staff is stationed specifically for wildlife duties.*]

The senior-most officer of a park or sanctuary living in or adjacent to it, has been designated the local in-charge.

EQUIPMENT : [*Lists equipment available at or for the area. Does not list basic equipment like torches and lathis, nor office equipment and furniture.*]

RESEARCH AND MONITORING : [*Describes research and monitoring work done in the past, or currently underway, on the park or sanctuary. Also indicates availability of literature on the area.*]

COMMUNITY INTERACTION PROGRAMMES: [*Describes educational activities carried out by the wildlife authorities or local communities on wildlife and wildlife management.*]

HUMAN PRESENCE : [*Gives details regarding rights and leases, habitation, grazing, offences and illegal activities, tourism, use by other government agencies, and other miscellaneous activities (including human, livestock, and crop damage by wild animals, and clashes between officials and people) within the area, indicating extent and type of activity.*]

Habitation: The number of villages mentioned in the directory sheets is that given by the state wildlife authorities. In some cases this is different from the number shown on the map, either because the locations of some of the villages are not known and therefore cannot be shown on the map, or because the map is based on Survey of India toposheets which depict a different number of villages. Such discrepancies, if any, are mentioned in this section.

In addition to villages, SOI toposheets also indicate 'settlements', 'enclosures, 'habitation sites', and 'hamlets'. The number of these occuring within the boundaries of a park/sanctuary have also been mentioned in the directory sheet.

Population figures have been given in relation to the number of villages cited only by the wildlife authorities. Several areas reported the existence of 'enclosures'; these are defined as non-forest lands, whose area, though geographically inside the park/sanctuary is usually not included in its notified area. Each enclosure might have one or more villages located within, though occasionally enclosures contain only plantations or other human activities.

Non-wood Forest Produce: This phrase includes herbs, roots, plants, bark, seeds, flowers, cocoons, grasses, leaves, bamboo, kindling and brushwood.

Plantations for Fuel and Fodder: Indicates if these have been raised, for use by villagers living in and around the park or sanctuary.

Compensation: Indicates whether and how much has been paid in cases of human injury or fatality, livestock lifting, and crop damage caused by wild animals in and around a park/sanctuary.

Number of Visitors: Indicates the annual number of visitors to a park/sanctuary for the latest year that figures are available. As there is no strict regulation of entry to most of the parks and sanctuaries, this figure is often only an estimate made by the wildlife authorities.

INFORMATION FOR VISITORS: [*Indicates entry restrictions if any, best time for visiting the area, historical and cultural sites, accommodation and other facilities available, and future plans, if any, to extend tourist facilities.*]

Seasons: Summer extends from March to May, monsoons from June to October, and winter from November to February.

NGOs/INDIVIDUALS ASSOCIATED: [*Gives names and addresses of non- governmental groups or individuals associated with the area, including Honorary Wildlife Wardens, if any. Full addresses of these appear in Appendix 8.*]

CONTACT ADDRESS(ES): [*Contact addresses have been given, where available, of both the local in-charge, who can be contacted personally at the park or sanctuary, and of the higher officer, who should be addressed in the matter of accommodation, information, etc.*]

The following address will be relevant for all parks and sanctuaries in Karnataka:

Chief Wildlife Warden
Aranya Bhawan, 2nd floor
18th Cross, Malleswaram
Bangalore-560003
Karnataka

Clarifications pertaining to all or many of the above sections:

Date of Information: For some items, the date of information has been given in the text. For others, the information has been checked with the State wildlife authorities upto July, 1990. However, in many items, like population, fauna and flora listing, etc., the information is not necessarily updated to July, 1990, but is as appeared in the last update provided by the State authorities.

Information not available: Wherever it is indicated, for a head or item, that information is not available, it means that information is not available with the Wildlife Wing of the concerned State, including the park/sanctuary authorities. It is quite possible that this information is available with some other source, but we have not been able to procure it.

Territorial Wing: In several parks and sanctuaries, officers of the Territorial Wing of the Forest Department issue permits and licenses for, or in other ways control, human activities. Where relevant, this has been mentioned in the sheet, or in the sections LEGAL STATUS, USE BY OTHER GOVERNMENT AGENCIES, or INFORMATION FOR VISITORS.

Distances: All distances to a park/sanctuary, unless otherwise specified, are to the closest point on the boundary of the park/sanctuary which is easily accessible.

ANSHI NATIONAL PARK

KARNATAKA

GOA

N

to Kumbari (Goa)

to Kusavali

to Atgaon

Kelole

Karsangal

Ambevada

Mukmati Maddi 742

782

789

Hale Kundal

to Gavlivada (Goa)

Kundal 688

Kanere Dam Site *

to Joida, Supa, Dandeli town, Belgaum

DB (PWD) Kumbharvada

to Joida

Maynal

644

Ukhal

Bombulsay

Gavadivada

Kaisay

Matkhor

701 Matkarwa

Ambadgali

Kalavali

Chandroli

Amboli

Kaneri Nadi

to Dandeli

Kadagarani

Bidoli 617

Kadugali

Pavala Halla

654

Ulvi

Shela

to Sukmane

to Tudav (Goa)

to Tudav (Goa)

Vende Halla (s)

852

744

Durga Guddo

714

Jadd. Bole (s)

794

615

732

768

869

927

756

662

678

541

496

515

Sakali Halla

Vaki Halla (s)

Vaki Halla

to Kadathalli

to Ghotegali

to Sadashivgada + Karwar

Ponkadra

FRH

Kadra

Kalinadi R.

Sullali

Balemane

TP

Suingeri

to Borgigadde

to Dasanali + Kadra

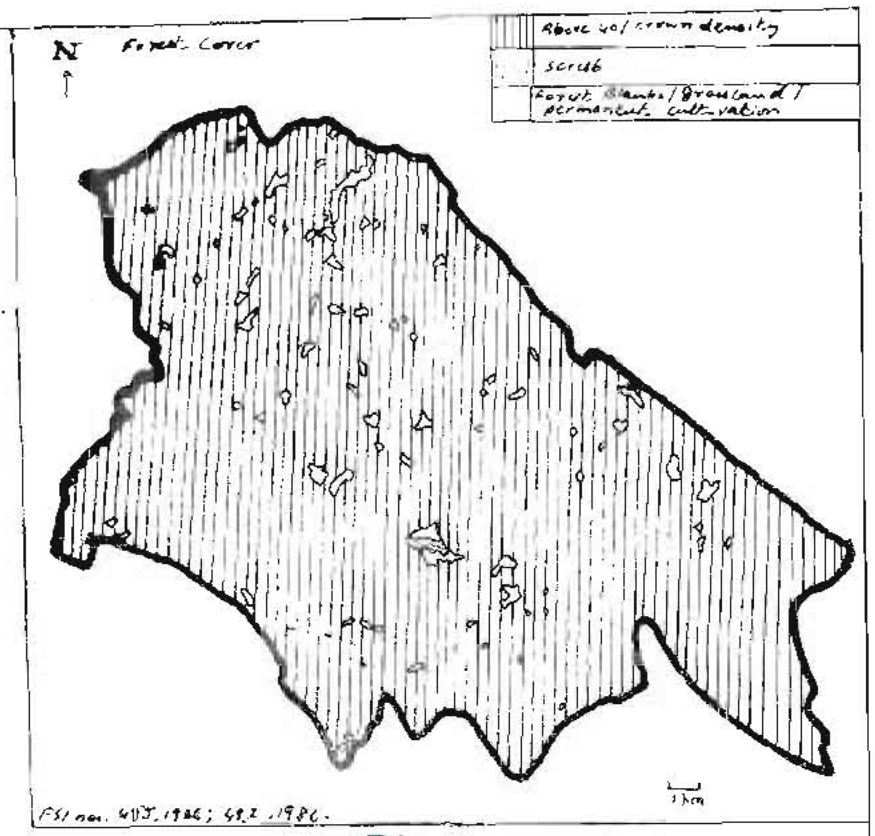
Kalinadi R.

Waterfall

Fl- 54 meters.

2 km

* This dam has now been completed since we do not yet have the extent of the reservoir, we have not shown it, on the map.



Villages and Hamlets inside National Park

V1- Kuravli
V2- Jhalavali
V3- Gatta
V4- Parye
V5- Gundali
V6- Kumagali (Varsoe)
V7- Maharvada
V8- Navar
V9- Ambal
V10- Gali
V11- Honni
V12- Kumgali
V13- Vaspad
V14- Landa
V15- Nanevada
V16- Patne
V17- Kolimala
V18- Barsegali
V19- Talapa
V20- Dudgali
V21- Chilke
V22- Tuppegali
V23- Malahepani
V24- Kuneman
V25- Nujji
V26- Gavala
V27- Ajje
V28- Malshet
V29- Navar
V30- Pansoli
V31- Kelimale
V32- Male (Madhumale)
V33 Savant Mattarni
V34- Kadpad
V35- Katte
V36- Mayagini
V37- Nigundi
V38- Moppayi
V39- Ramagali
V40- Badapholi
V41- Bharadi
V42- Damble
V43- Bhakhi
V44- Kodugali
V45- Nargali
V46- Pasoli
V47- Khamshetadi
V48- Devane
V49- Bidoli
V50- Magali
V51- Patne
V52- Anshi
V53- Tirval
V54- Goyar
V55- Bargadde
V56- Masoli
V57- Digali
V58- Barpali
V59- Vel Matagaon
V60- Sakal Matagaon
V61- Kailvada
V62- Devaramane
V63- Ambevadi
V64- Chand Kunagi
V65- Kallalli
V66- Ponkadra

ANSHI NATIONAL PARK

Recently notified as an intended national park, Anshi was carved out of the Dandeli Sanctuary when the latter was restructured in 1987. This step "to alter the limits and boundaries of the sanctuary was considered necessary in view of the hydro-electric project, naval base, rehabilitation of displaced persons, road, transmission lines, mining, and other industries which existed inside it" [notif]. The park area is less disturbed than the Dandeli Sanctuary, and contains deep valleys, steep hills, and rich evergreen and semi- evergreen forests. As per G.O dated 8.5.92 the Dandeli Wildlife division has been created and the staff working in the area stand transferred to the wildlife division. To the west,the park adjoins the Cotigao Sanctuary in Goa [Das Gupta 1976].

LEGAL STATUS: Intention to constitute the area into a national park was declared on 2nd September, 1987, vide notification AHFF 77 FWL 87 [notif]. Earlier this area was a Reserved Forest [qa '91, tp 1976–77].

AREA AND ZONING: 25,000 ha. (250 sq. km.) No zoning.

LOCATION: *District* Uttara Kannada (North Kanara); *Latitudinal range* 14°54'01" to 15°07'18" N [tp]; *Longitudinal range* 74°16'02" to 74°29'18"E [tp]; *Nearest town* Dandeli (37.5 km); *Nearest railhead* Dandeli (37.5 km) [St. map]; *Nearest airport* Belgaum (110.5 km) [Rd. mp].

APPROACHES: From Bangalore to Belgaum (480 km) on to Ganeshgudi (76 km), then via Joida (8 km) in Dandeli sanctuary to Kumbharvada (12 km), which is 4 km from the park boundary [tp], or from Bangalore to Hubli (427 kms) by rail and on to Dandeli by road (77 kms) and then to Anshi by road (37.7 kms).

TOPOGRAPHY AND CLIMATE: *Altitude* 200 m [q1] to 927 m [tp], the highest point being in the north-west; *Temperature* 16°C to 37°C; *Mean annual rainfall* 2000 mm [Das Gupta 1976].

FLORA: Anshi is clad in evergreen and semi-evergreen forests [8th Pl. Prop.]—exact forest types as per Champion & Seth classification are not known. Between 1962 and 1985, 286.48 ha. of Teak *Tectona grandis*, Eucalyptus, and Silver oak *Grevillea robusta* plantations were raised [qa '91]. In 1987–88, 250 ha. of plantations were done, 50 ha. for firewood and 200 ha. for commercial timber. All plantations have been carried out by the Territorial Wing of the Forest Department.

Eucalyptus and Silver oak are introduced species. The weeds Eupatorium *Chromolaena odorata*, *Lantana camara* [q1] and Parthenium [8th. Pl. Prop.] are found in the park. Eupatorium has especially spread in openings caused by clearfelling carried out in the past, along roads, and in the grid lines cut by the Karnataka Power Corporation [8th Pl. Prop.]. Manual uprooting is proposed.

Trees: [q1, 8th. Pl. Prop., Pascal 1982]

Acacia spp.
Anacardium occidentale
Bauhinia spp.
Bombax spp.
Buchanania spp.
Carissa spp.
Chloroxylon swietenia
Diospyros spp.
Eucalyptus spp.
Grevillea robusta
Haldina cordifolia
Meliosma spp.
Michelia spp.
Pterocarpus spp.
Tectona grandis
Xylia xylocarpa

Other Plants: [q1, 8th. Pl. Prop., Pascal 1982]

Acacia spp.
Artemisia spp.
Bambusa spp.
Chromolaena odorata
Lantana spp.
Parthenium spp.

FAUNA:

Mammals [q1, fv, 8th. Pl. Prop.]

Boar, Indian Wild
Civet, Small Indian
Deer, Spotted
Dog, Indian Wild
Elephant, Indian
Fox, Indian
Gaur
Hare, Indian
Jackal
Leopard
Leopard-cat
Macaque, Bonnet
Mongoose, Common
Porcupine, Indian
Sambar
Squirrel, Common Giant Flying
Squirrel, Grizzled Giant
Squirrel, Indian Giant
Tiger

Reptiles [q1, 8th. Pl. Prop.]

Cobra, King
Python, Indian

Birds

Hornbill, Malabar Pied
Junglefowl, Grey
Peafowl, Common

No information is available on other fauna in the park. There are 225 artificial salt licks in the park.

OCCURRENCE AND CONTROL OF DISEASE: Inoculation of livestock from park villages and those in adjoining areas is done with the help of the Veterinary Department. The nearest veterinarian is at Dandeli, 37.5 km away.

OTHER FACTORS AFFECTING HABITAT: Minor forest fires are known to occur, and the park authorities have taken counter measures .

WATER RESOURCES: Water pollution of the Kaneri Nadi has been reportedly been caused by the Kaiga Atomic Power Station . There is a problem of water scarcity in summer, since most of the waterways dry up by February [8th. Pl. Prop]. Check dams have been constructed across many waterways for soil and water conservation.The Kaneri Nadi and Pavala Halla flow along the north and north eastern boundary of the park, while the Sakali Halla bounds it to the south east [tp] . In addition there are several major perennial streams including Jaddi Hole, Vaki Hole, Katte Hala and Bende Halla, numerous seasonal streams , and four springs [tp].

BUDGET: Budgetary expenditure incurred during the period 1988–89 was Rs. 2.97 lakhs.

MANAGEMENT PLAN: A Management Plan is being prepared. In the meanwhile work is being carried out on the basis of an annual plan of operation.

PERSONNEL: The RFO (WL), Dandeli is looking after the park for the present. The actual transfer of the Territorial Wing staff is pending, though a G.O. to this effect has been issued.

EQUIPMENT: None

RESEARCH AND MONITORING: None

COMMUNITY INTERACTION PROGRAMMES: A few film shows have been held for villagers, by the RFO (WL), Dandeli, with equipment borrowed from Dandeli Sanctuary.

HUMAN PRESENCE:

Rights and Leases: The local villages have rights to habitation and agriculture (over 544 ha.),and are allowed to graze their cattle around their hamlets. They are also permitted to fish in the rivers and nallahs of the park. The right to religious yatra (over 150 ha.) and religious monuments (over 50 ha.), too is held by local villages. Quarrying is also done by private contractors (see *Use by Other Government Agencies*).

Habitation: There are eight forest villages' (see map for list) and 22 hamlets with a population of 1392 inside the park. There are four villages in the area adjacent to the southern boundary, with a total population of 2568 [qa'91], and another 18 settlements adjacent to the northern and eastern boundary [tp], the population of which is not known

Offenses and Illegal Activities: Some encroachment cases are reported from the park, details of which are not available.

Tourism: Facilities are yet to be developed.

Use by Other Government Agencies: The PWD controls 39.5 km of roads in the park. The Karnataka Electricity Board and the Karnataka Power Corporation have transmission lines running through the area.

The Territorial Wing of the Forest Department has quarters at Anshi and is using the park for plantations of Teak, Silver oak, Eucalyptus and softwoods [tp]. Further, dead timber, MFP and fuelwood is extracted from the whole area by the Forest Department. Quarrying is carried out over 500 ha. by government agencies and private contractors and is proposed to be stopped after the expiring of the lease period.

Miscellaneous: Attacks by wildlife on livestock are reported, but there is no further information on its extent or, of compensation paid.

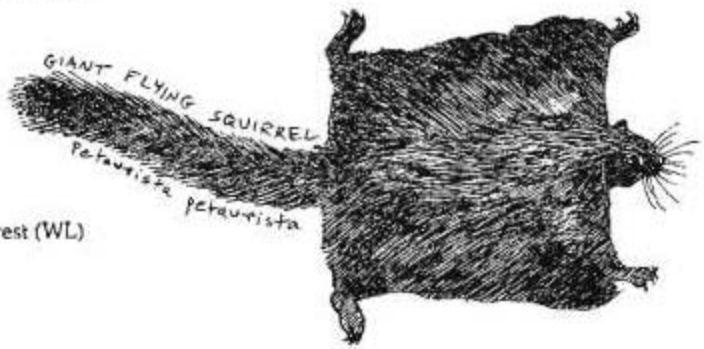
INFORMATION FOR VISITORS: While the entire park is accessible to tourists on foot or cycle, motor vehicles (with permits) are allowed in only half of the area. Entry is prohibited between 6 pm and 6 am. Anshi is best visited between November and June when it is dry and wildlife viewing easy. The Ulvi temple near the south-eastern edge of the park is worth a visit. One resthouse inside, and two in the adjoining area, provide overnight accommodation for visitors. Future proposals include the holding of nature camps, developing of game roads and construction of watchtowers. Educational material is to be provided to visitors. Resthouses and other tourist facilities are to be constructed and a picnic spot developed near Ulvi, adjacent to the south-eastern boundary.

NGOs/INDIVIDUALS ASSOCIATED: None

CONTACT ADDRESSES:

1) The Conservator of Forests,
Wildlife Preservation Circle
P.O. Shimoga, - 577201
Karnataka

2) Local in-charge:
The Deputy Conservator of Forest (WL)
P.O. Dandeli, - 581325
Uttara Kannada
Karnataka



BANDIPUR NATIONAL PARK

One of India's best known protected areas, Bandipur has a long history of protection. In the early part of this century, the former Maharajas of Mysore realized its value as a wildlife preserve. Several Reserve Forest blocks over an area of 9000 ha. were declared a Game Sanctuary in 1931, under the Mysore Game and Forest Regulations of the same year. In 1941 the area was expanded to 80,000 ha. and reconstituted as Venugopal National Park, named thus after a local deity worshipped by the former Maharajas. A 600 ha. sanctum sanctorum in the park, called Bandipur Wildlife Park, was left completely untouched by forestry operations which continued in the rest of the area. In 1973, Bandipur became one of the first of India's Tiger Reserves, and in 1974, intention was declared under the Wildlife (Protection) Act to notify it a national park.

Covered by dense vegetation dominated by Teak *Tectona grandis*, the park's "terrain is undulating and broken by chains of rolling hills with vast stretches of valleys that are sprinkled with meadows and seasonal water courses" [Basappanavar 1985].

Bandipur forms an important part of a much larger stretch of protected forest area, with Rajiv Gandhi National Park to its north-west (across the Kabani Reservoir), Nugu Sanctuary to its north (connected by the Nugu Reservoir), Mudumalai Sanctuary (Tamil Nadu) adjoining its southern boundary, and Wynad Sanctuary (Kerala) connected in the south- west. This entire forest area is now a part of the Nilgiri Biosphere Reserve, and is one of India's most valuable habitats for species like the Elephant and the Tiger.

LEGAL STATUS: Intention was declared to constitute the area into a national park, vide notification No. AFD/146/FWL/73, dated 5 June, 1974. For some unknown reason, this notification was not published in the State Gazette, and a fresh notification, No. FFD.193.FWL.82, was issued on 15 March, 1985.

AREA AND ZONING: 87,420 ha. (874.20 sq. km)* [notif]. The Tiger Reserve covers an area of 86,573 ha., and is roughly divided into a Core or Wilderness Zone of 52,300 ha., a Buffer Zone of 26,000 ha., a Tourism Zone of 8,200 ha., and an Administrative Zone of 100 ha. [Basappanavar 1985]. The balance 820 ha is the area occupied by the two state highways passing through the Tiger Reserve.

LOCATION: *District* Mysore; *Latitudinal Range* 12°03'30" to 12°54'17" N [tp]; *Longitudinal Range* 76°07'00" to 76°52'40" E [tp]; *Nearest town* Gundlupet (15km) [tp]; *Nearest railhead* Nanjangud (60 km); *Nearest airport* Mysore (80km).

APPROACHES: From Bangalore via Mysore (140 km), to Gundlupet (60 km), and then to the park (18 km) [tp]. From Udagamandalam (in Tamil Nadu) via Gudalur (37.5 km) to Bandipur (inside the park) (35 km) [tp].

TOPOGRAPHY AND CLIMATE: *Altitude* 680 m [q1] to 1454 m, the highest point located in the south-eastern part of the park [tp]; *Temperature* 11°C to 30°C [mp 1974]; *Mean annual rainfall* 625 mm (at Moyar, near Bandipur) to 1250 mm (western boundary).

FLORA: Remote sensing imagery indicates that most of the park has closed forest (crown density 40% and above), and the northern and eastern extremities have sections of open forest with patches of scrub [Landsat 1986]. There is no forest cover adjoining the northern and eastern boundaries, but the other parts are bounded by forest. A comparison of Landsat imagery of 1983 and 1989 indicates mixed results. The good news is that 104.48 sq. kms which was earlier open forest (crown density between 10% to 40 %) has been converted to closed forest, and 36.83 sq. kms of earlier scrub land (crown density below 10%) have improved as open /closed forests. The bad news is that 15.54 sq. kms of closed /open forests have become non-forest areas, 32.82 sq. kms of earlier dense forests has changed into open forest, 33.82 sq. kms of earlier closed /open forest have changed into scrub,

* The map area of the park comes to substantially less than the notified area; this discrepancy could not be resolved.

and 0.50 sq. kms of scrub has changed into non forests [FSI 1993]. Forest types include Dry Deciduous Scrub 5/DS1, Dry Teak Bearing Forest 5A/C1(b), and Moist Teak Bearing Forest 3B/CI [mp 1974]. According to the Botanical Survey of India, the higher reaches of the park also contain semi-evergreen forests (type not specified) [Naithani 1966].

The park has scattered plantations of Teak *Tectona grandis* and Eucalyptus [Q1], which are currently not being worked [qa '91].

Plant species of special interest are *Kydia calycina*, and the bamboo *Bambusa arundinacea*, both favourite food of elephants.

The weed Lantana is spreading in the Tourism Zone and is being uprooted in certain select areas [Basappanavar 1985]. Another weed, Eupatorium *Chromolaena odorata*, is not gregarious but other weeds like *Indigofera* sp. *Desmodium* sp. *Decastichia crotonifolia* and *Lea chirensis* are spreading fast.

Trees and Other Plants (see Appendix A)

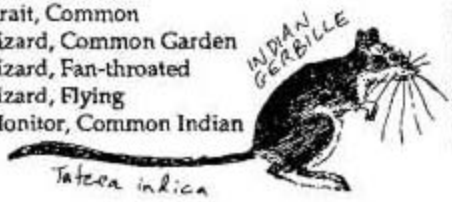
FAUNA

Mammals [q1, mp 1974, mp 1988, Basappanavar 1985, Johnsingh 1983]

- Antelope, Fourhorned
- Bear, Sloth
- Boar, Indian Wild
- Cat, Jungle
- Civet, Common Palm
- Civet, Small Indian
- Deer, Barking
- Deer, Mouse
- Deer, Spotted
- Dog, Indian Wild
- Elephant, Indian
- Fox, Indian
- Gaur
- Gerbille, Indian
- Hare, Indian
- Hyena, Striped
- Jackal
- Langur, Common
- Leopard,
- Leopard-cat
- Macaque, Bonnet
- Mongoose, Common
- Mongoose, Stripednecked
- Otter, Common
- Pangolin, Indian
- Porcupine, Indian
- Rat, Indian Bush
- Rat, Whitetailed Wood
- Sambar
- Squirrel, Common Giant Flying
- Squirrel, Grizzled Giant
- Squirrel, Indian Giant
- Squirrel, Threestriped Palm
- Tiger

Reptiles [mp 1974, mp 1988, Basappanavar 1985, Malhotra & Sahi 1982]

- Cobra, Common
- Cobra, King
- Crocodile, Marsh
- Gecko, Brook's
- Gecko, Southern House
- Keelback, Green
- Krait, Common
- Lizard, Common Garden
- Lizard, Fan-throated
- Lizard, Flying
- Monitor, Common Indian
- Python, Indian
- Racer, Banded
- Snake, Common Bronzeback Tree
- Snake, Common Vine
- Snake, Common Cat
- Snake, Olive Keelback
- Snake, Rat
- Snake, Russell's Kukri
- Snake, Travancore Wolf
- Tortoise, Starred
- Viper, Russell's
- Viper, Saw-scaled



Amphibians [Malhotra & Sahi 1982]

Frog, Bull
Frog, Common Tree
Frog, Green
Frog, Indian Water Skipper
Frog, Ornate Narrowmouthed
Frog, Cricket
Toad, Common

Birds (see Appendix B)

There is reported to be an over-population of Wild boar and Wild dog in the park, possibly due to the lack of predators. Information on other fauna is not available. 75 salt licks have been provided for animals.

OCCURRENCE AND CONTROL OF DISEASE: Rinderpest killed over 500 Gaur in 1968–69; no subsequent outbreak has been reported. There are reports of Foot and Mouth Disease striking livestock in adjoining villages [Basappanavar 1985], though there are no definite records of this, or evidence that wild animals have been thus afflicted. A vaccination programme has been undertaken for cattle in adjoining villages, and approximately 70 percent of the cattle have been inoculated. Cattle passing through the park are always checked for vaccination. There is a veterinarian attached to the park at Bandipur [qa '91].

OTHER FACTORS AFFECTING HABITAT: Forest fires occur between February and April affecting almost 10% of the area. Usually, two large conflagrations occur annually, the first and more severe one at the beginning of summer (March), and the second in April–May. All fires are believed to be caused by humans. There were 103 fires between 1979–80 and 1983–84, affecting a total area of 38,200 ha., of which 18,200 ha was in the core zone. The total length of firelines is 1045 km. Since 1986 the occurrence of fire has been considerably reduced, reportedly due to effective fire protection measures [mp 1988].

Hailstorms may occur in May or June, though they are rare.

The park was afflicted by drought during 1982–83, affecting 50% of the Buffer Zone. No loss of fauna was noticed.

WATER RESOURCES: The Moyar, Mavinahalla, Nugu, and other rivers run along much of the southern boundary of the park, and the Kannegal Hole along the western border. Nugu river then flows northwards through the park, before eventually entering the Nugu reservoir, which adjoins the park to the north [tp]*. In addition, there are 12 major seasonal tributaries of these rivers. The Kabini reservoir is located along the north-western boundary [tp]. There are also 120 waterholes, of which 20 are artificial and seasonal, and 50 perennial [q1, Basappanavar 1985]. Fourteen check dams have been constructed across seasonal streams, and six borewells have been excavated, to augment water supply in the pinch period [q1, Basappanavar 1985, qa '91].

BUDGET: Allocation for 1988–89, Rs. 82.03 lakhs, and for 1991–92 Rs. 1.21 crores.

MANAGEMENT PLAN: A Management Plan, dated March, 1988 and valid for 1988–89—1992–93 has been prepared by the Field Director, Project Tiger. Previous to this, the Management Plan of 1973–74—1978–79 was being followed.

PERSONNEL: The staff position in the park is as follows: Field Director, (CF) —one, Deputy Director—one, ACF—two, Range Forest Officers—nine, Superintendent—one, First Division Assistant—three, Second Division Assistants—nine, Stenographer—one, Typist—one, Foresters—twenty, Forest Guards—90, Peons —four, Chowkidars—two, Overseer—one, Drivers—eight, Mahout—nine, Kavadi (mahout assistant)—nine, Artist-Photographer—one, Wireless Operator—one [Staff]. There are also six anti-poaching and two anti-smuggling squads, each having an average of nine men.

* This source is a 1:250,000 toposheet, *not* used for the map (which is done on basis of a 1:50,000 toposheet).

EQUIPMENT: 48 wireless sets (12 fixed and 36 portable), 70 guns, 26 rifles, ten pairs of binoculars, one infra-red viewer, and two dart guns. Motor vehicles include nine jeeps, one van, five motorcycles, and one water tanker, two mini buses , three cameras, one video camera, one VCR and one video projector. There is also one motorboat.

RESEARCH AND MONITORING: The French Institute at Pondicherry has done studies on the park's biomass [Basappanavar 1985], and the Botanical Survey of India has conducted explorations in 1964–65 [Naithani 1966]. The French Institute is also carrying out research to find out carrying capacity in terms of herbivores.

COMMUNITY INTERACTION PROGRAMMES: Several schemes and programmes have been organised to educate the community—particularly students and teachers—with regard to wildlife preservation. Rural school-children are taken around the park and shown wildlife films twice a week. Environment education camps for school children are conducted by organisations like the World Wide Fund for Nature—India (WWF). Nature education workshops of three to four days duration each have also been held for teachers. Wildlife films are screened everyday to educate the tourists on the importance of preservation of wildlife and their habitat.

HUMAN PRESENCE:

Rights and Leases: Villagers have right to religious yatra and right for worship at religious sites within the park [mp 1988] .

Habitation: There is one tribal settlement inside the park, in the Administrative Zone, with a population of 390. A proposal to shift this out is pending, with the Revenue Department having already allotted land for the purpose. Two other villages inside the park were relocated in 1978–79 [Basappanavar 1985]. Survey of India toposheets (area surveyed 1975–76) show at least two villages in the western area of the park, not mentioned by the wildlife authorities* as well as a few abandoned villages and staff housing colonies [tp]. Toposheets also mention some "sites for towns" in the north-western boundary area, but these are not mentioned in any other document, and may refer to plans now abandoned.

There are 180 villages including hamlets and tribal colonies, adjoining the buffer zone, with a total population of 1,26,000 [qa '91]. Details regarding settlements and population around other zones are not available; most of the area adjacent to the south is uninhabited.

Grazing: Though grazing is illegal in the park, more than one lakh heads of livestock from surrounding areas are reported to graze inside.

Offences: Poaching by villagers from adjoining areas of Karnataka, as also by people from Tamil Nadu and Kerala, is said to occur, as are cases of poisoning of carnivores by villagers [mp 1974]. Between 1979–80 and 1983–84, six cases of illegal hunting, and 411 of habitat destruction were recorded. In 1987–88, 88 offence cases were registered, four of which were of sandalwood poaching, and the others not specified [Annual Plan 1987–88]. Perhaps these related to illegal grazing, which is reported to occur in the park. While the illegal removal of timber is reported to be under control, illegal firewood extraction continues, especially in the areas along the buffer zone boundary [mp 1988].

Tourism: The park received 25,262 visitors in the calendar year 1990 and 26,161 in 1991–92, as against 8589 in 1983–84.

Use by Other Government Agencies: The PWD uses the park for roads (over 820 ha), and quarrying for stones used in road-making [mp 1974]. The Karnataka Electricity Board has transmission lines over a length of 65 km within the park.

Miscellaneous: Six persons were killed and 14 injured by wild animals between 1977 and 1992 [qa '91].

* The wildlife authorities maintain that no settlements except the one tribal colony are present in the park.

Compensation was paid in all cases [qa '91]. 1939 cases of livestock lifting by tiger and leopard were reported between 1974–75 and 1991–92 all of which were accepted for compensation and were paid a total of Rs.8,34,760. Crop damage is also done by wildlife and due compensation reportedly paid.

INFORMATION FOR VISITORS: Entry to the park is permitted from 6 am to 9 am and from 4 pm to 6.30 pm [Basappanavar 1985]. There are three checkposts under Forest Vigilance control, two in the park and one outside [qa '91]. Permits are required for entry into the Tourism Zone. The park is best visited between June and October when it is lush and green, and there is plenty of food for the animals. There are a number of temples in the park that can be visited, including at Gopalasvamy Betta, Maleswara Gudi, Anurmari Gudi [tp], Mari Gudi and Basaveswara Gudi.

Periodically, trekking expeditions and survival camps are conducted by outside agencies. Short treks are also conducted for day visitors. Professional tourist-guide workshops in wildlife tourism are conducted for in-service staff, travel agents, and hoteliers interested in wildlife tourism [Basappanavar 1985]. There are several resthouses inside and adjacent to the park. There is a visitors' centre with a library, charts on nature conservation and wildlife, and skeletons/bones of animals and birds on display. The Forest Guards act as guides. An area of 2371 ha outside the park near Begur, along the shores of the Kabini reservoir, is proposed to be brought under the Tourism Zone, and cottages for accommodation are to be constructed here.

NGOs/INDIVIDUALS ASSOCIATED: There are 10 wildlife experts associated : Lata Kittur, M.S. Thimmaiah, N.R. Adur, K. Ullas Karanth, M.S. Deshpande, Louella Lobo Prabhu, P.D. Sudarshan, B. Jagannath Shetty, P.M. Aiyanna, and M.R. Desai (see Appendix 8 for addresses). Volunteers sponsored by service organisations or nature clubs help in conducting census operations. The World Wide Fund for Nature -India conducts nature camps.

CONTACT ADDRESSES:

1) Field Director, Project Tiger
Aranya Bhavan
Ashokapuram, Wood Yard
Mysore – 570008
Karnataka

2) Local in-charge:
Deputy Director DCF (WL)
Bandipur National Park
Gundlupet
Mysore Dist. – 571111
Karnataka

APPENDIX A

Trees [mp 1974, q1, Basappanavar 1985]

Acacia catechu
Acacia ferruginea
Acacia latronum
Acacia leucophloea
Acacia nilotica
Acacia polycantha
Acrocarpus fraxinifolius
Actinodaphne angustifolia
Actinodaphne spp.
Aegle marmelos
Ailanthus excelsa
Alangium salvifolium
Albizia amara
Albizia lebbeck
Albizia odoratissima
Albizia procera
Albizia spp.
Anacardium occidentale
Annona squamosa
Anogeissus latifolia
Aphanamixis polystachya
Artocarpus heterophyllus
Atalantia racemosa
Azadirachta indica
Bauhinia malabarica
Bischofia javanica

Bombax ceiba
Boswellia serrata
Bridelia crenulata
Buchanania axillaris
Buchanania lanzan
Butea monosperma
Caesalpinia mimosoides
Calophyllum spp.
Canarium strictum
Canthium dicoccum
Capparis divaricata
Careya arborea
Carissa spp.
Caryota urens
Casearia elliptica
Cassia fistula
Cassia siamea
Casuarina equisetifolia
Chloroxylon swietenia
Chukrasia velutina
Cinnamomum spp.
Cochlospermum religiosum
Commiphora caudata
Cycas spp.
Dalbergia lanceolaria
Dalbergia latifolia
Dalbergia paniculata
Dalbergia sissoo
Dillenia spp.
Diospyros melanoxylon
Diospyros montana
Drypetes spp.
Elaeocarpus serratus
Elaeocarpus tuberculatus
Elaeodendron glaucum
Emblica officinalis
Ervatamia heyneana
Eucalyptus spp
Ficus benghalensis
Ficus drupacea
Ficus exasperata
Ficus racemosa
Ficus tsjahela
Ficus virens
Flacourtia indica
Garcinia spp.
Gardenia spp.
Gardenia gummifera
Gardenia latifolia
Gardenia turgida
Garuga pinnata
Givotia rottleriformis
Gmelina arborea
Gmelina asiatica
Gordonia spp.
Grevillea robusta
Grewia tiliifolia
Hymenodictyon excelsum
Haldina cordifolia
Hardwickia binata
Holigarna spp.
Holoptelea integrifolia
Hopea parviflora
Hopea wightiana
Humboldtia brunonis
Humboldtia spp.
Hydnocarpus laurifolia
Juniperus spp.
Kingiodendron pinnatum
Kydia calycina
Lagerstroemia spp.
Lannea coromandelica
Lophopetalum wightianum
Maclura cochinchinensis
Madhuca longifolia
Mallotus philippensis
Mangifera indica
Manilkara spp.
Melia dubia
Memecylon spp.
Meyna laxiflora
Michelia champaka
Miliusa tomentosa
Mimusops elengi
Mitragyna parvifolia
Morinda tomentosa
Naringi crenulata
Olea dioica
Pavetta indica
Persea macrantha
Pithecellobium dulce
Plumeria rubra
Poeciloneuron indicum
Psidium guajava
Pterocarpus indicus
Pterocarpus marsupium
Pterospermum spp.
Punica granatum
Radermachera xylocarpa
Salix tetrasperma

Samanea saman
Santalum album
Sapindus emarginatus
Schefflera spp.
Schleichera oleosa
Schrebera swietenioides
Semecarpus anacardium
Shorea roxburghii
Shorea spp.
Soymida febrifuga
Spondias pinnata
Sterculia villosa
Stereospermum personatum
Stereospermum suaveolens
Streblus asper
Strychnos nux-vomica
Strychnos potatorum
Symplocos spp.
Syzygium cumini
Tamarindus indica
Tectona grandis
Terminalia alat
Terminalia arjuna
Terminalia bellirica
Terminalia catappa
Terminalia chebula
Thespesia populnea
Toona ciliata
Trema orientalis
Vitex altissima
Vitex negundo
Wendlandia thyrsoidea
Wrightia tinctoria
Xeromphis spinosa
Xeromphis uliginosa
Ziziphus mauritiana
Ziziphus xylopyrus

Other Plants [mp 1974, q1, Basappanavar 1985]

Abrus precatorius
Abutilon indicum
Acacia caesia
Acacia sinuata
Agave americana
Agave sisalana
Argyreia cuneata
Argyreia thomsonii
Aristolochia indica
Artemisia spp.
Asparagus racemosus
Azima tetracantha
Bambusa arundinacea
Caesalpinia bonduc
Calotropis gigantea
Canthium parviflorum
Capparis zeylanica
Cassia auriculata
Cassia tora
Celastrus paniculatus
Celastrus spp.
Chromolaena odorata
Cipadessa baccifera
Cissus spp.
Clematis gouriana
Cordia dichotoma
Cordia macleodii
Croton spp.
Cryptolepis buchanani
Curcuma long
Curcuma spp.
Cymbopogon citratus
Dendrocalamus strictus
Dodonaea viscosa
Entada phaseoloides
Erythroxylum monogynum
Euphorbia tirucalli
Flemingia spp.
Grewia damine
Helicteres isora
Hemidesmus indicus
Holarrhena antidysenterica
Ichnocarpus frutescens
Imperata cylindrica
Indigofera atropurpurea
Ixora arborea
Jasminum arborescens
Jatropha curcas
Lantana camara
Leucas aspera
Loranthus spp.
Maytenus emarginata
Ochna obtusata
Ocimum sanctum
Opuntia dillenii
Phoenix acaulis
Phoenix humilis
Premna tomentosa

Prosopis juliflora
Prosopis spp.
Salvadora spp.
Scutia circumscissa
Securinega leucopyrus
Smilax spp.
Solanum stramoniifolium
Solanum violaceum
patholobus parviflorus
Ventilago madraspatana
Vernonia spp.
Wattakaka volubilis
Zingiber officinale
Ziziphus glabrata
Ziziphus oenoplia
Ziziphus rugosa

APPENDIX B

Birds [mp 1988, Basappanavar 1985, q1]

Babbler, Common
Babbler, Jungle
Babbler, Large Grey
Babbler, Rufousbellied
Babbler, Slatyheaded Scimitar
Babbler, Yelloweyed
Barbet, Crimsonbreasted
Barbet, Green
Baya
Bee-eater, Bluetailed
Bee-eater, Chesnutheaded
Bee-eater, Green
Blackbird
Bulbul, Redvented
Bulbul, Redwhiskered
Bulbul, Whitebrowed
Bunting, Blackheaded
Bunting, Redheaded
Bustard-quail, Common
Buzzard-eagle, White-eyed
Chat, Pied Bush
Chloropsis, Goldfronted
Chloropsis, Goldmantled
Coot
Crow, House
Crow, Jungle
Crow-pheasant
Cuckoo, Indian
Cuckoo, Pied Crested
Cuckoo-Shrike, Blackheaded
Cuckoo-Shrike, Large
Darter
Dove, Emerald
Dove, Indian Ring
Dove, Red Turtle
Dove, Spotted
Drongo, Black
Drongo, Greater Racket-tailed
Drongo, Whitebellied
Eagle, Crested Serpent
Eagle, Pallas's Fishing
Eagle, Short-toed
Eagle, Tawny
Egret, Cattle
Egret, Large
Egret, Little
Egret, Smaller
Falcon, Lagger
Flowerpecker, Thickbilled
Flowerpecker, Tickell's
Flycatcher, Nilgiri
Flycatcher, Paradise
Flycatcher, Tickell's Blue
Flycatcher, Whitebrowed Faintail
Hawk-cuckoo, Common
Heron, Night
Heron, Pond
Hoopoe
Hornbill, Common Grey
Hornbill, Malabar Pied
Ibis, Black
Ibis, White
Iora, Common
Jacana, Bronzewinged
Jacana, Pheasant-tailed
Junglefowl, Grey
Kingfisher, Blue-eared
Kingfisher, Lesser Pied
Kingfisher, Whitebreasted
Kite, Brahminy
Kite, Pariah
Koel

Lapwing, Redwattled
Lapwing, Yellow-wattled
Lark, Crested
Lorikeet, Indian
Magpie-Robin
Martin, Crag
Martin, Dusky Crag
Minivet, Scarlet
Minivet, Small
Moorhen
Moorhen, Purple
Munia, Spotted
Munia, Whitebacked
Munia, Whitethroated
Myna, Brahminy
Myna, Common
Myna, Greyheaded
Myna, Hill
Nightjar, Common Indian
Nuthatch, Chestnutbellied
Nuthatch, Velvetfronted
Oriole, Blackheaded
Oriole, Golden
Osprey
Owl, Barn
Owl, Brown Fish
Owl, Great Horned
Parakeet, Alexandrine
Parakeet, Blossomheaded
Peafowl, Common
Pigeon, Blue Rock
Pigeon, Green
Pipit, Indian Tree
Pitta, Indian
Plover, Little Ringed
Pochard, White-eyed
Quail, Common
Quail, Jungle Bush
Redstart
Robin, Indian
Rosefinch, Common
Shama
Shikra
Shrike, Baybacked
Shrike, Common Wood
Shrike, Grey
Shrike, Rufousbacked
Skylark
Snipe, Fantail
Sparrow, House
Sparrow, Yellowthroated
Spoonbill
Spurfowl, Red
Stilt, Blackwinged
Stint, Little
Stork, Blacknecked
Stork, Openbill
Stork, Painted
Stork, Whitenecked
Sunbird, Purple
Sunbird, Purplerumped
Sunbird, Yellowbacked
Swallow, House
Swallow, Indian Cliff
Swallow, Redrumped
Swallow, Wiretailed
Swallow-shrike, Ashy
Swift, House
Tailorbird
Teal, Common
Teal, Cotton
Teal, Lesser Whistling
Tern, Indian River
Thrush, Blue Rock
Thrush, Malabar Whistling
Tit, Grey
Tit, Yellowcheeked
Tree Pie, Indian
Trogon, Malabar
Vulture, Indian Black
Vulture, Indian Whitebacked
Wagtail, Grey
Wagtail, Large Pied
Wagtail, White
Wagtail, Yellow
Wagtail, Yellowheaded
Warbler, Streaked Fantail
Waterhen, Whitebreasted
Weaver Bird, Streaked
White-eye
Woodpecker, Lesser Goldenbacked
Woodpecker, Pigmy
Woodpecker, Rufous
Woodpecker, Yellowfronted Pied

BANDIPUR NATIONAL PARK (Map I - Physical)

N

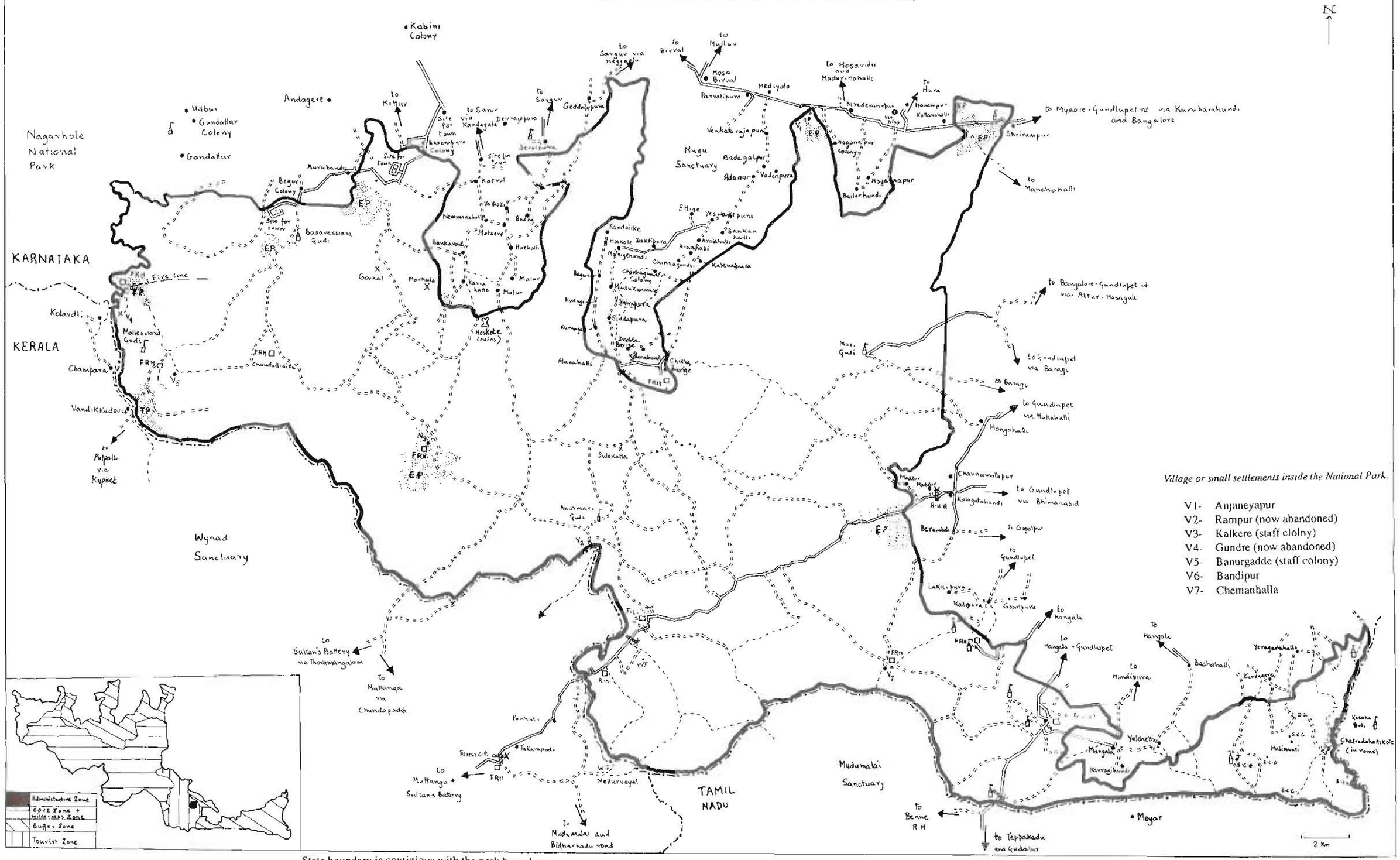
Forest Cover

- Above 40% crown density
- 10% to 40% crown density
- scrub
- Forest Blanks/Grassland/cultn.

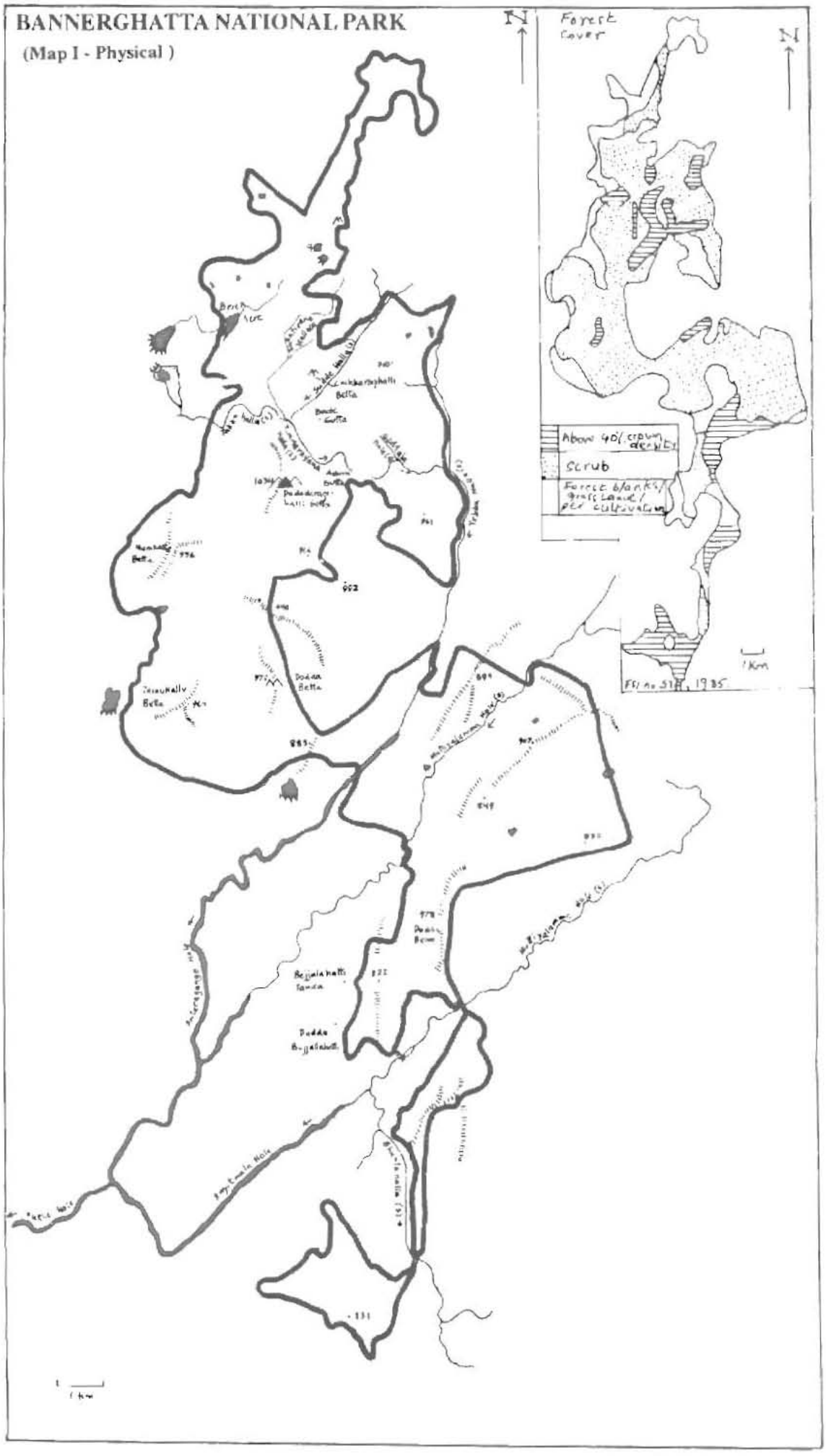
Forest Survey of India 1987-89

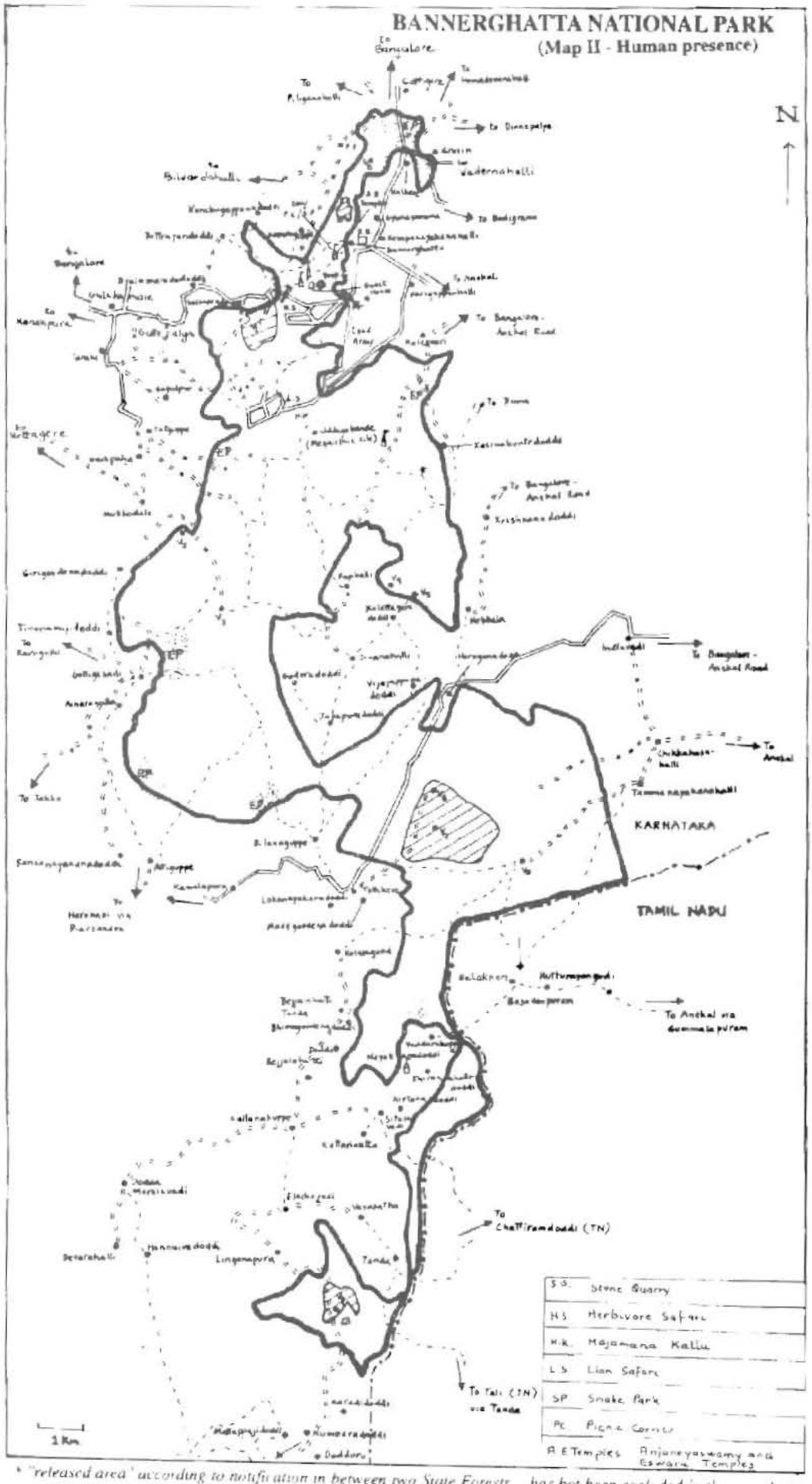
2 Km

BANDIPUR NATIONAL PARK (MAP II- Human Pressures)



State boundary is contigious with the park boundary.


BANNERGHATTA NATIONAL PARK
(Map I - Physical)
N
Forest cover
N
Above 40% crown density
Scrub
Forest blanks/ grass Lands/ per cultivation
1 Km
FSI No 51 1985
Dodda Betta
Bejjalahalli Tanda
Dudda Bejjalahalli
1 Km



* "released area" according to notification in between two State Forests has bot been excluded in this map because we did not have the information about the exact size and location of the said area.

State boundary is contiguous with the park boundary.

Habitation inside the sanctuary

V1 Hakkibikki colony
V2 Muninagara
V3 Gullottidoddi
V4 Tippanabondodi
V5 Ramanavakanadoddi
V6 Kaname
V7 Shivapura
V8 Chudahalli
V9 Ukkadi

BANNERGHATTA NATIONAL PARK

Just 25 km from Bangalore, Bannerghatta has become a popular tourist spot, with such features as a picnic corner, a lion safari, a herbivore safari, and a snake park. It has for long been an important pilgrimage centre and there are a number of temples in the area. The forests are rather degraded, though now regenerating under protection. The vegetation varies from dry, thorny scrub to dry deciduous forests, with pockets of moist deciduous forests along the stream courses. Though the park contains a fairly large area of wilderness, visitors are generally restricted to the picnic corner and safari.

LEGAL STATUS: Intention declared to constitute the area a national park vide notification No AFD 61 FWL 74 dated 6 September,1974 [notif]. One hundred and fifty six acres are in the process of being acquired.

AREA AND ZONING: 10,427 ha (104.27 sq.km) [notif]. No zoning.

LOCATION: *District* Bangalore; *Latitudinal range* 12°34'00" to 12°50'32" N [tp]; *Longitudinal range* 77°31'23" to 77°38'19" E [tp]; *Nearest town* Anekal (17 km); *Nearest railhead* Bangalore (25 km); *Nearest airport* Bangalore (28 km).

APPROACHES: 25 km south of Bangalore on the Bangalore-Anekal road [dir].

TOPOGRAPHY AND CLIMATE: *Altitude* 740 m [q1] to 1034 m, the highest point being Doddaragihalli Betta in the north [tp]; *Temperature* 20°C to 35°C; *Mean annual rainfall* 700 mm.

FLORA: Landsat imagery shows the park as comprising of scrubland and open forest (crown density between 10% and 40%), with a preponderance of the former [Landsat 1986]. The surrounding areas are devoid of forest cover. In the park, the forest types found include Southern Tropical Dry Deciduous Forests 5A (8,427 ha), Southern Thorn Forest 6A/C1 (1,500 ha), and South Indian Moist Deciduous Forests 3B (500 ha).

Eucalyptus hybrid, *Terminalia* spp., *Syzygium* spp., Indian gooseberry *Emblica officinalis* and other fruiting trees have been planted over 39.5 ha, for improving wildlife habitat. Buffer plantations have been done, covering about 20 ha along the eastern border, in 1986–87 [fv] and in patches inside the park area to improve the habitat. This exercise is done every year.

Species introduced in the park include *Eucalyptus* hybrid, *Bauhinia purpurea*, Elder *Samanea saman* and Copper pod *Peltophorum pterocarpum*.

Trees [q1, Mascarenhas undated, qa '89, fv]

Acacia catechu
Acacia spp.
Albizia amara
Albizia lebbeck
Albizia spp.
Anogeissus latifolia
Anogeissus spp.
Artocarpus spp.
Azadirachta indica
Bauhinia purpurea
Bauhinia racemosa
Bombax spp.
Butea monosperma
Chloroxylon swietenia
Dalbergia latifolia
Diospyros spp.
Emblica officinalis
Eucalyptus hybrid
Ficus spp.
Gmelina arborea
Holigarna spp.
Lagerstroemia microcarpa
Lagerstroemia parviflora
Lagerstroemia speciosa
Lagerstroemia spp.
Madhuca longifolia
Mangifera indica
Peltophorum pterocarpum

Pterocarpus marsupium
Pterocarpus spp.
Samanea saman
Santalum album
Sapindus spp.
Shorea roxburghii
Syzygium cumini
Syzygium spp.
Tamarindus indica
Tamarindus indica
Tectona grandis
Terminalia alata
Terminalia bellirica
Terminalia spp.

Other Plants [q1, Mascarenhas undated, qa '89, fv]
Prosopis spp.

FAUNA: (Excluding animals kept in captivity)

Mammals [q1, Bro-Bann1, Bro-Bann2, Mascarenhas undated]
Antelope, Indian
Bear, Sloth
Boar, Indian Wild
Deer, Barking
Deer, Spotted
Elephant, Indian
Gaur
Hare, Indian
Jackal
Langur, Common
Sambar
Squirrel, Three-striped Palm

Reptiles [q1, Annual Report 1986–87, Bro-Bann1, Bro-Bann2, Mascarenhas undated]
Boa, Common Sand
Cobra, Common
Crocodile, Marsh
Gharial
Monitor, Common Indian
Python, Indian
Snake, Common Green Vine
Viper, Bamboo Pit
Viper, Russell's

Birds [q1, Bro-Bann1, Bro-Bann2, Mascarenhas undated, fv, Annual Report 1986–87]
Babbler, Jungle
Barbet, Green
Bee-eater, Green
Bulbul, Redvented
Bulbul, Redwhiskered
Bulbul, Yellowthroated
Chat, Pied Bush
Crow, Jungle
Crow-Pheasant
Cuckoo-Shrike, Blackheaded
Darter
Dove, Little Brown
Dove, Spotted
Drongo, Black
Drongo, Whitebellied
Flowerpecker, Tickell's
Flycatcher, Paradise
Flycatcher, Redbreasted
Flycatcher, Tickell's Blue
Flycatcher, Whitebrowed Faintail
Iora, Common
Junglefowl, Grey
Kingfisher, Whitebreasted
Kite, Brahminy
Kite, Pariah
Lark, Redwinged Bush
Magpie-Robin
Martin, Dusky Crag
Minivet, Small
Myna, Common
Myna, Jungle
Oriole, Golden
Partridge, Grey
Peafowl, Common
Robin, Indian
Shrike, Brown
Shrike, Rufousbacked
Sunbird, Purple
Sunbird, Purplerumped
Tailorbird
Tree Pie, Indian
Wagtail, Grey
Wagtail, White
White-eye


TICKELL'S FLOWERPECKER
Dicaeum erythrorhynchos

Elephant and Peafowl are reported to be locally threatened, and Indian antelope (Blackbuck) and Leopard may no longer be found [fv]. Marsh crocodiles and Gharials have been introduced into several of the artificial tanks, and have multiplied from an original population of about 15 to over 200 [Rangashamaiah, Pers. comm. 1990]. Four Gharials have been introduced into a pond in the zoo. A number of species are kept in captivity including the Indian lion, Leopard, Gaur, Lion-tailed macaque, Golden langur, and other primates, and several species of reptiles and birds. These are housed either in the zoo and snake park, or in safari enclosures [fv]. Information on amphibians, insects, and other fauna is not available.

OCCURRENCE AND CONTROL OF DISEASE: No incidence of disease amongst fauna or flora has been reported. The Veterinary Department has vaccinated about 50 percent of the livestock from adjacent villages. Cattle passing through the park are occasionally checked for vaccination. There is a veterinarian attached to the park.

OTHER FACTORS AFFECTING HABITAT: Forest fires occur, particularly between February and May and adequate fire counter measures are taken. However, the areas affected are usually small, e.g. 12–15 ha in 1987 [fv, q1]. Water scarcity is a common phenomenon [fv].

WATER RESOURCES: Bannerghatta relies heavily on artificial water resources. There are 35 artificial tanks (20 perennial) and two perennial artificial waterholes. Further, in 1986 –87, 50 new check dams (25 to 30 large) were constructed [fv]. In addition there are some natural lakes (perennial) and three seasonal streams. Five reservoirs (locally called *Kere*) have been made in the northern part of the park.

BUDGET: Rs. 156.59 lakhs in 1990–91 and 128.20 lakhs in 1991–92.

MANAGEMENT PLAN: A management plan for the period 1990 to 1995 has been drawn up by the ACF (WL) Bannerghatta, and submitted for approval.

PERSONNEL: The park is staffed with one Assistant Conservator of Forests, five Range Forest Officers, four Foresters, one Veterinary Assistant Surgeon, one First Division Assistant, one Second Division Assistant, ten Guards, four Watchers, four Drivers, two Kavadis (mahout assistants), 27 consolidated salary workers and 25 watchmen and two peons [Annual Report 1986–87]. The park staff also work at the zoo and safari park.

EQUIPMENT: Two fixed wireless sets [fv], eleven walkie–talkies, four guns, one jeep, and seven other vehicles (the break-up of which has not been specified) [Annual Report 1986–87].

RESEARCH AND MONITORING None.

COMMUNITY INTERACTION PROGRAMMES: Nature camps are held for school children from Bangalore and from adjacent villages [q1, fv].

HUMAN PRESENCE

Rights and Leases: None.

Habitation: There are six villages inside the park in enclosures* with a population of 2,200 [qa '91]. There are 236 villages in the surrounding areas with a total population of 47,200 [qa '91].

Grazing: There is illegal grazing by approximately 7,500 cattle from adjacent villages [qa '91].

* The Survey of India toposheet relevant to the area shows nine villages inside the park (see Map II), four of them in enclosures, This discrepancy remains unresolved.

Offenses and Illegal Activities: There were six cases of illegal hunting, 285 of destruction of habitat, and 54 of illegal grazing recorded between 1979–80 and 1983–84 [q1]. Thirty two cases of cutting of firewood were recorded in 1986–87 [Annual Report 1986-87]. Some small encroachments have also occurred [Annual Report 1986–87] of which there are no official records.

Tourism: There were 1,73,599 visitors to the park in 1988–89 and 4,23,434 in 1991–92.

Use by Other Government Agencies: The PWD controls about five km. of roads inside the park [fv]. The Karnataka Tourism Development Corporation occupies 0.6 ha for a restaurant inside the park, adjacent to the picnic corner.

Miscellaneous: Elephants have caused three fatalities, one in 1983, the second the following year and third in 1992–93. They also damaged crops in a total of 360 ha adjacent to the park, during the period 1979–80 to 1983 –84. Compensation was paid but figures are not available as the matter was handled by the Territorial Wing. One visitor was killed by a safari tiger in August 1992. The victim, a small girl, was reportedly pulled out of a safari van by the tiger, and mauled to death. Compensation was paid but details are not available. [Times of India, 26 August 1992].

INFORMATION FOR VISITORS: Tickets are required for entry into the tourism area for safaris [qa '91]. Separate tickets are issued for the lion safari and snake park. Entry is prohibited between 5:30 pm and 8:45 am [qa '91]. The park remains open throughout the year, but is best visited between September and January when animal sighting is relatively easy [q1, fv].

Bannerghatta is an important pilgrimage centre and there are several temples in the northern part of the park worth visiting. The temples of Anjaneyaswamy, Champakadhra Swamy and Lord Eswara are situated on hills on the periphery of the park [Bro-Bann1, Bro-Bann2, fv]. The river Suvarnamukhi, whose water is said to cure several ailments, originates in these hills [Bro-Bann1, Bro-Bann2] to the west of the park [tp].

Megalithic dolmens or ancient grave sites can be found at Udage Bande in the northern part of the park [Bro-Bann1, Bro-Bann2].

There is a Forest Resthouse on the outskirts of the park. In the one Guest House inside the park, no overnight accommodation is provided.

The park has lion, tiger, and herbivore safaris, a snake park, and a picnic corner for children [Bro-Bann1, Bro-Bann2]. There is a visitor's centre as well as an auditorium where wildlife films are screened. Maps are available for reference and a checklist of birds and animals is maintained in a register. A forest museum has also been set up.

NGOs/INDIVIDUALS ASSOCIATED: There are two Honorary Wildlife Wardens, Shri Nariawall and Shri H.R. Krishna Murthy (please see Appendix 8 for addresses).

CONTACT ADDRESSES

1) The Chief Conservator of Forests
   Wildlife Preservation
   Aranya Bhavan
   Malleswaram, 18th Cross
   Bangalore - 560055
   Karnataka

2) Local-in-charge:
   The Assistant Conservator of Forests
   Bannerghatta National Park
   Bangalore -560 083
   Karnataka

KUDREMUKH NATIONAL PARK

This is one of Karnataka's most recently declared parks, and also one of its largest. It presents an interesting study in contrast, with some dense and well-preserved evergreen forests surrounding several settlement enclosures, including the country's largest mining and pelletization complex, run by the Kudremukh Iron Ore Company Ltd. (KIOCL). There are also extensive grasslands in the northern section of the park [tp].

Once a popular hunting spot for coffee estate owners and hunters from Mangalore, Kerala, etc., this high-rainfall area remains well-known and frequently visited for places like Ganga Mula, believed by local people to be the origin of the rivers Bhadra, Tunga and Netravati (though the SOI topsheet depicts only the Bhadra as originating here) [fv]. The topography is hilly, with significant altitudinal variations around a central ridge running from north to south. A forest corridor connects the park to Someshwara Sanctuary in the north-west.

The KIOCL complex is a source of major disturbances in the park, especially due to the blasting ,mining and waste dumping activities [fv]. Future expansion proposals are likely to greatly intensify the disturbance. These include further prospecting for minerals, leasing of more area for dumping of iron ore tailings, and increased personnel working on the complex.

LEGAL STATUS: Intention was declared to constitute the area a national park, vide notification AHFF 42 FWL 87, dated 2 September, 1987 [notif]. The area was earlier a Reserved Forest.

AREA AND ZONING: 60,032.35 ha. (600.32 sq. km.) [notif]. No zoning at present. It is proposed to constitute the evergreen forests running along the central ridge of the park as the Core Zone [fv].

LOCATION: *Districts* Dakshina Kannada (South Kanara) and Chikmagalur [tp]; *Latitudinal range* 13°01'00" to 13°29'17" N [tp]; *Longitudinal range* 75°00'55" to 75°25'00" E [tp]; *Nearest town* Sringeri (10 km to edge of park on dirt roads) [tp]; Bhagvati (58 km on metalled roads) [St. map] [tp]; *Nearest railhead* Mangalore (77 km) [tp]; *Nearest airport* Mangalore (75 km) [tp].

APPROACHES: From Bangalore to Hassan (175 km) on National Highway 48, then to Sakleshpur (35 km), Mudigere (35 km), and on to Bhagavati inside the park (18 km). Alternatively from Mangalore, via Karakal (50 km) and on to Bhagavati (27 km) [St. map].

TOPOGRAPHY AND CLIMATE: *Altitude* 134 m [q1] to 1892 m, the highest point being Gomukti Gudda in the south [tp]; *Temperature* 17° to 34°C [qa, q1]; *Mean annual rainfall* 4064 mm.

FLORA: According to Landsat imagery, the park comprises mainly of closed forests (crown density above 40%), interspersed with numerous small 'blanks' [Landsat 1986]. The forest thins out considerably in the western part of the park, beyond the central ridge. The forest types to be found include : Southern Hilltop Tropical Evergreen 1A/C3, and West Coast Semi-Evergreen 2A/C2. These include the shola vegetation typical of the Western Ghats. The tropical evergreen forests along the central ridge of the park are extremely dense and well-preserved [fv].

Plantation of *Eucalyptus*, *Casuarina*, *Acacia auriculiformis* and *Grevillea robusta*[fv] is being carried out in the area between the sholas, by the Karnataka Cashew Development Corporation, Karnataka Pulpwood Limited, the Kudremukh Iron Ore Company Limited (KIOCL), the Zilla Parishad and the Territorial Wing of the Forest Department. While the area planted by each organisation is not separately known, the total area under plantations is 118 ha. The weeds *Strobilanthes* and Eupatorium *Chromolaena odorata* have spread in considerable areas of the park [mp]. Several plantations have been done in 1988 [fv].

Trees [mp,fv, Pascal 1982]

Acacia auriliformis
Acrocarpus fraxinifolius
Alstonia scholaris
Aporosa lindleyana
Artocarpus gomezianus
Artocarpus heterophyllus
Artocarpus hirsutus
Artocarpus spp.
Calophyllum apetalum
Calophyllum elatum
Canarium strictum
Careya arborea
Caryota urens
Cassia fistula
Casuarina equisetifolia
Cinnamomum verum
Dillenia pentagyna
Dipterocarpus indicus
Elaeocarpus serratus
Elaeocarpus tuberculatus
Ervatamia heyneana
Eucalyptus spp.
Evodia lunu-ankenda
Ficus spp.
Flacourtia montana
Garcinia gummi-gatta
Garcinia morella
Garcinia xanthochymus
Grevillea robusta
Gordonia obtusa
Holigarna arnottiana
Hopea parviflora
Hopea wightiana
Humboldtia brunonis
Hymenodictyon excelsum
Hymenodictyon obovatum
Kingiodendron pinnatum
Knema attenuata
Lagerstroemia spp.
Lannea coromandelica
Lophopetalum wightianum
Macaranga peltata
Mangifera indica
Meliosma pinnata
Mesua ferrea
Michelia champaka
Michelia spp.
Mimusops elengi
Murraya koenigii
Myristica malabarica
Palaquium ellipticum
Persea macrantha
Poeciloneuron indicum
Pterocarpus spp.
Pterospermum spp.
Santalum album
Schefflera spp.
Spondias acuminata
Spondias pinnata
Sterculia guttata
Symplocos cochinchinensis
Syzygium cumini
Toona ciliata
Vateria indica
Wendlandia thyrsoidea
Wrightia tinctoria
Zanthoxylum rhetsa

Other Plants [mp, Pascal 1982]

Bambusa arundinacea
Calamus spp.
Eupatorium spp.
Leea indica
Ochlandra talbotii
Oxytenanthera monostigma
Phoenix humilis
Strobilanthes spp.
Thea sinensis

FAUNA:

Mammals [q], qa, mp]

Bear, Sloth
Boar, Indian Wild
Civet, Brown Palm
Civet, Common Palm
Civet, Small Indian
Deer, Barking
Deer, Spotted
Dog, Indian Wild
Gaur
Hare, Indian

Jackal
Langur, Common
Leopard
Loris, Slender
Macaque, Bonnet
Macaque, Liontailed
Mongoose, Common
Pangolin, Indian
Porcupine, Indian
Sambar
Squirrel, Indian Giant
Tiger

Reptiles [q1 update]
Cobra, King
Python, Indian

Birds [q1, mp]
Babbler, Blackheaded
Bee-eater, Bluebearded
Bulbul, Black
Bulbul, Blackheaded Yellow
Crow, House
Crow, Jungle
Dove, Emerald
Dove, Turtle
Eagle, Greyheaded Fishing
Hornbill, Common Grey
Hornbill, Great Pied
Hornbill, Malabar Grey
Hornbill, Malabar Pied
Junglefowl, Grey
Kite, Brahminy
Oriole, Blacknaped
Osprey
Partridge, Grey
Peafowl, Common
Pigeon, Blue Rock
Pigeon, Green
Pigeon, Green Imperial
Pigeon, Imperial
Quail, Painted Bush
Spurfowl, Red
Thrush, Malabar Whistling
Treepie, Southern
Trogon, Malabar
Woodpecker, Indian Great Black
Woodpecker, Pigmy

Harpactes fasciatus

Information on other fauna is not available.

OCCURRENCE AND CONTROL OF DISEASE: No diseases amongst flora and fauna have been reported [qa '91]. However, cases of rinderpest and anthrax have been reported from settlements inside and from surrounding villages. Also, the Kyasanur Forest Disease has been reported from adjacent areas [mp]. There is a veterinary dispensary at Aladangadi, 5 km away [tp].

OTHER FACTORS AFFECTING HABITAT: About two or three fires occur each summer chiefly during April–May, particularly in the grasslands between the sholas. Forest officer complained that villagers or graziers often set the grasslands on fire. In 1993, 20 acres were burnt along the vicinity of the Kudremukh mining complex [fv]. In 1988 the Koppa Territorial Division of the Forest Department employed 30 fire watchers, and made approximately 100 km of fire lines. It has been reported that villagers set fire to parts of the park in an attempt to kill ticks responsible for spreading the Kyasanur Forest Disease (see OCCURRENCE AND CONTROL OF DISEASE) [mp].

Even though this is a high rainfall area, water is a limiting factor in the higher altitudes between January and May [mp]. Hailstorms occur during the monsoons [mp].

Pollution of the streams around the Kudremukh Iron Ore Company Ltd. premises, and of the adjacent Lakya Dam reservoir has been reported. The water, particularly after the monsoons, turns reddish brown. Wild animals drink this water, but its effects are not known.

More than 400 cubic meters of dead and fallen timber was removed from the leased out area and kept as firewood in Bhagwati R.F. depots [fv].

WATER RESOURCES: The rivers Tunga, Bhadra and Netravati, originate in the park, and are its major perennial sources [mp, tp]. GangaMula (the source of several rivers including Bhadra) is located just 10–12 kms

(by road) from the new area prospected for lease by the company; what effect mining and blasting activities will have in the area, is yet to be ascertained [fv]. There are also numerous seasonal streams [tp].

BUDGET: Budgetary expenditure incurred during 1988–89 was Rs. 1.48 lakhs.

MANAGEMENT PLAN: A plan for the period 1990–1995 has been prepared by the DCF (WL), Shimoga [qa '91], and submitted for approval [fv].

PERSONNEL: One DCF, One ACF, four RFO's, nine Foresters and 26 Forest Guards.

The Wildlife Wing [fv] employs about 500 labourers annually for vigilance, fire-protection, plantation and other miscellaneous work.

EQUIPMENT: One jeep, one mobile wireless, and one 16 mm projector.

RESEARCH AND MONITORING: K. Ulhas Karanth, Honorary Wildlife Warden of Mysore District, has done a study on the Liontailed macaque in the park [fv].

COMMUNITY INTERACTION PROGRAMMES: Wildlife films have been screened in a few villages. Wildlife week activities held in nearby schools include painting, elocution, debates, talks and film-shows.

HUMAN PRESENCE:

Rights and Leases: People living in the enclosures inside the park, and in the villages in adjoining areas, have the right to collect fuelwood, dead and fallen timber, and green leaves for manure [q1], as well as cane and creepers [mp]. They also have grazing rights.

There is an on-going dispute between a private rubber-planter and the Forest Department over the latter's refusal to let him use land in the Kerekatte enclosure, for plantation. He had reportedly been granted permission to do so by the state government prior to the declaration of the park [fv].

Habitation: There are 98 villages or hamlets in enclosures* inside the park [tp], the population of which is not known. The park authorities maintain that there are only 22 habitation sites inside the park with a total population of 3200 [qa '91]. The discrepancy could not be resolved. Malleshvara or Kudremukh township, inside the park, has about 4000 residents. The surrounding areas have 88 villages, with a population of 2,87,258 [qa].

Offences and Illegal Activities: Stray cases of poaching have been reported [mp].

Tourism: No records are kept of the number of visitors to the park. A large number of people visit Ganga Mula, the origin of the rivers Bhadra and possibly Tunga. Most of them also visit the KIOCL township, which is considered a local hill resort [fv].

Use by Other Government Agencies: The PWD controls 65 km of roads within the park. Work is in progress to metal a 12 km sketch of road linking Sringeri to Dakshina Kannada District (South Kanara), which is causing extensive disturbance inside the park [fv].

In addition to a 4605 ha enclosure (consisting of a township, mines and a processing plant), KIOCL has an adjacent smaller enclosure (at Lakya) with an 855 m long and 65 m high earthfill dam and reservoir, meant to hold iron ore tailings [fv]. In 1992 a part of the dam gave way, causing damage downstream. In 1993 the dam height was increased by 37 feet, and is proposed to be raised to 90m by 1994. Another 310 ha. for mining, and storage of rejects, was leased to KIOCL, and an additional 912 ha. has been requested. Since the KIOCL plans

* According to the Wildlife authorities, an enclosure is revenue land belonging to a village or on lease to another agency, whose area, though geographically inside the park, is neither considered legally a part of the park, nor included in the notified area of the park [fv]. However, there is no mention of such enclosures in the park's notification. This discrepancy could not be resolved.

to expand, another valley would be required after year 2000 A.D. to hold the iron ore tailings. The adjoining Singsara Hole valley has been identified as the next site for the tailing dam.

The Karnataka Power Corporation has 28 km of power transmission lines inside the park, carrying power to the KIOCL [fv]. The State Ministry of Communications has a UHF Repeater Station at Kuranjal inside the park (area not known) [fv].

The Territorial Wing of the Forest Department collects fallen trees for timber, and NWFP. Plantations have been done by five different agencies (see under FLORA for details) partly to meet fuel and fodder needs.

Miscellaneous: Crops growing in the enclosures are subject to the depredation of Gaur and Common langur. Compensation for this is payable depending on the type of crop and extent of damage. Fifty such cases were reported from the Koppa forest division in 1988; details of other divisions are not available.

INFORMATION FOR VISITORS: There is one manned district border checkpost inside the park, which is on the Dakshina Kannada (South Kanara) District border. It is manned by the vigilance wing of the Forest Department. Entry is prohibited between 6 pm and 6 am, though the presence of a township and other settlements make it difficult to enforce this [fv].

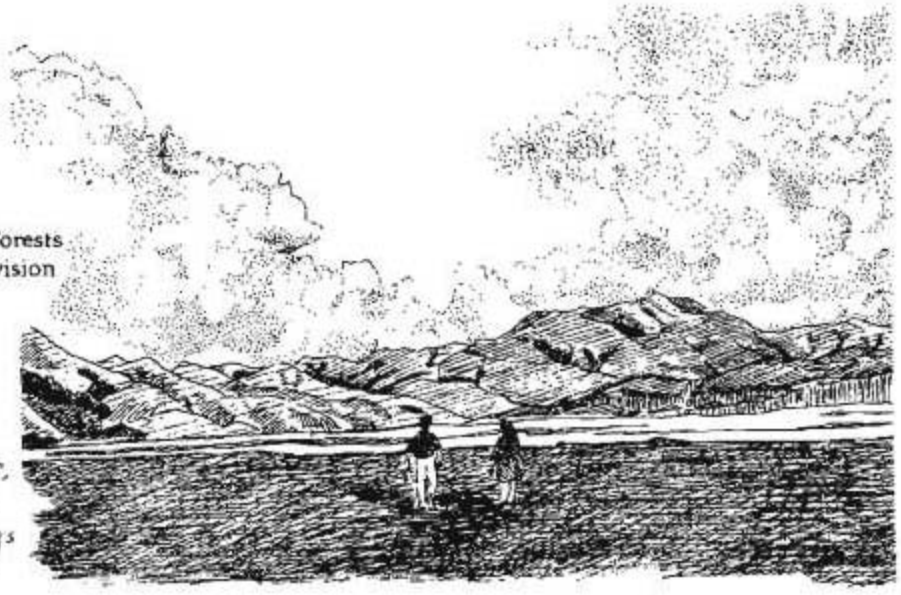
Kudremukh is best visited between December and May which is the dry season. The entire area is open to tourists but apart from areas along the roads and nearby slopes, most others are inaccessible. There is no staff to handle tourists or keep records. There is one Forest Resthouse inside the park [qa '91] in addition to the KIOCL guest house at Mallesvara, also inside. A complex consisting of Wildlife Wing offices, residential quarters, visitors' centre, museum and library is proposed to be set up. There are several pilgrimage sites around the park which are worth visiting [mp].

NGOs/INDIVIDUALS ASSOCIATED: One Honorary Wildlife Warden, Mr. K.R. Sethna, has been appointed for the park area (please see Appendix 8 for address).

CONTACT ADDRESSES:

1) Conservator of Forests
Wildlife, North Circle
Shimoga - 577201
Dist. Shimoga
Karnataka

2) Local in-charge:
Deputy Conservator of Forests
Kudremukh Wildlife Division
Karkala - 574104
Karnataka



Lakya reservoir, used for filling iron-ore tailings from the mine

Gangrikal ridge, in the heart of Kudremukh National Park, close to the source of Bhadra, Tunga, and Netravati rivers KIOCL has applied for a lease for minerals prospecting at this site.

KUDREMUKH NATIONAL PARK (Map I - Physical)

N

Forest Cover

- Above 40% crown density.
- 10% to 40% crown density
- coffee/cardamom Plantations
- Tea gardens
- Tree farm Land groves
- water bodies
- Forest blanks/grass Lands/per cultivation

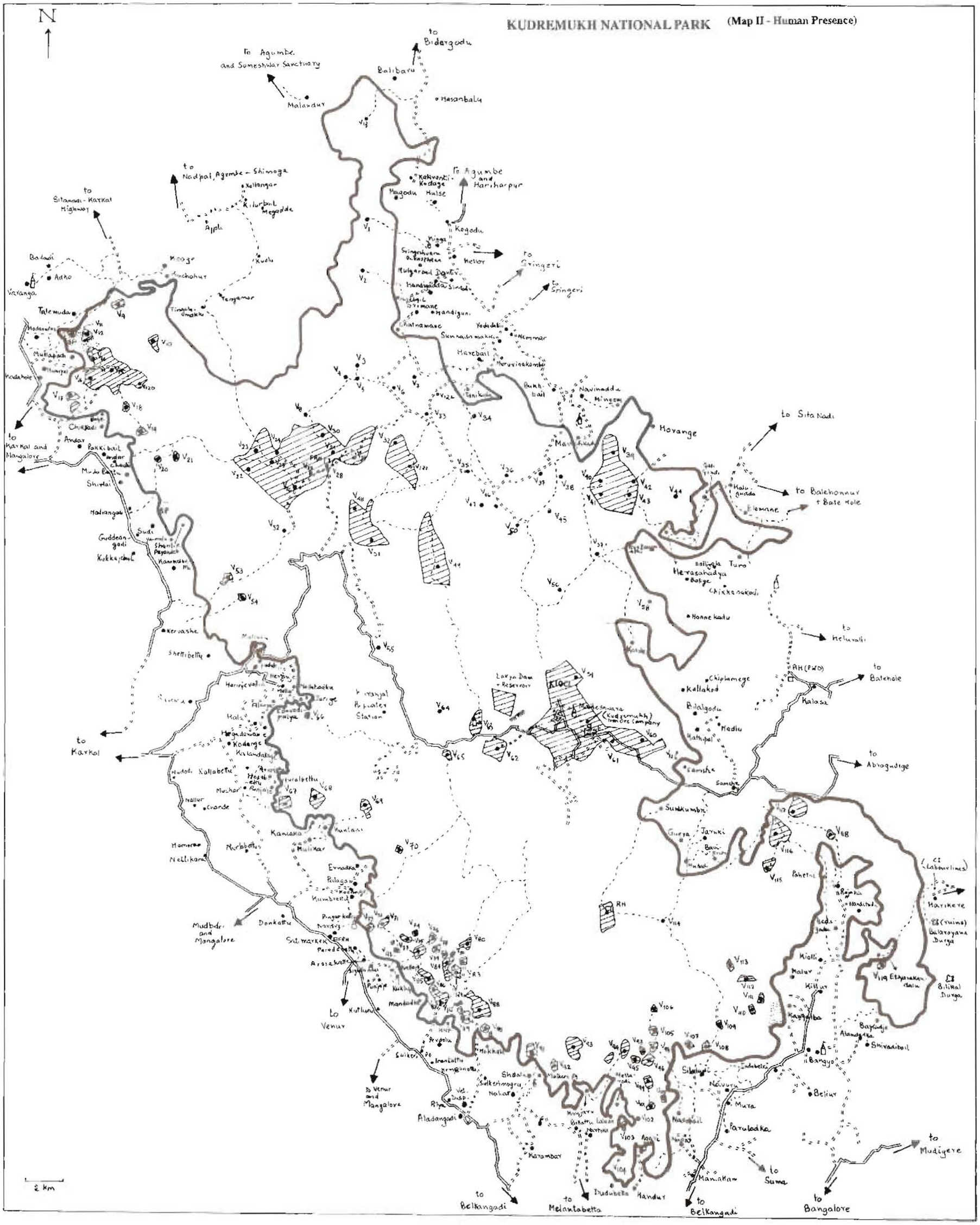
FSI. nos. 480, 1986

2 Km

2 Km

grassland

KUDREMUKH NATIONAL PARK (Map II - Human Presence)



Sites shown as permanent habitation within the park

V1- Pavitra Kallu
V2- Kilemanekodg
V3- Davrat
V4- Oddonkaril
V5- Amata
V6- Bilekadi
V7- Korki
V8- Karuchar
V9- Tannirboil
V10- Sancharamaletota
V11- (No name give in tp)
V12- Honnekappala
V13- Karollikodagi
V14- Hampanadka
V15- Mutlapadi
V16- Babettaya
V17- Bolanje
V18- Morandobail
V19- Kondadi
V20- Kollarabail
V21- Narsebail
V22- Mundasar
V23- Urum
V24- Kottinamane
V25- Gaddemane
V26- Mudaba
V27- Hallimakki
V28- Kerekatte
V29- Menaskudige
V30- Hosatota
V31- Gulgunjimane
V32- Edagaru
V33- Becholi
V34- Emmegundi
V35- Hadi
V36- Kadekallu
V37- Keskodu
V38 Adkes
V39- Avige
V40- Mundodi
V41- Kodugundi
V42- Makkimane
V43- Yadagunda
V44- Vederama
V45- Murdugar
V46- Balagere
V47 Kirur
V48- Hale Siralu
V49- Gurgi
V50- Hudtala
V51- Siralu
V52- Hegganatota
V53- Naddal
V54- Berkala
V55- Ganga (is not habitation)
V56- Sitabam.
V57- Vanagol Gandi
V58- Kallumakki
V59- Karmane
V60- Kottenianta
V61- Jumble
V62- Bilegal
V63- Singsara
V64- Avantige
V65- Bhagavati
V66- Bijal
V67- Pilitaje
V68- Mapla
V69- Kanlale
V70- Gundi
V71- Mapla
V72- Mittala
V73- Kalontape
V74- Mel Pitlu
V75- Kela Pitlu
V76- Kottandka
V77- Bartaje
V78- Handirabettu
V79- Hednadi
V80- Panjala
V81- Onjaradadi
V82- Margaje
V83- Nangaje
V84- Kuriadi
V85- Alamba
V86- Madki
V87- Nellidadka
V88- Malige
V89- Shedelu
V90- Panjaje
V91- Handelu
V92- Malkere
V93- Pela
V94- Arabi
V95- Mittarati
V96- Alya
V97- Bella
V98- Gottaramalla
V99- Mittarata Erumde
V100- Panchor
V101- Manjala
V102- Pilikala
V103- Kuntila
V104- Jamal
V105 Malla
V106- Malejur
V107- Kodonge
V108- Kaorali
V109- Peruman
V110- Kudukoli
V111- Patarke
V112- Suril
V113- Bolk
V114- Tulah
V115- Bangarabalige
V116- Ecaniru
V117- Bodamene
V118- Arasinakokki
V119- Mundol
V120- Mairolli
V121- Horane
V122- Humbalikere
V123- Mudadi (near v77)
V124- Barangajdi (near v83)
V125- Ambila (near v88)
V126- Kadadke (near v60)

RAJIV GANDHI NATIONAL PARK

Earlier known as Nagarahole National Park, this park got its former name from the Nagar Hole ('Snake River' in Kannada), which runs eastwards through its centre. The area has in the past seen extensive forestry activities. Plantations, in fact, cover almost 15% of the park area, with some plots being over a century old. Yet it is rich in animal life, and is known for its large population of Elephants. Covered chiefly by moist and dry deciduous forests, dominated by Teak and Rosewood, the terrain is gently undulating and well-watered by streams. Relatively better off than most of the other sanctuaries and parks in Karnataka in terms of management inputs, this park has also become a popular tourist centre.

To its south-east, the park is connected to Bandipur National Park by the Kabani Reservoir, while the Wynad Sanctuary of Kerala adjoins to the south-west. This entire block forms a part of the Nilgiri Biosphere Reserve. To the west, coffee plantations separate the park from the Brahmagiri Sanctuary.

LEGAL STATUS: Constituted a National Park on April 1, 1983, vide Notification No FFD 195 FWL 82, dated 16 March, 1983 [notif]. Intention to constitute the area a national park was declared on February 4, 1975 vide Notification No. FD 14 FWL 73 [notif]. Prior to this, the area was declared a sanctuary on July 2, 1955 vide Notification No. A4.6118/R. DIS 339/54 [np]. An extent of 57,155 ha. has been declared as National Park vide Notification no. AFD.14.FWL.73 dt.4.2.75. The area was increased to 64,339 ha. vide notification No. AHFF.91.FWL.87 dt.8.12.1983. To mark the first death anniversary of late Shri Rajiv Gandhi, this park was renamed as " Rajiv Gandhi National Park " vide notification No. AHFF.134.FWL/92 dt.13.5.92.

AREA AND ZONING: 64,339.26 ha. (643.39 sq.km). Initial area of the sanctuary till 1975 was 28,416 ha. The area intended to be made, and subsequently made into a national park was 57,155 ha., i.e. an addition of 28,739 ha. Intention to extend the park to include an area of 7184.26 ha, adjacent to the south, was declared on December 8, 1988 vide Notification No. AHFF 91 FWL 87 [notif]. The park has a core zone of 19,200 ha [notif 2], a buffer zone [mp, qa], a tourism zone (in two parts) [qa '91], and a restoration zone (areas not worked out or located on the map as yet) [mp, qa]. The restoration zone is supposed to comprise those areas which have been totally degraded and need complete protection.

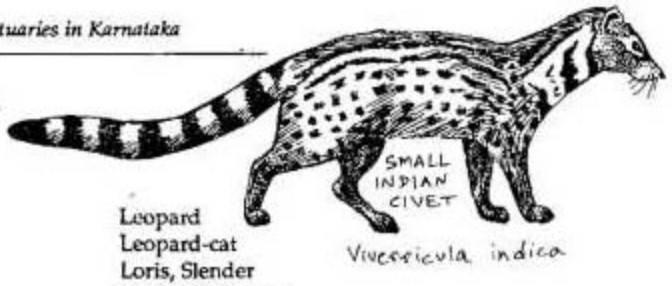
LOCATION: *Districts* Kodagu and Mysore; *Latitudinal range* 11°51'20" [tp] to 12°15'37" N [tp]; *Longitudinal range* 76°00'02" to 76°17'13" E [tp]; *Nearest town* Kutta (7km); *Nearest railhead* Krishnarajanagar (70km) [mp]; *Nearest airport* Mysore (94km).

APPROACHES: From Bangalore first to Mysore (142 km) then on to Hunsur (75 km), and to Nallurpala (7.5 km), on to Murkah (19 km) inside the park, to Kalhalla (10 km), on to Nagarhole (8.5 km) [tp]. From Calicut via Manantavadi to Nagarhole (93.5 km) [Road Map undated, KFD-Nag1].

TOPOGRAPHY AND CLIMATE: *Altitude* 700 m [q1] to 957 m, the highest point being located in the extreme south [tp]; *Temperature* 14°C to 33°C; *Mean annual rainfall* 1778 mm at Nagarhole, decreasing to 1270 mm on the eastern fringes of the park [mp].

FLORA: According to Landsat imagery, the park consists entirely of closed forest with a crown density of 40% and above [Landsat 1986]. To the north-east, adjacent areas are devoid of forest cover. Forest types found in the park include South Indian Tropical Moist Mixed Deciduous 3B/C2, Southern Tropical Dry Deciduous 5A, Southern Tropical West Coast Semi Evergreen 2A/C2, and Scrub Forests (degraded 5A) [q1, mp, KFD-Nag1, fv].

Extensive Teak *Tectona grandis* plantations covering 9000 ha. were carried out by the Forest Department, before the park was notified, between 1868 and 1982. No subsequent plantations have been raised though some silvicultural operations are undertaken in the existing ones. Small patches of *Eucalyptus* had also been planted much before the park had been declared [q1, mp, fv]. The weeds *Lantana* sp. and Eupatorium *Chromolaena odorata* are proliferating in the area [mp].



Trees and Other Plants: see Appendix A

FAUNA:

Mammals [mp, q1, fv, KFD-Nag2]

Antelope, Fourhorned
Bear, Sloth
Boar, Indian Wild
Cat, Jungle
Civet, Common Palm
Civet, Small Indian
Deer, Barking
Deer, Mouse
Deer, Spotted
Dog, Indian Wild
Elephant, Indian
Fox, Flying
Gaur
Hare, Indian
Hyena, Striped
Jackal
Langur, Common
Leopard
Leopard-cat
Loris, Slender
Macaque, Bonnet
Mongoose, Common
Mongoose, Stripednecked
Mongoose, Brown
Otter, Common
Pangolin, Indian
Porcupine, Indian
Sambar
Shrew, Grey Musk
Squirrel, Common Giant Flying
Squirrel, Indian Giant
Squirrel, Threestriped Palm
Tiger

Reptiles [mp, KFD-Nag2, Forest Department undated]

Crocodile, Marsh
Keelback, Green
Krait, Common
Python, Indian
Skink, Snake
Snake, Common Vine
Snake, Common Wolf
Snake, Rat
Viper, Bamboo Pit
Viper, Russell's

Birds: see Appendix B

Two packs of Wild dogs that were normally seen around the park tourist complex are reported to have vanished suddenly in 1984–85, and it is feared that they may have become the victims of some epidemic [fv]. Officials at the park also report that while the number of Elephants is increasing, the number of tuskers may be declining due to heavy poaching outside the park [fv].

OCCURRENCE AND CONTROL OF DISEASE: In 1968 the Gaur population declined due to an outbreak of rinderpest that first affected domestic cattle in the area [mp]. No subsequent epidemic has been reported [fv]. Thirty percent of the cattle in villages adjoining the park have been vaccinated by the Veterinary Department. There is a veterinarian located at Titimati, on the north-western boundary of the park [fv].

OTHER FACTORS AFFECTING HABITAT: Forest fires are widespread and reportedly caused by graziers, NWFP and fuelwood collectors. These occur chiefly between February and April [fv]. Two fire watchtowers connected with wireless exist, along with 675 km of fire lines* [mp].

In March 1992, an area of a few thousand ha. was set on fire by villlagers, causing extensive damage (see HUMAN PRESENCE, *Miscellaneous*).

WATER RESOURCES: The major sources of water for the park are the rivers Lakshmantirtha, Sarati Hole, Nagar Hole, Balle Halla, and Kabani River [tp]. In addition there are 4 major perennial streams [tp], 47 seasonal

* This vast network may include roads doubling as fire lines.

ones [tpl, and several smaller seasonal ones [tp]. There are four small perennial lakes, 41 artificial tanks (24 perennial) and several swamps [mp]. Other major sources are the reservoir of the Taraka dam, entering the eastern part of the park, and the Kabani reservoir, forming the south-eastern boundary of the park [tp].

BUDGET: Budgetary expenditure incurred during 1990–91 was Rs.21.65 lakhs, and in 1991–92 Rs.14.25 lakhs.

MANAGEMENT PLAN: A plan for the period 1990–1995, was prepared in December 1989 by the DCF (WL), Mysore, and has been sent for approval.

PERSONNEL: The Deputy Conservator of Forests (WL), Hunsur is overall in-charge. He is being assisted by One ACF, seven RFOs, 29 foresters, 98 forest guards, 19 forest watchers, 51 mahouts, 52 kavadis, and one elephant jamedar (for elephant camp) [fv].

EQUIPMENT: 20 wireless sets, 14 rifles and 24 guns, 12 binoculars, six jeeps , one car, three vans, and one mini bus (vans and mini bus are for tourists) [mp, qa '93].

RESEARCH AND MONITORING: Two research projects have been conducted by the Centre for Wildlife Studies, Mysore, in collaboration with the Karnataka Forest Department. They are (i) Ecological Relations and Resource-use in the Carnivores-Herbivores Community of Nagarahole National Park and (ii) Ecology and Management of Large Carnivores. Both projects are under the auspices of Indo-US Scientific Cooperation Programme [mp]. The projects were halted in mid-1990, following controversy over the death of a radio-collared tiger, then resumed on court orders, and finally put on hold again after the March 1992 incidents (see below, HUMAN PRESENCE, *Miscellaneous*). As per court orders recollaring was done during 1993.

COMMUNITY INTERACTION PROGRAMMES: Slide and films shows are held (about 30 every year) for villagers residing inside the park. Also, educational films on wildlife are screened for villagers residing in the adjacent areas, with about four to five villages being covered every month.

HUMAN PRESENCE:

Rights and Leases: The felling of diseased and dead Sandalwood trees is permitted in the Buffer, Tourism and Restoration zones. Removal of dead or fallen Rosewood is permitted in the Buffer and Tourism Zones, only under "special circumstances" [mp]. It is not clear who has these rights/concessions and what the "special circumstances" are. Tribals living in the park are permitted agriculture (40–50 ha), and fuelwood and NWFP collection [fv], though this is technically illegal (see *Habitation* below).

Habitation: There are 54* tribal settlements inside the park, with a total population of 6140** [qa '93]. According to the Wildlife (Protection) Act, 1972, such settlements in a fully constituted national park are illegal. However, they have existed there for centuries and the Forest Department does not plan to shift them out. There are also 5 families of non-tribals living in the park, cultivating about 10 ha [mp].

There are 45 villages in the adjoining areas with an estimated population of 55,283. Five 'proposed sites for townships' have been depicted on the toposheet in the south-east portion of the sanctuary. According to park authorities these sites are to be used for rehabilitation [qa '91].

Grazing: Over 5000 heads of livestock graze illegally inside the park [fv].

Offences and Illegal Activities: In 1983–84, one case of improper entry was recorded, 22 of illegal hunting, and 838 of destruction of habitat. Certain areas of the park are extremely susceptible to poaching, and organised ivory poaching expeditions are launched occasionally from neighboring Kerala [mp]. Most of the poaching however,

* The toposheet however shows that there are 40 settlements inside the park.

** Programme to rehabilitate the tribals outside the national park under certain benificiary oriented schemes has been drawn up by the Park authorities, but the tribals are resisting the move [fv].

is of herbivores, for meat, and more rarely of big cats and Gaur [fv]. Some illegal bird trapping by tribals has also been reported [mp]. There are also reports of illicit cattle grazing, and fuelwood and fodder collection, by the people resettled in a 2000 ha area on the eastern boundary [fv]. These people had earlier been evicted from the submergence zone of the Kabani dam [fv].

Tourism: The park received 45,109 visitors during 1988–89 [mp], which has come down to 35,882 in 1991–92.

Use by Other Government Agencies: There are approximately 200 ha of PWD roads in the park. The Education Department runs several schools inside the park, and about 162 ha of the park are occupied by transmission lines of the Karnataka State Electricity Board (KSEB).

Miscellaneous: Between 1979–80 and 1983–84, six people were killed, and one injured by elephants in and around the park. Two hundred and thirty two cases of livestock lifting (in adjacent areas) were accepted for compensation during this period. In addition there were 290 cases of crop damage (in adjacent areas) that were accepted for compensation during this period.

In mid–March 1992, a large group of villagers from adjoining areas forcibly entered the park, destroyed property, beat up some staff members, and set fire to a large tract (reportedly about 7000 ha.) of the forest [*Hindustan Times*, 21 March 1992]. They were protesting the death of a villager, whose body was found inside the park, alleging that a RFO had killed him. Park authorities maintained that the man was a victim of rivalry between two poaching gangs, and that powerful interests were using the opportunity to loot the forests. Some sources have alleged the hand of groups who are demanding that the district of Kodagu (Coorg) be made a separate state or political constituency, but these groups have denied any association with the incident [The *Hindu*, 18 March 1992; *Sunday Observer*, 22–28 March 1992]. An official inquiry is being conducted.

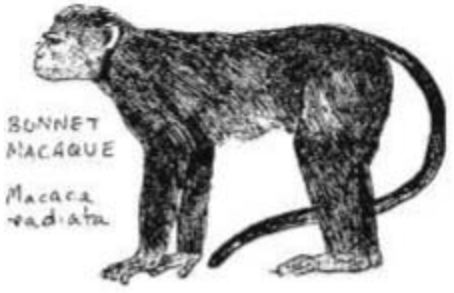
INFORMATION FOR VISITORS: The park is best visited between October and May, when the weather is pleasant and animals easier to spot [KFD-Nag2]. There are also various small tribal shrines in the park which are worth a visit. Vehicles have to pass through checkpoints while entering and there are eight manned entry points to the park. Entry is prohibited between 6.00 pm and 6.00 am. Private vehicles are allowed only in the Tourism Zone [q1, fv, mp]. Overnight accommodation is available in several resthouses, tourist lodges and dormitories in and around the park. There is a reception centre in the Tourism Zone, and a booklet on the park is available. Three vans and a minibus facilitate travel inside the park, and several watchtowers make wildlife viewing easier.

NGOs/INDIVIDUALS ASSOCIATED: There are two Honorary Wildlife Wardens. They are Shri K. Ullas Karanth and Shri P.M. Aiyanna (please see Appendix 8 for addresses).

CONTACT ADDRESSES:

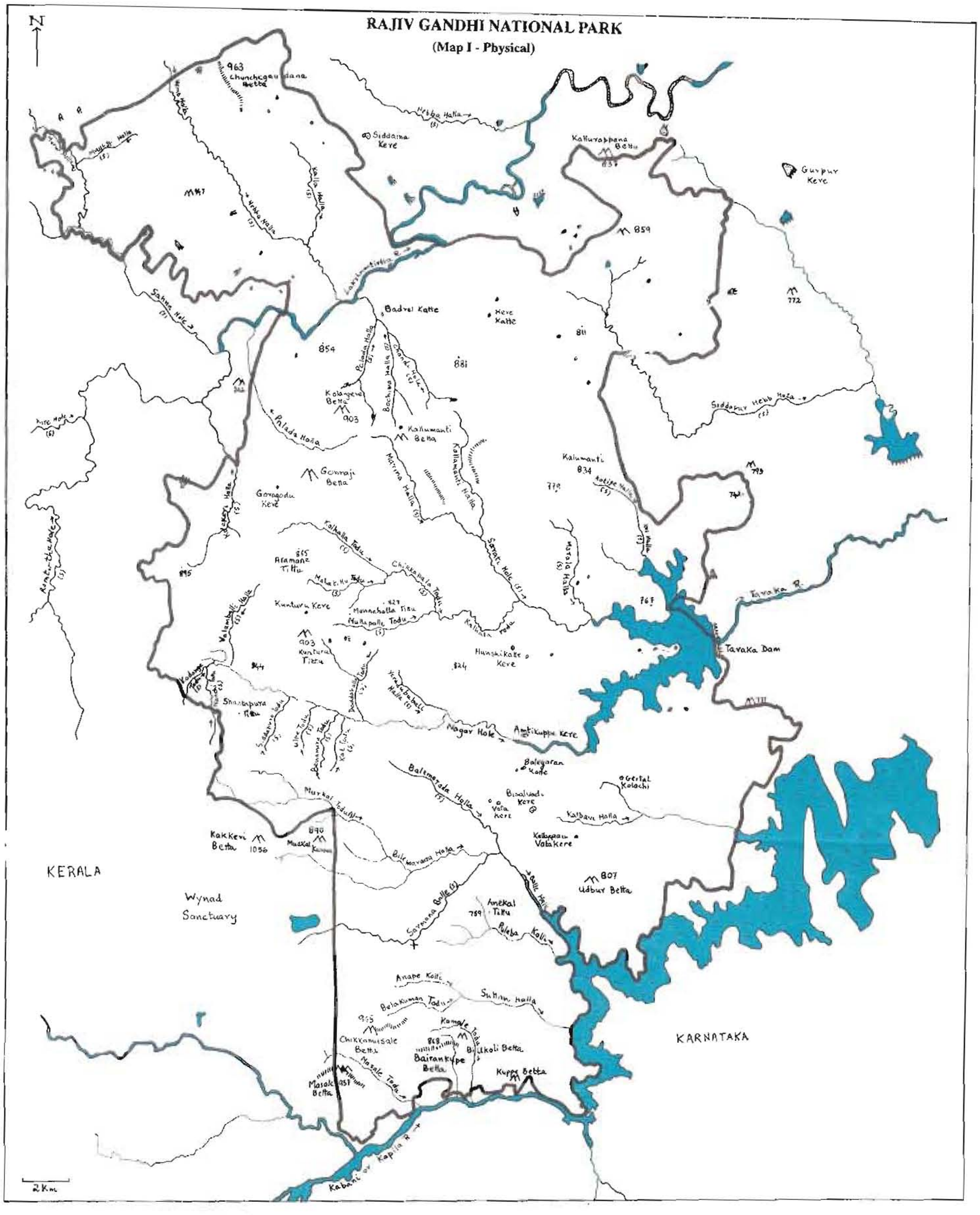
1) DCF (WL) Hunsur
Wildlife Preservation Division
Hunsur P.O. 571105
Mysore Dist.
Karnataka

2) Local in-charge:
Range Forest Officer,
Wildlife Range
via Murkal,
Nagarahole-571258
Kodagu Dist.
Karnataka



RAJIV GANDHI NATIONAL PARK

(Map I - Physical)



RAJIV GANDHI NATIONAL PARK

(Map II - Human Presence)

N

to Piriyapatna

to Hunsur and Bangalore road

to Panchevalli

to Hunsur-Bangalore road

to Hunsur

to Hunsur

FRH

Coffee Pl.

Balumane

Titimati

FRH

Mavun

to Virarajendrapet

Coffee Pl.

Siddapur Coffee Pl.

to Gonikoppal

Kanamakalle

Coffee Pl.

Coffee Pl.

Sulgoda

to Pinnampet

Pannappasanthe

Coffee Pl.

Kainatti

Coffee Pl.

Bulok

Coffee Pl.

Nittur

Coffee Pl.

Karmadu

Coffee Pl.

Oddanmadu

to Pinnampet

Vet Disp.

Coffee Pl.

Coffee Pl.

Coffee Pl.

Coffee Pl.

Coffee Pl.

Lakkunde Coffee Estate

Coffee Pl.

Nalkeri Coffee Pl.

Coffee Pl.

Coffee Pl.

to Srimangala

to Remtimatha

Badaga Chinnakadu

Coffee Pl.

Hanumatha

Coffee Pl.

Hanur

to Srimangala

Coffee Estate

KERALA

Wynad Sanctuary

T.P.

T.P.

T.P.

T.P.

T.P.

T.P.

T.P.

Kartikulam

to Manantavadi

Bavali

Tavambur

Anemala

Vadakinamala

Kadegadde

Gundre

Five Line

W.T.

F.W.T.

F.W.T.

Disp.

FRH

Managodu

Hindgudra Koppalu

Uduvepur

Kala Bochanahalli

Neriakuppe

Kaichanahalli Abbur

Uduvepur Colony

Nerlakuppe Colony

Dasanpur

Negathur

Shindenahalli

Koppala

Billenosahalli

Kolavige

Doda Hejjur

Bavadvadi

Konanhosahalli

Viranahosahalli

Buthalapenjahalli

Nallurpale

Minakshipura

Hosuru

EP

Tibetan Colony

Gurpur

Kurubar Colony

Bhimanahalli

Rajegandahundi

Yetehundi

Annura

Hosahalli

Nanjappaya-kanahalli

Yadathorai

Gandimehanaikanahalli

Gandimachanaikanahalli

Sollepur

Siddapur

Yadenahandi

Budanur

Bachikatte

Metikuppe

FRH

Shantipura

Chakgaudanahalli

Sonahalli

I.B. (PWD)

to Thamma-nam

Yet disp.

Heggadadevankote

to Begur via Vavalahalli & Sayyed

to Mysore via Kollegal

Proposed township

Naganahalli

Mollur

Manchanakanhalli.

Kalnahalli (proposed township)

Ankanathpura

Sivanahalli

to Kabani Dam via Sivanahalli

Salgehundi

Hunsekuppe

Antarasante

I B (PWD)

Proposed Town Site

Hosamala

FRH

Manchegaudanahalli

Krishnarajapura

Proposed Town Site

Belathu

Udbur

Karapura

Kattur

Begur

to Begur Colony

F.W.T.

KARNATAKA

core zone

buffer zone

2 Km

Forest Cover

N

	Above 40% crown density.
	10% to 40% crown density.
	scrub
	forest blanks / grassland / per. cultivations.
	water bodies.

FSI. nos: 58 A, 1981-89; 57D, 1987-89.

2 km

Note: Boundary of the NP. in the upper half has been drawn approximately as the scale of the FSI. map was not consistant with the lower half.

Habitation inside the National park.

V1-	Ancechaukur	V24-	Bandihalla
V2-	Mallipatna	V25-	Navalagadde
V3-	Siddapur	V26-	Nallurkolli
V4-	Begur	V27-	Malalakolli
V5-	Madayanura	V28-	Kanthur
V6-	Bettatur	V29-	Sampigekolli
V7-	Chinapuram	V30-	Berkolli
V8-	Chinapuram	V31-	Gergundi
V9-	Gonagur	V32-	Bolekom
V10-	Rahaoyram	V33-	Ammala
V11-	Hebballa	V34-	Kaimura
V12-	Sujjalugadde	V35-	Doddahadi
V13-	Kolangere	V36-	Dodabalrankuppe
V14-	Murkah	V37-	Nagankattehadi
V15-	Sagaramandala Colony	V38-	Ballehadi
V16-	Nagarhole	V39-	Mattigodu
V17-	Siddapura Colony	V40-	Bialvadi
V18-	Chantapura	V41-	Golurmachur
V19-	Shantapura Colony	V42-	Kurubadi
V20-	Gonigadde	V43-	Mattigodu
V21-	Kunturu	V44-	Kantrpura
V22-	Kalhalla	V45-	Mattigodu
V23-	Anemadugadde	V46-	Arnesothagadde
		V47-	Irmanigadde

APPENDIX A

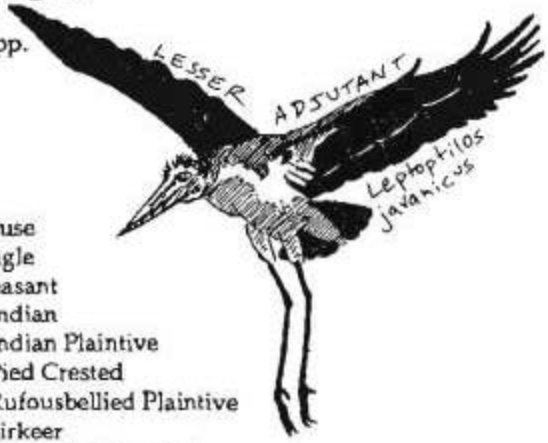
rees [mp, mp2, Q1]

Ailanthus triphysa
Albizia odoratissima
Albizia spp.
Anacardium occidentale
Anogeissus latifolia
Artocarpus heterophyllus
Artocarpus spp.
Bauhinia racemosa
Bombax ceiba
Bridelia crenulata
Bridelia spp.
Buchanania lanzan
Butea monosperma
Careya arborea
Cassia fistula
Chloroxylon swietenia
Chukrasia velutina
Cordia spp.
Dalbergia latifolia
Dalbergia paniculata
Derris indica
Dillenia pentagyna
Dillenia spp.
Diospyros melanoxylon
Dipterocarpus indicus
Emblica officinalis
Eucalyptus spp.
Ficus spp.
Ficus virens
Gardenia spp.
Garuga spp.
Gmelina arborea
Grewia tiliifolia
Haldina cordifolia
Holigarna spp.
Hopea parviflora
Kydia calycina
Lagerstroemia microcarpa
Lannea coromandelica
Machilus spp.
Mangifera indica
Meyna laxiflora
Naringi crenulata
Ougeinia oojeinensis
Pterocarpus marsupium
Pterocarpus spp.
Radermachera xylocarpa
Santalum album
Sapindus spp.
Schleichera oleosa
Semecarpus anacardium
Shorea roxburghii
Stereospermum personatum
Strychnos nux-vomica
Syzygium cumini
Syzygium spp.
Tamarindus indica
Tectona grandis
Terminalia alata
Terminalia bellirica
Terminalia chebula
Terminalia paniculata
Wrightia tinctoria
Xeromphis spinosa
Xeromphis uliginosa
Ziziphus mauritiana
Ziziphus spp.
Ziziphus xylopyrus

Other Plants [mp, mp2, Q1]

Acacia caesia
Acacia sinuata
Asparagus racemosus
Bambusa arundinacea
Bridelia spp.
Calycopteris floribunda
Chromolaena odorata
Clematis spp.
Coffea spp.
Cordia dichotoma
Curcuma spp.
Cymbopogon citratus
Cymbopogon flexuosus
Dendrocalamus strictus
Desmodium spp.
Eleusine coracana
Entada phaseoloides
Globba spp.
Grewia hirsuta
Helicteres isora
Hemidesmus indicus
Heteropogon contortus

Holarrhena antidysenterica
Imperata cylindrica
Jasminum spp.
Lantana camara
Lantana spp.
Nicotiana tabacum
Oryza sativa
Phoenix humilis
Smilax spp.
Sorghum bicolor
Spatholobus parviflorus
Themeda cymbaria
Themeda spp.
Themeda triandra
Ventilago spp.
Vernonia spp.
Vitis spp.
Xeromphis uliginosa
Zea mays
Zingiber spp.



APPENDIX B

Birds [KFD-Nag2, fv, mp]

Adjutant, Lesser
Babbler, Common
Babbler, Jungle
Babbler, Large Grey
Babbler, Quaker
Babbler, Rufous
Babbler, Rufousbellied
Babbler, Spotted
Babbler, Whiteheaded
Babbler, Yelloweyed
Barbet, Crimsonbreasted
Barbet, Small Green
Baya
Bee-eater, Bluebearded
Bee-eater, Bluecheeked
Bee-eater, Bluetailed
Bee-eater, Chesnutheaded
Bee-eater, Green
Bittern, Chestnut
Blackbird
Bluebird, Fairy
Bulbul, Redvented
Bulbul, Redwhiskered
Bulbul, Yellowbrowed
Bustard-quail, Common
Buzzard, Honey
Buzzard-eagle, White-eyed
Chat, Pied Bush
Chloropsis, Goldfronted
Chloropsis, Goldmantled
Coot
Cormorant
Cormorant, Little
Crake, Brown
Crow, House
Crow, Jungle
Crow-pheasant
Cuckoo, Indian
Cuckoo, Indian Plaintive
Cuckoo, Pied Crested
Cuckoo, Rufousbellied Plaintive
Cuckoo, Sirkeer
Cuckoo-shrike, Blackheaded
Cuckoo-shrike, Large
Curlew, Stone
Darter
Dove, Emerald
Dove, Indian Ring
Dove, Little Brown
Dove, Spotted
Drongo, Ashy
Drongo, Black
Drongo, Bronzed
Drongo, Greater Racket-tailed
Drongo, Whitebellied
Duck, Spotbill
Eagle, Black
Eagle, Crested Serpent
Eagle, Greyheaded Fishing
Eagle, Tawny
Egret, Cattle
Egret, Large
Egret, Little
Egret, Smaller
Falcon, Lagger
Falcon, Peregrine
Finch-lark, Ashycrowned
Flowerpecker, Tickell's

Flycatcher, Blacknaped
Flycatcher, Brown
Flycatcher, Nilgiri
Flycatcher, Paradise
Flycatcher, Redbreasted
Flycatcher, Rufoustailed
Flycatcher, Tickell's Blue
Flycatcher, Whitebrowed Fantail
Flycatcher-shrike, Pied
Garganey
Grebe, Little
Gull, Brownheaded
Harrier, Marsh
Harrier, Montagu's
Harrier, Pale
Hawk-cuckoo, Common
Hawk-eagle, Booted
Hawk-eagle, Crested
Hawk-owl, Brown
Heron, Grey
Heron, Little Green
Heron, Night
Heron, Pond
Heron, Purple
Hobby
Hoopoe
Hornbill, Common Grey
Hornbill, Malabar Grey
Hornbill, Malabar Pied
Ibis, Black
Ibis, White
Iora, Common
Jacana, Bronzewinged
Jacana, Pheasant-tailed
Junglefowl, Grey
Kestrel
Kingfisher, Common
Kingfisher, Lesser Pied
Kingfisher, Storkbilled
Kingfisher, Whitebreasted
Kite, Blackwinged
Kite, Brahminy
Kite, Pariah
Koel
Lapwing, Red-wattled
Lapwing, Yellow-wattled
Lark, Bush
Lark, Malabar Crested
Lark, Redwinged Bush
Lorikeet, Indian
Magpie-Robin
Malkoha, Small Greenbilled
Martin, Dusky Crag
Merlin
Minivet, Scarlet
Minivet, Small
Moorhen
Moorhen, Purple
Munia, Blackheaded
Munia, Red or Avadavat
Munia, Spotted
Myna, Brahminy
Myna, Common
Myna, Greyheaded
Myna, Hill
Myna, Whiteheaded
Nightjar, Common Indian
Nuthatch, Chestnutbellied
Nuthatch, Velvetfronted
Oriole, Blackheaded
Oriole, Golden
Osprey
Owl, Barn
Owl, Brown Fish
Owl, Mottled Wood
Owl, Scops
Owlet, Jungle
Parakeet, Alexandrine
Parakeet, Blossomheaded
Parakeet, Bluewinged
Parakeet, Roseringed
Partridge, Grey
Pastor, Rosy
Peafowl, Common
Pelican, Rosy
Pigeon, Blue Rock
Pigeon, Green Imperial
Pintail
Pipit, Indian Tree
Pipit, Paddyfield
Pitta, Indian
Plover, Great Stone
Plover, Little Ringed
Pratincole, Small Indian
Quail, Jungle Bush
Quail, Painted Bush
Redstart, Black
Robin, Indian
Roller, Indian
Sandpiper, Common

Sandpiper, Green
Sandpiper, Wood
Shag, Indian
Shelduck, Ruddy
Shikra
Shoveller
Shrike, Baybacked
Shrike, Brown
Shrike, Common Wood
Shrike, Large Wood
Shrike, Rufousbacked
Skylark, Eastern
Snipe, Fantail
Sparrow, House
Sparrow, Yellowthroated
Sparrow-hawk
Spinetail, Whiterumped
Spoonbill
Spurfowl, Red
Stilt, Blackwinged
Stint, Little
Stork, Openbill
Stork, Painted
Stork, Whitenecked
Sunbird, Purple
Sunbird, Purplerumped
Swallow
Swallow, Redrumped
Swallow, Wiretailed
Swallow-shrike, Ashy
Swift, Crested
Swift, House
Swift, Large Brownthroated Spinetail
Tailorbird
Teal, Common
Teal, Cotton
Tern, Indian River
Thrush, Blue Rock
Thrush, Malabar Whistling
Thrush, Orangeheaded Ground
Tit, Grey
Tit, Yellowcheeked
Tree Pie, Indian
Tree Pie, Southern
Trogon, Malabar
Vulture, Black
Vulture, Egyptian
Vulture, Indian Longbilled
Vulture, Indian Whitebacked
Wagtail, Forest
Wagtail, Grey
Wagtail, White
Wagtail, Yellow
Warbler, Dull Green Leaf
Warbler, Indian Great Reed
Warbler, Large Crowned Leaf
Warbler, Paddyfield
Warbler, Reed
Warbler, Streaked Fantail
Warbler, Tickell's
Warbler, Tytler's Leaf
Waterhen, Whitebreasted
Weaver Bird, Streaked
White-eye
Woodpecker, Blackbacked
Woodpecker, Heartspotted
Woodpecker, Indian Goldenbacked Threetoed
Woodpecker, Indian Great Black
Woodpecker, Lesser Goldenbacked
Woodpecker, Little Scalybellied Green
Woodpecker, Pigmy
Woodpecker, Rufous
Woodpecker, Small Yellownaped
Woodpecker, Yellowfronted Pied
Wren-warbler, Ashy
Wren-warbler, Franklin's
Wren-warbler, Plain

ADICHUNCHUNAGIRI PEACOCKS SANCTUARY

This tiny sanctuary is situated near the Chunchuna Giri temple and pilgrim centre, in Mandya district. It consists of gently undulating terrain, scrub forests and plantations (mp). It is the only sanctuary in India declared especially for the peafowl, and is given a second name, 'Mayur Vana' (Peafowl Forest) in the notification. People in the area are known to give religious protection to this bird.

LEGAL STATUS: Declared a sanctuary vide notification FFD 182 FWL 78 on 21 October, 1981 [notif].

AREA AND ZONING: 84.44 ha. (0.84 sq km). No zoning.

LOCATION: *District* Mandya [mp]; *Latitudinal range* 13°01'08" to 13°01'43" N; *Longitudinal range* 76°04'01" to 76°04'33" E [tp]; *Nearest town* Nagamangala (26 km); *Nearest railhead* Mandya (90 km); *Nearest airport* Bangalore (120 km) [dir].

APPROACHES: From Bangalore to Nelligere (100 km) via Nagamangala [St map], and then 12 km on to the sanctuary [qa '91].

TOPOGRAPHY AND CLIMATE: *Altitude* approx. 800 m, in the southern part [tp contour line]; *Temperature* 14°C to 32°C; *Mean annual rainfall* 700 mm.

FLORA: The sanctuary area is too small to permit analysis of its vegetation cover from available Landsat imagery, while this imagery shows surrounding areas to be devoid of forest cover [Landsat 1986]. The forest types reported from the sanctuary are Tropical Dry Deciduous Scrub 5/DS1 [Rodgers and Panwar 1988q] and Southern Thorn Scrub 6A/DS1. Eucalyptus plantations have been raised, prior to declaration, and cover much of the sanctuary area [mp, tp]. No planting has been done since 1981.

Trees [mp, q1]

Acacia leucophloea
Acacia nilotica
Acacia spp.
Albizia amara
Anogeissus latifolia
Eucalyptus spp.
Ficus benghalensis
Ficus religiosa
Tamarindus indica
Ziziphus spp.

Other Plants [mp, q1]

Agave spp.

FAUNA:

Mammals [q1, mp]

Antelope, Indian
Bear, Sloth
Boar, Indian Wild
Deer, Barking
Jackal
Macaque, Bonnet
Mongoose, Common

Reptiles [mp]

Monitor, Common Indian
Python, Indian
Snake, Rat

Birds [q1, mp]

Dove, Indian Ring
Hoopoe
Peafowl, Common

Though reported by the wildlife authorities, the presence of animals like Sloth bear is doubtful due to the small size of the area and the lack of dense cover. No information is available on other fauna found in the sanctuary.

OCCURRENCE AND CONTROL OF DISEASE: No occurrence of disease or epidemics has been reported. The nearest veterinarians are at Nagamangala, 26 km away, and Tandaga, 23 km away [tp].

OTHER FACTORS AFFECTING HABITAT: None reported.

WATER RESOURCES: The sanctuary has five seasonal streams [tp], and three perennial waterholes of which one is natural and the other two artificial. The location of these waterholes could not be ascertained.

BUDGET: No separate budget [qa '91].

MANAGEMENT PLAN: A Management Plan for the period 1990–1995, has been prepared by the DCF (WL), Mysore, in December, 1989, but has not yet been approved.

PERSONNEL: The ACF(WL), Mysore, has jurisdiction over this sanctuary. One forest guard and one forest watcher are posted at the sanctuary.

EQUIPMENT: None

RESEARCH AND MONITORING: None

COMMUNITY INTERACTION PROGRAMMES: Film shows are held once in two months to educate people residing outside the sanctuary.

HUMAN PRESENCE:

Rights and Leases: Right of way is granted on the path running through the sanctuary, connecting Chunchanahalli to Chunchana Giri [notif]. Information on other rights of local villagers is not available.

Habitation: There is one village (Chunchanahalli) inside the sanctuary [tp], the population of which is not known. At least 21 villages are located in the 10 km radius [tp], the populations of which are also not known.

Tourism: No record of the number of visitors to the sanctuary is kept.

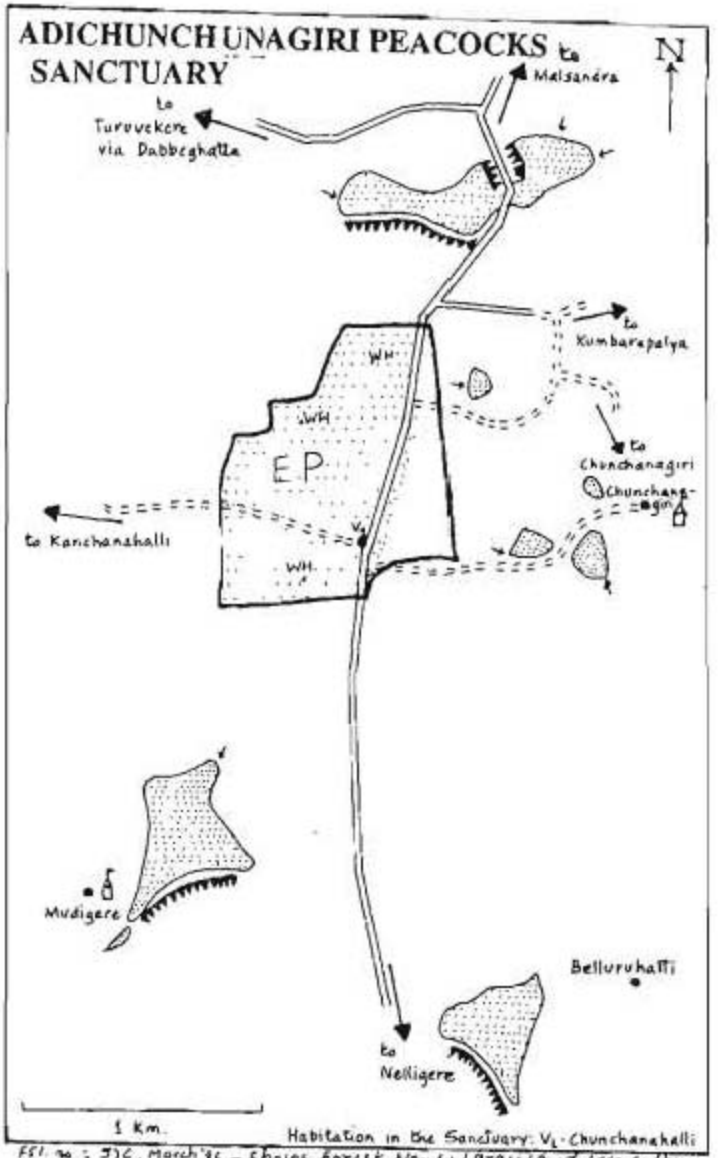
INFORMATION FOR VISITORS: The sanctuary adjoins the Chunchuna Giri temple and pilgrim centre. This centre also has a PWD Dak Bungalow.

NGOs/INDIVIDUALS ASSOCIATED: None.

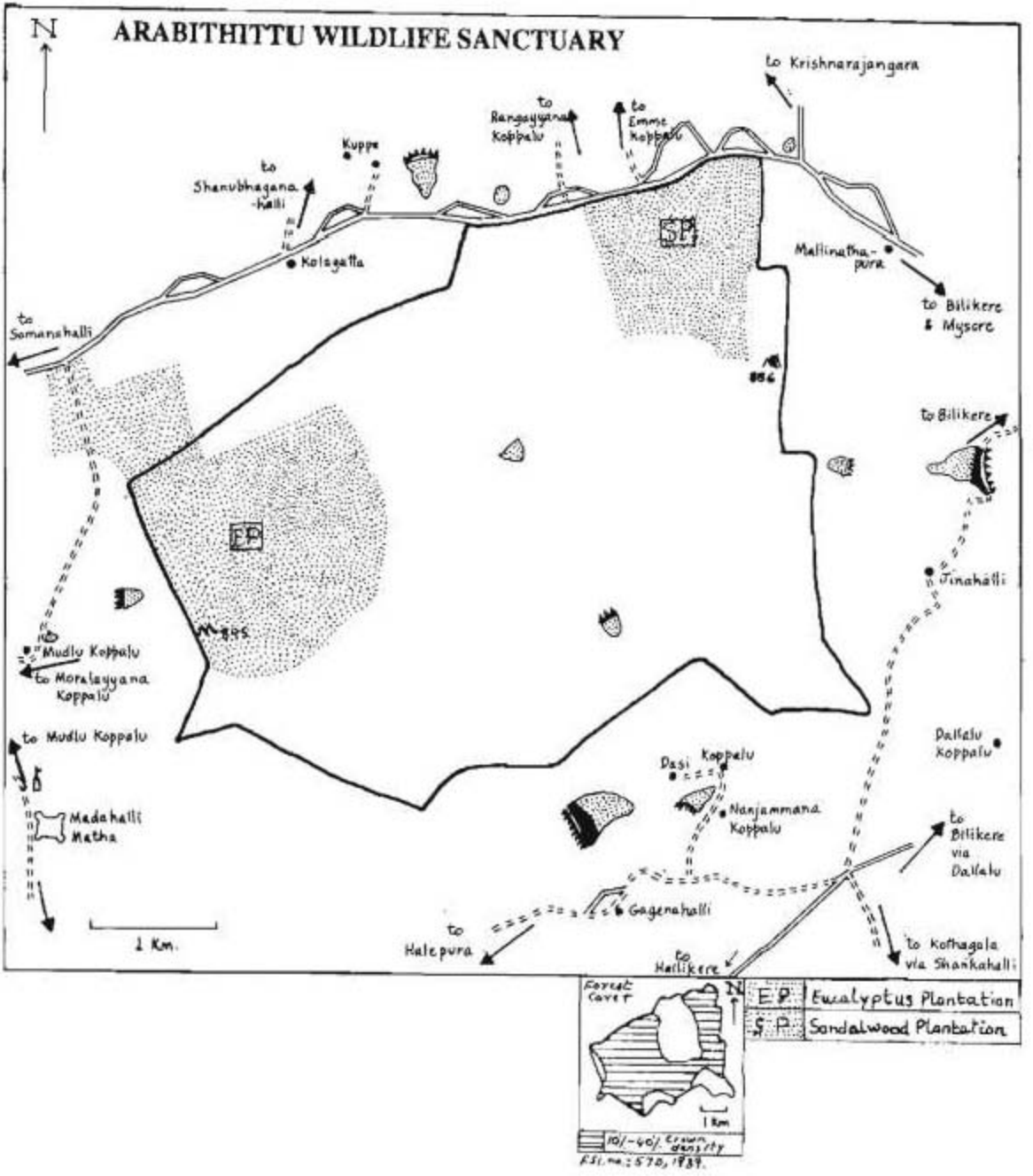
CONTACT ADDRESS:

1) Conservator of Forests
Wildlife Preservation
Aranya Bhawan, Ashokapuram, Wood Yard
Mysore-570 008
Karnataka

2) Local in-charge:
Asst. Conservator of Forests
(as above)



FSI. no : 37C, March'86 - Shows Forest blanks / grassland / pvt. cultivation in the sanctuary as well as several kms. around it.


N
ARABITHITTU WILDLIFE SANCTUARY
to Krishnarajangara
to Rangayyana Koppalu
to Emme Koppalu
Kuppe
to Shanubhagana -halli
Kolagatta
SP
Mallinatha-pura
to Bilikere & Mysore
to Somanahalli
856
to Bilikere
EP
Jinahalli
Mudlu Koppalu
to Moralayyana Koppalu
to Mudlu Koppalu
Dallalu Koppalu
Dasi Koppalu
Nanjammana Koppalu
Madahalli Matha
to Bilikere via Dallalu
Gagenahalli
1 Km.
to Halepura
to Hallikere
to Kothagala via Shankahalli
Forest Cover
N
1 Km
10/-40/. Crown density
F.D. no: 570, 1989.
E.P. Eucalyptus Plantation
S.P. Sandalwood Plantation

ARABITHITTU SANCTUARY

A small sanctuary consisting of scrub forest and plantations, and surrounded by agricultural fields.

LEGAL STATUS: Declared a sanctuary vide notification No. AHFF 3 FWL 85, dated 03.04.1985 [qa]. Earlier a game reserve [notif] . Legal procedures have been completed in 1994, though the exact date of final notification is unclear [Appayya, Pers. Comm. 1994].

AREA AND ZONING: 1,350 ha (13.50 sq km). No zoning.

LOCATION: *District*: Mysore [tp]; *Latitudinal range* 12°18'10" to 12°20'41" N [tp]; *Longitudinal range* 76°23'10" to 76°26'28" N [tp]; *Nearest town* Bilikere (2.5 km) [tp]; *Nearest railhead* Krishnarajanagara (13km) [tp]; *Nearest airport* Mysore (27.5 km).

APPROACHES: From Mysore to Bilikere (25 km), and on to the sanctuary's eastern edge (2.5 km) [tp].

TOPOGRAPHY AND CLIMATE: *Altitude* 780 m (lowest contour line) to 856 m, the highest point being on the eastern boundary of the sanctuary [tp]; *Temperature* 17.8 to 35°C [qa]; *Mean annual rainfall* 2000 mm [qa].

FLORA: Landsat imagery shows the sanctuary entirely covered by scrub land, and surrounded by cultivated areas and forest blanks [Landsat 1986]. It is not known which type the scrub land corresponds to in Champion and Seth's (1968) classification. Two large plantations, one of Eucalyptus and the other of Sandalwood *Santalum album*, are also located within the sanctuary [tp]. It is proposed to plant 10 ha. with fruit trees like Wood apple *Naringi crenulata*, Fig *Ficus* sp., Jamun *Syzygium cumini*, Phyllanthus sp., *Artocarpus* sp. and *Ziziphus* sp. [qa], for habitat improvement. Subabul *Leucaena leucocephala* is also proposed to be planted for fodder in an area of over 50ha [mp, qa].

Trees [mp]

- *Ailanthus triphysa*
- *Anogeissus latifolia*
- *Artocarpus heterophyllus*
- *Butea* spp.
- *Cassia fistula*
- *Derris indica*
- *Diospyros melanoxylon*
- *Emblica officinalis*
- *Eucalyptus* spp.
- *Hardwickia binata*
- *Kydia calycina*
- *Mangifera indica*
- *Naringi crenulata*
- *Santalum album*
- *Sapindus emarginatus*
- *Semecarpus anacardium*
- *Tamarindus indica*
- *Terminalia bellirica*
- *Terminalia chebula*
- *Xeromphis spinosa*

Other Plants [mp]

- *Acacia sinuata*
- *Curcuma aromatica*
- *Zingiber* spp.
- *Ziziphus* spp.

FAUNA

Mammals [mp]

- Boar, Indian Wild
- Deer, Barking
- Deer, Spotted
- Hare, Indian
- Jackal
- Leopard
- Tiger

Reptiles [mp]

- Monitor, Common Indian
- Snake, Rat

Birds [mp]

Drongo, Black
Junglefowl, Grey
Peafowl, Common

Information on other fauna is not available.

OCCURRENCE AND CONTROL OF DISEASE: No disease has been reported amongst flora and fauna [qa]. Regular vaccination programmes are undertaken by the local veterinarian.

OTHER FACTORS AFFECTING HABITAT: Gully plugging with brush wood and rough stone checkdams is undertaken [mp]. There have been stray cases of fire and therefore fire watchers have been employed.

WATER RESOURCES: Two seasonal tanks [tp]. An artificial water tank is proposed and the two existing tanks are to be deepened [mp].

BUDGET: Rs. seven lakhs has been earmarked to improve the habitat, during 1993–94.

MANAGEMENT PLAN: Prepared by the Deputy WL Warden, Mysore, in December 1989, for the period 1990–1995 [mp]. This has yet to be approved [qa].

PERSONNEL: The Wildlife Wing of the Forest Dept. has posted one ACF, 1 RFO, 1 Forester and 3 Beat Guards. The area also comes under the jurisdiction of the DCF (WL), Mysore [mp].

EQUIPMENT: None.

RESEARCH AND MONITORING: None.

COMMUNITY INTERACTION PROGRAMMES: Film shows are being conducted around the sanctuary during the village festival.

HUMAN PRESENCE:

Rights and Leases: None.

Habitation: None inside. There are at least 83 villages in the surrounding area [tp], the population of which has not been ascertained. Seven villages in the immediately adjacent areas have a population of 2800 [qa].

Grazing: According to the Management Plan, "the sanctuary is not susceptible to ... grazing" [mp], as a chain link mesh and a cattle-proof trench have been erected all around the sanctuary by the defense authorities.

Offenses and Illegal Activities: None reported.

Tourism: Exists, but no additional information is available.

Use by Other Government Agencies: None reported.

NGO's/INDIVIDUALS ASSOCIATED: None.

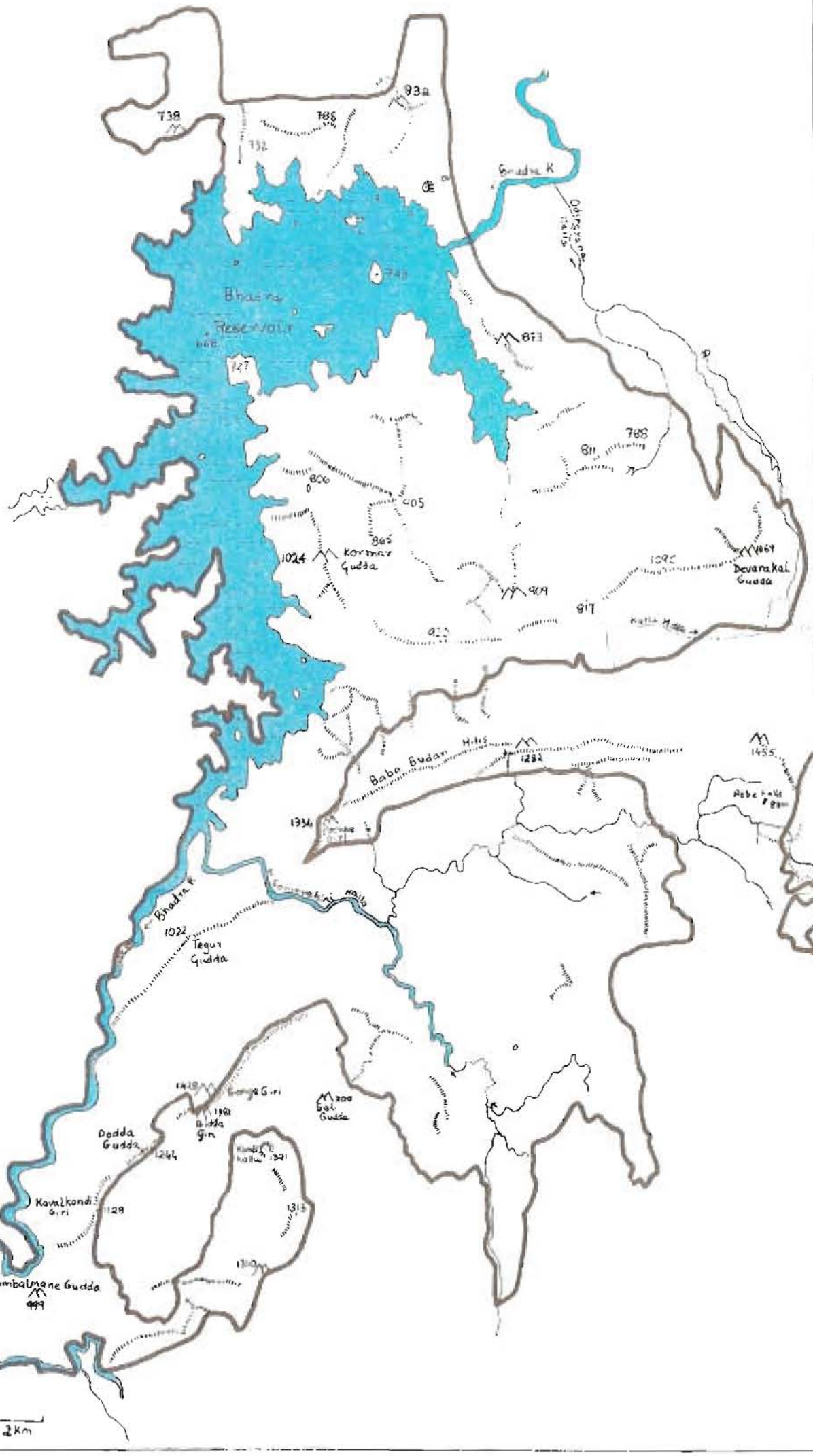
CONTACT ADDRESS:

Conservator of Forests
Wildlife Preservation
Aranya Bhawan, Ashokapuram, Wood Yard
Mysore-570008
Karnataka

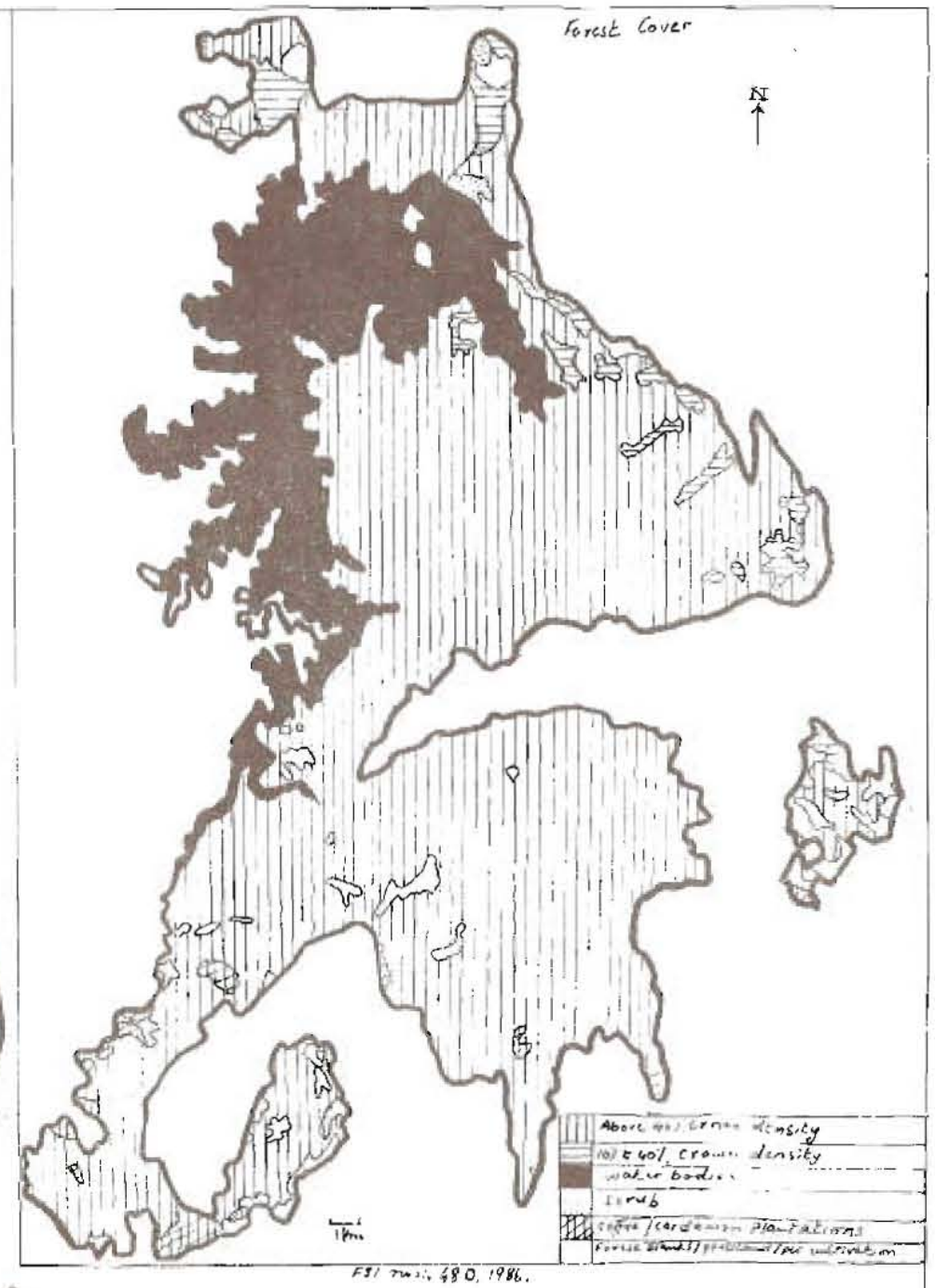
N

BHADRA WILDLIFE SANCTUARY

(Map I - Physical)

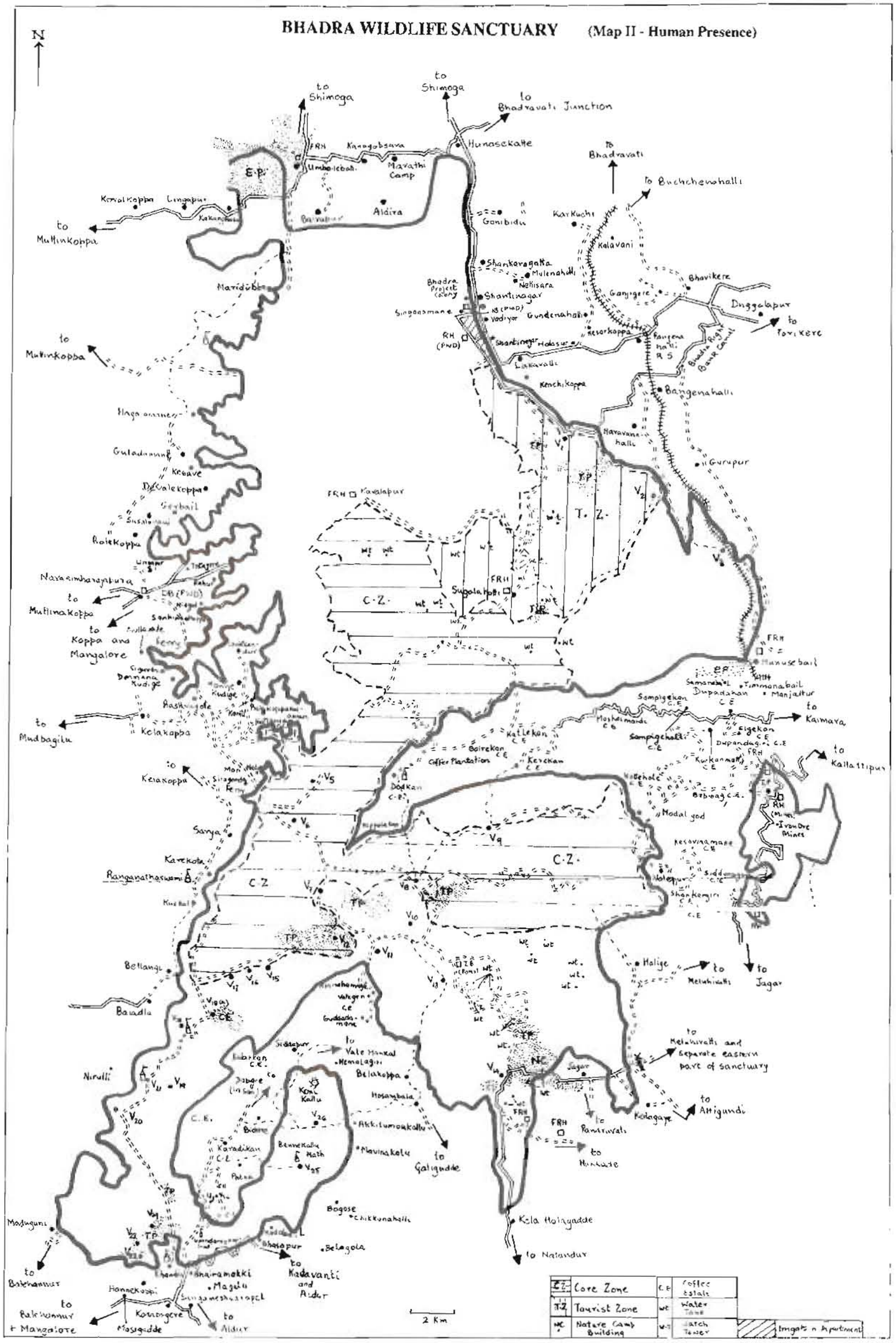


Forest Cover



FSI map, 480, 1986.

BHADRA WILDLIFE SANCTUARY (Map II - Human Presence)



Habitation inside the Sanctuary

- V1- Dodda Kundar
- V2- Channaiyanakere (Shown as temporary camp)
- V3- Biranahalli
- V4- Sugalhatti
- V5- Kanchgaru
- V6- Hebbe
- V7- Kurkolomane
- V8- Hippala
- V9- Karvani
- V10- Madha
- V11- Dabgare
- V12- Voddarabatti
- V13- Kesave
- V14- Muttodi
- V15- Metuvani
- V16- Heggaru
- V17- Hirebellu
- V18- Kodi
- V18(a)- Kodi C.E.
- V19- Karugadde
- V20- Trasamata
- V21- Shiragola
- V22- Ambuguli
- V23- Karagadde
- V24- Balegadde
- V25- Paradeshappana
- V26- Gundihambala

BHADRA WILDLIFE SANCTUARY

Consisting of undulating terrain covered by moist and dry deciduous vegetation, this sanctuary was famous as a hunters' paradise in the past [mp]. Bamboo (*Bambusa* and *Dendrocalamus* spp.) is very common throughout the area. Water sources are abundant, the Bhadra River and Reservoir forming a dominant part of the landscape.

The sanctuary has been notified in two sections, Lakavalli and Muttodi*, and is connected by forest corridor to Shettihally Sanctuary in the north west and Kudremukh National Park in the south west. The Muttodi section is much smaller than the Lakavalli, and is reported to have shola forests (type unclear) which are being degraded and need protection [mp]. It also contains appreciably greater altitudes than the Lakavalli section, including the sanctuary's highest point, Kalhatti Giri [tp].

LEGAL STATUS: Declared a sanctuary on September 25, 1974, vide notification AFD 25 FWL 74 [notif].

AREA AND ZONING: 49,246 ha. (492.46 sq. km.) Of this, the Lakavalli section is 47,473 ha., while the Muttodi section is 1773 ha. The Core Zone covers 13,300 ha., the Tourism Zone 10,083 ha., and the Buffer Zone 25,863 ha. There is a proposal to add an area of 800 ha. to the sanctuary.This area has not been handed over to the Forest Department by the Revenue Department, nor has it yet been demarcated on the ground [qa 1991]. Boundary demarcation is in progress.

LOCATION: *Districts*: Chikmagalur and Shimoga; *Latitudinal range* Lakavalli section 13°22'08" to 13°47'37" N, and Muttodi section 13°29'52" to 13°33'28" [map]; *Longitudinal range* Lakavalli section 75°29'00" to 75°39'52", and Muttodi section 75°44'17" to 75°46'59" [map]; *Nearest town* Lakavalli (1.25 km) [map]; *Nearest railhead* Rangenahalli (6 km) [tp]; *Nearest airport* Mangalore (153 km) [mp].

APPROACHES: From Bangalore to Birur (216 km) then to Tarikere (25 km) and on to the sanctuary (20 km) [tp].

TOPOGRAPHY AND CLIMATE: *Altitude* 615 m [q1] to 1872 m, the highest point being on the eastern border [tp]; *Temperature* 10°C to 35°C; *Mean annual rainfall* 1000 mm [Das Gupta 1976].

FLORA: According to Landsat imagery, the sanctuary consists entirely of closed forest (canopy cover 40% and above) though patches of open area have also been reported [mp]. To the east and south, the sanctuary is bounded by plantations . Adjoining areas of the sanctuary show fairly good forest except in the north east [Landsat 1986]. The main forest types found in the sanctuary are Southern Dry Mixed Deciduous Forest 5A/C3, Southern Moist Mixed Deciduous Forest 3B/C2 and Western Sub-tropical Hill Forest 8A/C2 [Rodgers & Panwar 1988q].

Between 1979–80 and 1983–84, 121 ha was planted with commercial timber species. Trees planted include *Acacia auriculiformis*, Teak *Tectona grandis* and *Acrocarpus fraxinifolius*. Fruit yielding trees have also been planted. The weed Eupatorium *Chromolaena odorata* has spread throughout the open areas of the sanctuary [mp]. There are old Teak and *Eucalyptus* plantations scattered throughout the sanctuary [fv, tp]. Most of these plantations were raised prior to declaration of the sanctuary.

Trees and *Other Plants*: See Appendix A

FAUNA:

Mammals [dir, fv, q1, Karanth 1982, mp]

Antelope, Fourhorned	Cat, Jungle
Bear, Sloth	Cat, Rustyspotted
Boar, Indian Wild	Civet, Brown Palm

* This nomenclature is used by the sanctuary authorities, but it is not quite clear why; Muttodi, the settlement, actually lies within what is called the Lakavalli section.

Civet, Common Palm
Civet, Small Indian
Deer, Barking
Deer, Mouse
Deer, Spotted
Dog, Indian Wild
Elephant, Indian
Fox, Flying
Fox, Indian
Gaur
Hare, Indian
Hyena, Striped
Jackal
Langur, Common
Leopard
Leopard-cat
Loris, Slender
Macaque, Bonnet
Mongoose, Common
Mongoose, Brown
Mongoose, Ruddy
Mongoose, Stripednecked
Otter, Common
Otter, Smooth Indian
Pangolin, Indian
Porcupine, Indian
Sambar
Squirrel, Common Giant Flying
Squirrel, Indian Giant
Squirrel, Threestriped Palm
Tiger

Reptiles [fv, ql, dir, Karanth 1982, mp]
Crocodile, Marsh
Monitor, Common Indian
Python, Indian
Snake, Common Wolf
Keelback, Green
Snake, Rat
Snake, Common Vine
Cobra, Common
Cobra, King
Viper, Russell's
Viper, Bamboo Pit

Birds: See Appendix B
No information is available on other fauna. There are about 150 salt licks in the sanctuary [fv].

OCCURRENCE AND CONTROL OF DISEASE: A rinderpest epidemic spread between May and September 1989, killing 55 Gaur [mp]. Subsequently about 25,000 cattle living in and around the sanctuary were inoculated [mp]. Restrictions were imposed on the entry of cattle, and waterholes were disinfected [mp]. The nearest veterinarian is located at Bhadravati, 14 km away. [tp].

OTHER FACTORS AFFECTING HABITAT: Forest fires are a threat to the sanctuary, occurring between February and April. However, so far no major damage has been caused and the fires have always been controlled in time. They are reportedly, mainly caused by villagers, some accidentally, others deliberately [fv]. About 500 km of firelines are reportedly maintained [mp].

WATER RESOURCES: The Bhadra reservoir covers a part of the north and western section of the sanctuary, and the Bhadra river flows along its south-western boundary [tp]. There are also several perennial and seasonal streams, one perennial reservoir (other than Bhadra), five seasonal reservoirs, 11 seasonal lakes [tp], and several artificial tanks [WL map].

BUDGET: Rs. 18.86 lakhs for 1987–88, and Rs. 11.72 lakhs for 1988–89.

MANAGEMENT PLAN: A plan for the period 1990 to 1995 has been drawn up by the DCF (WL), Shimoga, and has been submitted for approval.

PERSONNEL: One DCF, one ACF, three RFO's, 16 Foresters, 31 Forest Guards, four drivers, and one caretaker.

EQUIPMENT: Eight wireless sets, nine guns, two pairs of binoculars, two vans, two boats, one car ,one jeep and one lorry.

RESEARCH AND MONITORING: None

COMMUNITY INTERACTION PROGRAMMES: Films are occasionally screened for villagers. About ten villages are covered annually. Since 1986 a nature camp has been held annually at Muttodi for school children. About 1000 students attend the camp [mp].

HUMAN PRESENCE:

Rights and Leases: Grazing rights exist with inhabitants of both the villages inside as well as those outside the sanctuary, while those inside also have habitation and agricultural rights. Fishing is done by local fisherfolk in the Bhadra reservoir, licenses for which are given by the Karnataka State Inland Fisheries Development Corporation [mp, qa '91].

Habitation: There are 23 villages* inside the sanctuary with a total population of 4600 [qa '91]. It has been proposed to relocate these villages to the outskirts of the sanctuary, and a committee chaired by the Deputy Commissioner, Chikmagalur, has been constituted to oversee this process [mp]. The surrounding area has 80 villages with a population of about 25,000.

Grazing: A total of 7400 heads of livestock graze inside the sanctuary.

Offenses and Illegal Activities : One case of illegal hunting was recorded in 1983–84. 200 ha of the sanctuary has been encroached upon for agriculture. There are reports that timber smugglers are responsible for bamboo smuggling from the sanctuary [fv]. It has also been reported that villagers in the Lakavalli section often engage in poaching, illegal felling of trees, and extraction of fuelwood [fv].

Tourism: The sanctuary received 1668 visitors in 1989–90 [qa '91].

Use by Other Government Agencies: Other government agencies using the sanctuary are the PWD for roads (21 km), the Fisheries Department which issues licenses for fishing in the Bhadra reservoir, the Irrigation Department which occupies area adjoining the Bhadra dam, and the Territorial Wing of the Forest Department for the commercial extraction of green as well as dry bamboo, timber, and firewood from the entire sanctuary [mp].

The proposed Upper Bhadra Project envisages the construction of a dam across the Bhadra river at Magundi, outside the sanctuary. The main right bank canal of the Project will pass through the Muttodi Valley and Hebbe area, which are reportedly the richest parts of the sanctuary [mp].

Miscellaneous: Two human fatalities were recorded between 1979–80 and 1983–84, both caused by Elephants. Compensation was paid but details are not available. There were also 76 cases of livestock lifting from the sanctuary in this period, though no compensation was paid, as no claims were reportedly made. Considerable crop damage was caused by wild animals, and it is reported that about Rs 80,000 is paid annually (by the Territorial Wing) to villagers as compensation [fv].

INFORMATION FOR VISITORS: Permits are required for entry by vehicles. Entry is prohibited between 6.00 pm and 6.00 am.

The sanctuary is best visited between October and May, when the vegetation is sparse and the wildlife easy to spot. Accomodation is available in several rest houses inside and in the areas surrounding the sanctuary.

NGOs/INDIVIDUALS ASSOCIATED: There are two Honorary Wildlife Wardens, Shri P.K. Ramesh and Shri Sethna (Please see addresses in Appendix 8).

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* According to the Survey of India toposheets, however, there are 25 areas of habitation, and one temporary settlement (see map). This discrepancy could not be resolved.

CONTACT ADDRESSES:

1) Conservator of Forests
Wildlife, North Circle
Shimoga-577201
Karnataka

2) Local in-charge:
Deputy Conservator of Forests
Bhadra Wildlife Division
Rampura Post-Near Gavanahalli
Chikmagalur-577101
Karnataka

APPENDIX A

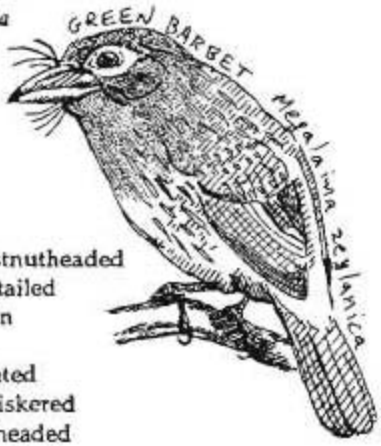
Trees [q], mp, Karanth 1982]

Acacia auriculiformis
Acacia spp.
Acrocarpus fraxinifolius
Albizia odoratissima
Albizia procera
Albizia spp.
Alstonia scholaris
Anogeissus latifolia
Anogeissus spp.
Artocarpus hirsutus
Artocarpus spp.
Bauhinia malabarica
Bauhinia spp.
Bischofia javanica
Bombax ceiba
Bombax spp.
Bridelia crenulata
Bridelia spp.
Buchanania lanzan
Buchanania spp.
Butea monosperma
Calophyllum spp.
Careya arborea
Caryota urens
Cassia fistula
Cassia siamea
Casuarina equisetifolia
Chloroxylon swietenia
Cinnamomum spp.
Cinnamomum verum
Dalbergia latifolia
Dalbergia sissoo
Derris indica
Dillenia pentagyna
Dillenia spp.
Diospyros montana
Diospyros oocarpa
Elaeocarpus spp.
Emblica officinalis
Eucalyptus tereticornis
Ficus benghalensis
Ficus drupacea
Ficus hispida
Ficus racemosa
Ficus spp.
Garcinia indica
Gardenia gummifera
Garuga spp.
Gmelina arborea
Grewia tiliifolia
Haldina cordifolia
Hardwickia binata
Holoptelea integrifolia
Hopea parviflora
Hopea wightiana
Hydnocarpus laurifolia
Kydia calycina
Lagerstroemia microcarpa
Lagerstroemia parviflora
Lagerstroemia speciosa
Lagerstroemia spp.
Mallotus philippensis

Mangifera indica
Melia dubia
Michelia champaka
Michelia spp.
Mimusops elengi
Mitragyna parvifolia
Palaquium spp.
Persea macrantha
Pterocarpus marsupium
Pterocarpus spp.
Santalum album
Sapindus emarginatus
Sapindus spp.
Schleichera oleosa
Semecarpus anacardium
Spondias pinnata
Sterculia villosa
Syzygium cumini
Syzygium spp.
Tamarindus indica
Tectona grandis
Terminalia alata
Terminalia arjuna
Terminalia bellirica
Terminalia chebula
Terminalia paniculata
Trema orientalis
Vitex altissima
Vitex negundo
Wrightia tinctoria
Xeromphis spinosa
Xylia xylocarpa
Ziziphus mauritiana
Ziziphus xylopyrus

Other Plants [q1, mp, Karanth 1982]

Abrus precatorius
Abutilon indicum
Acacia caesia
Acacia sinuata
Argyreia thomsonii
Bambusa arundinacea
Bridelia spp.
Calotropis gigantea
Calycopteris floribunda
Canthium parviflorum
Cordia dichotom
Cordia macleodii
Curcuma longa
Curcuma spp.
Cymbopogon citratus
Dendrocalamus strictus
Entada phaseoloides
Globba spp.
Helicteres isora
Hemidesmus indicus
Holarrhena antidysenterica
Imperata cylindrica
Ixora arborea
Lantana camara
Leucas aspera
Ochlandra spp.
Ocimum sanctum
Oxytenanthera spp.
Prosopis spp.
Zingiber officinale
Ziziphus oenoplia



APPENDIX B

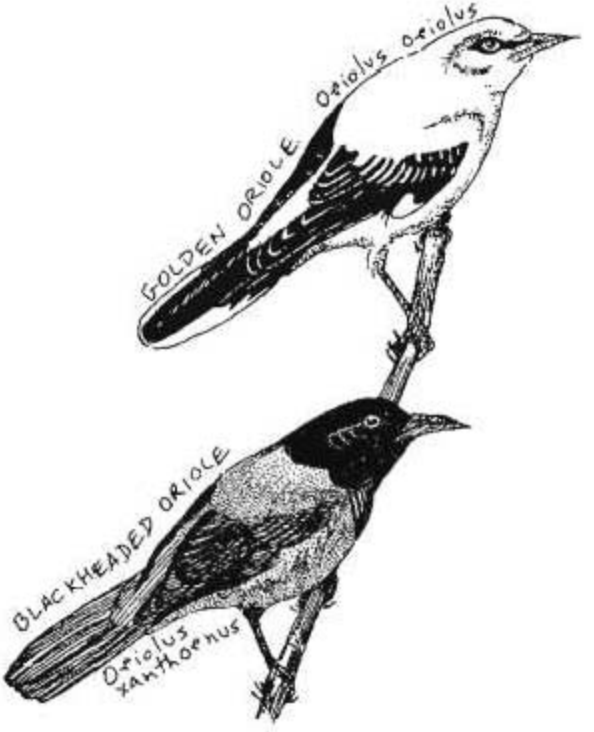
Birds [fv, q1, dir, mp, M.B. Krishna Pers. Comm.]

Avocet
Babbler, Common
Babbler, Jungle
Babbler, Large Grey
Babbler, Rufousbellied
Babbler, Slatyheaded Scimitar
Babbler, Yelloweyed
Barbet, Crimsonbreasted
Barbet, Green
Barbet, Small Green
Baya
Bee-eater, Chestnutheaded
Bee-eater, Bluetailed
Bee-eater, Green
Blackbird
Bulbul, Redvented
Bulbul, Redwhiskered
Bunting, Blackheaded
Bunting, Redheaded
Chat, Pied Bush

COMMON INDIAN NIGHTJAR
Caprimulgus asiaticus

Chat, Stone
Chloropsis, Goldfronted
Chloropsis, Goldmantled
Coot
Cormorant
Cormorant, Little
Crow, House
Crow, Jungle
Crow-pheasant
Cuckoo, Pied Crested
Cuckoo-shrike, Large
Cuckoo-shrike, Blackheaded
Darter
Dove, Indian Ring
Dove, Little Brown
Dove, Spotted
Drongo, Black
Drongo, Greater Racket-tailed
Drongo, Whitebellied
Eagle, Crested Serpent
Eagle, Short-toed
Eagle, Tawny
Egret, Cattle
Egret, Large
Egret, Little
Falcon, Lagger
Flowerpecker, Thickbilled
Flowerpecker, Tickell's
Flycatcher, Paradise
Flycatcher, Tickell's Blue
Flycatcher, Whitebrowed Fantail
Hawk-cuckoo, Common
Hawk-eagle, Crested
Heron, Pond
Hoopoe
Hornbill, Common Grey
Hornbill, Malabar Grey
Hornbill, Malabar Pied
Junglefowl, Grey
Kingfisher, Common
Kingfisher, Lesser Pied
Kingfisher, Whitebreasted
Koel
Lark, Crested
Lorikeet, Indian
Magpie-Robin
Martin, Crag
Martin, Dusky Crag
Minivet, Scarlet
Minivet, Small
Munia, Red
Munia, Spotted
Munia, Whitebacked
Munia, Whitethroated
Myna, Common
Myna, Greyheaded
Myna, Hill
Nightjar, Common Indian
Nuthatch, Chestnutbellied
Nuthatch, Velvetfronted
Oriole, Blackheaded
Oriole, Golden
Osprey
Owl, Brown Fish
Owl, Great Horned or Eagle-owl
Parakeet, Blossomheaded
Parakeet, Bluewinged
Parakeet, Roseringed
Peafowl, Common
Robin, Indian
Shama
Shrike, Baybacked
Shrike, Common Wood
Shrike, Grey
Shrike, Rufousbacked
Skylark, Eastern
Sparrow, House
Sparrow, Yellowthroated
Sunbird, Purple
Sunbird, Purplerumped
Sunbird, Yellowbacked
Swallow
Swallow, Indian Cliff
Swallow, Redrumped
Swallow, Wiretailed
Swallow-shrike, Ashy
Swift, House
Tailorbird
Thrush, Blue Rock
Thrush, Malabar Whistling
Tit, Grey
Tit, Yellowcheeked
Treepie, Southern
Trogon, Malabar
Vulture, Egyptian
Vulture, Indian Whitebacked
Wagtail, Grey
Wagtail, Large Pied
Wagtail, White
Wagtail, Yellow

Wagtail, Yellowheaded
Warbler, Streaked Fantail
Waterhen, Whitebreasted
Weaver Bird, Blackthroated
White-eye
Woodpecker, Lesser Goldenbacked
Woodpecker, Pigmy
Woodpecker, Rufous
Woodpecker, Yellowfronted Pied
Wren-warbler, Ashy
Wren-warbler, Plain



BILIGIRI RANGASWAMY TEMPLE (B.R.T.) WILDLIFE SANCTUARY

This sanctuary is well-known for its population of Elephants, and a wide diversity of fauna. The ancient temple of Biligiri Rangaswami, situated on a hilltop in the western part of the sanctuary, has been a place of pilgrimage for more than 500 years. The entire area of the sanctuary was previously Reserve Forest.

The terrain is undulating, with a chain of hill ranges running parallel to each other and forming several valleys [mp]. Streams and rivers criss-cross the sanctuary, draining to the south-west, and partly to the north-east [tp]. Vegetation is mostly deciduous, only some high altitude slopes containing evergreen (shola) forest [mp]. Apparently the original vegetation has been considerably altered by grazing. Much of the southern boundary of the sanctuary adjoins the state of Tamil Nadu.

LEGAL STATUS: Declared a sanctuary vide notification AFD 53 FWL 74 on June 27, 1974 [notif 1].

AREA AND ZONING: Present area 53,952.94 ha (539.53 sq km) [notif 1]. Original area 32,440 ha [q1]. Area increased vide notification AHFF 75 FWL 84 dated January 14, 1987 [notif 2]. The sanctuary has been divided into a Core Zone of approximately 18,000 ha., Buffer Zone of approximately 18,500 ha., and Tourism Zone of approximately 17,500 ha. [mp]. However, zonal boundaries are still to be finalised [qa '91].

LOCATION *District* Mysore; *Latitudinal range* 11°43'09" to 12°08'12"N [tp]; *Longitudinal range* 77°00'36" to 77°15'53" E [tp]; *Nearest town* Kollegal (8 km); *Nearest railhead*, Chamrajnagar (18 km) [tp]; *Nearest airport* Bangalore (qa '91).

APPROACHES: From Mysore to Nanjangud (22 km), on to Chamrajnagar (35 km), and Nagavalli (10 km), and 25 km to Biligiri Rangana Betta, inside the sanctuary [SOI 1981].

TOPOGRAPHY AND CLIMATE: *Altitude* about 750 m [q1] to 1816 m., the highest point being Kattari Betta in the southern part of the sanctuary [tp]; *Temperature* 10°C to 39°C; *Mean annual rainfall* 1012 mm.

FLORA: According to Landsat imagery, most of the sanctuary consists of open forest (crown cover density 10% to 40%), scrub and blank areas, and a small patch of coffee/cardamom plantations. Adjoining areas north and west of the sanctuary are devoid of forest cover, while to the south, in Tamil Nadu, there is a mixture of dense and open forests [Landsat 1986]. The forest types found in the sanctuary include Moist Teak Bearing Forests 3B/C1, Dry Deciduous Scrub Forests 5/DS1, and Western Sub-tropical Hill Forests 8A/C2 [Rodgers and Panwar 1988q]. There are also patches of evergreen (shola) forests (exact type not known). The weeds *Lantana* and Eupatorium *Chromolaena odorata* are spreading in the sanctuary. Plantations of Silver oak *Grevillea robusta*, Teak *Tectona grandis*, and softwoods such as *Artocarpus* spp. and *Cidrella* spp., have been carried out by the Territorial Wing of the Forest Department. The area covered by these is not known.

Trees and *Other Plants:* (see Appendix A)

FAUNA: (see Appendix B)

OCCURRENCE AND CONTROL OF DISEASE: No disease or epidemic has been reported from the sanctuary. The Territorial Wing of the Forest Department carries out a vaccination programme. About 75% of livestock in the sanctuary villages have been inoculated [qa '91]. The nearest veterinarian is at Lokkanahalli, two km away [tp].

OTHER FACTORS AFFECTING HABITAT: Fires are frequent, reportedly started by NWFP collectors to clear the undergrowth. Fire counter measures are taken by the authorities.

WATER RESOURCES: The sanctuary is well endowed with water resources. Almost 200 ha. of the Suvarnavati Reservoir portudes into the south-eastern part of the sanctuary [tp]. Apart from the Suvarnavati river, which is perennial, there are at least 27 major and several smaller perennial and seasonal streams [tp]. The area is also studded with 31 small lakes (of which 6 are perennial), ten springs [tp], and eight artificial water holes [q1].

BUDGET: Rs. 7.72 lakhs for 1987–88, and Rs. 14.73 lakhs for 1988–89.

MANAGEMENT PLAN: A Management Plan for 1990–1995 was drawn up in December, 1989 by the Deputy Conservator of Forests (WL), Mysore and has been submitted for approval [mp].

PERSONNEL: One DCF ,One ACF, five RFOs, 19 Forester, 65 Forest Guards and 17 ministerial staff, 53 drivers, watchers, mahouts.

EQUIPMENT: 26 wireless sets (stationary), mobile walkie talkies , 49 guns, 22 rifles, one revolver, four jeeps, one car , two lorries , and one van.

RESEARCH AND MONITORING: None.

COMMUNITY INTERACTION PROGRAMMES; None

HUMAN PRESENCE

Rights and Leases: None. However, the Biligiri Rangaswami Temple is situated in an enclosure in the north-eastern part of the sanctuary. A religious yatra is carried out through the sanctuary to this temple, twice every year, in January and April. About 150 people visit the temple every day [fv]. On religious occasions the daily figure rises to about 500. Villagers are permitted collection of fallen or elephant-damaged timber, for firewood, and collection of NWFP, from the entire area [mp].

Habitation; There are 27 villages inside the sanctuary* with a population of 3,450 [qa '91]. Some of these are in enclosures, legally excluded from the sanctuary in the notification [notif 1]. In addition, there are at least five temporary settlements [tp]. There are also six camping sites [tp], which are illegally occupied by shepherds [mp]. In the adjacent area, there are 34 villages with a population of 53,840.

Grazing: Illegal grazing by about 1500 heads of livestock takes place in the sanctuary [mp, fv].

Offenses and Illegal Activities: It has been reported that poaching from across the Tamil Nadu border takes place [mp], and there is illegal grazing.

Tourism: No visitor records have been maintained by the sanctuary. A large number of people come in for pilgrimage.

Use by Other Government Agencies: The PWD for maintaining roads (283 ha), and the Karnataka State Electricity Board for transmission lines (15 ha), are two other government agencies using the sanctuary.

There is a large stone quarry situated south of the Suvarnavati reservoir, and an iron ore mine north of Punjur [tp]. Both are now inoperative [qa '91].

Some of the villages inside have dispensaries and post offices, and there is a police outpost at the Biligiri Rangaswami Temple complex [tp].

INFORMATION FOR VISITORS: The best period for visiting is between October and May, when the weather is dry. Accommodation is available in several resthouses in and around the sanctuary [tp].

NGOs/INDIVIDUALS ASSOCIATED: None.

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* Survey of India toposheets for the area depict 35 villages (including two with the same name, Punjur) inside the sanctuary (see map). This discrepancy could not be resolved.

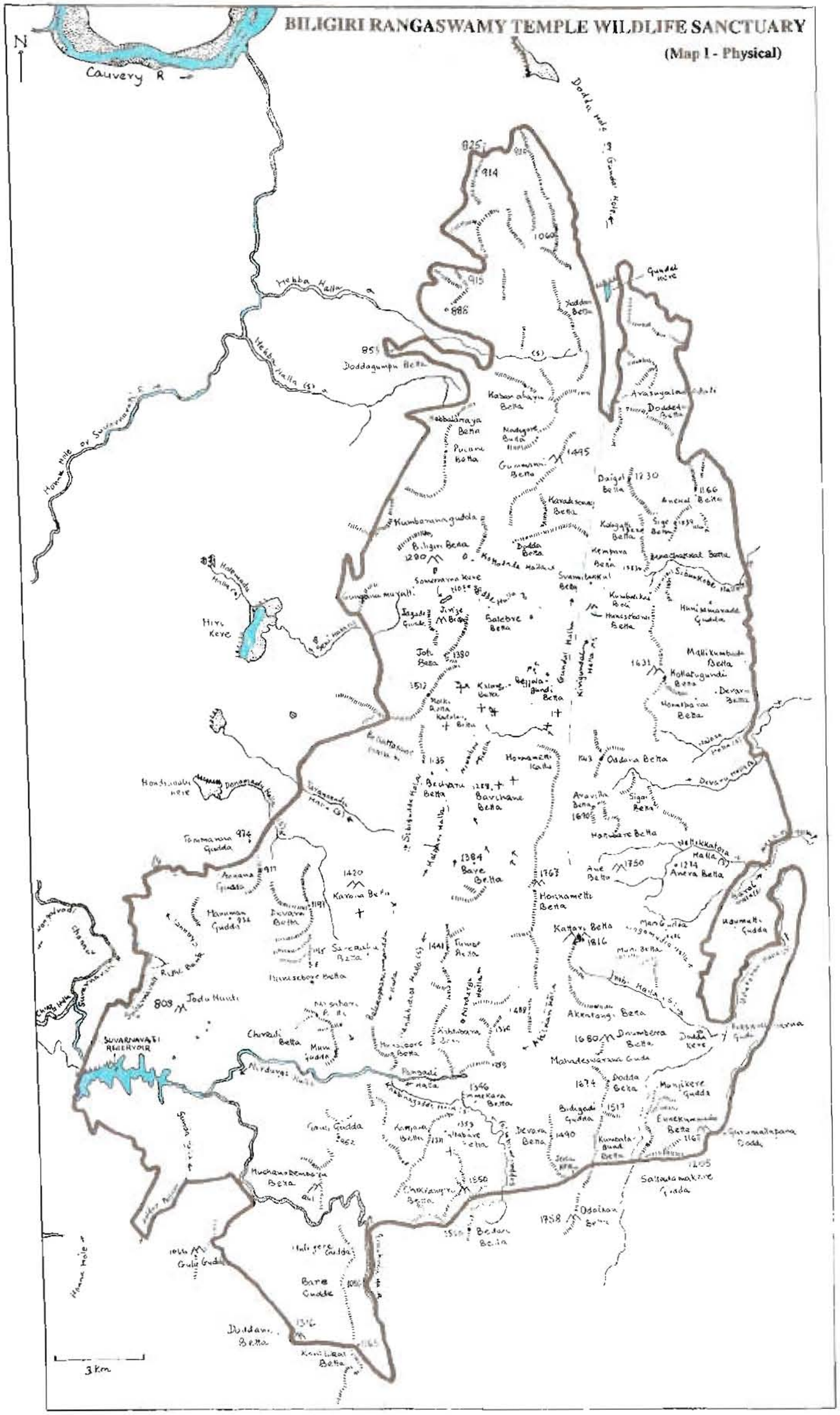
CONTACT ADDRESSES:

1) Conservator of Forests
Wildlife South Circle,
Aranya Bhavan,
Mysore-570004
Karnataka

2) Local in-charge:
Deputy Conservator Of Forest
Wildlife Division
Chamarajnagar -571313
Mysore Dist.
Karnataka

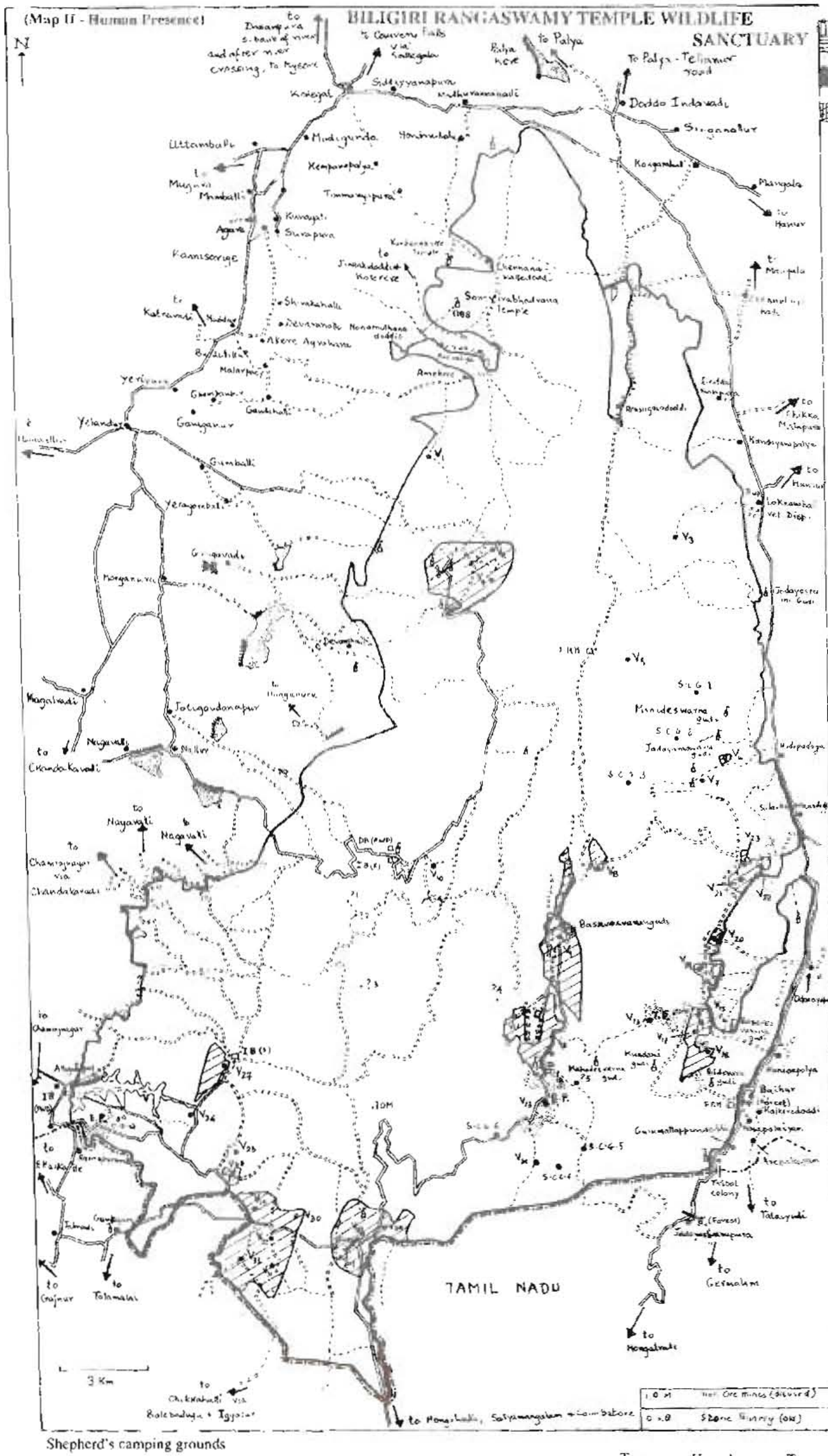
BILIGIRI RANGASWAMY TEMPLE WILDLIFE SANCTUARY

(Map I - Physical)



(Map II - Human Presence)

BILIGIRI RANGASWAMY TEMPLE WILDLIFE SANCTUARY



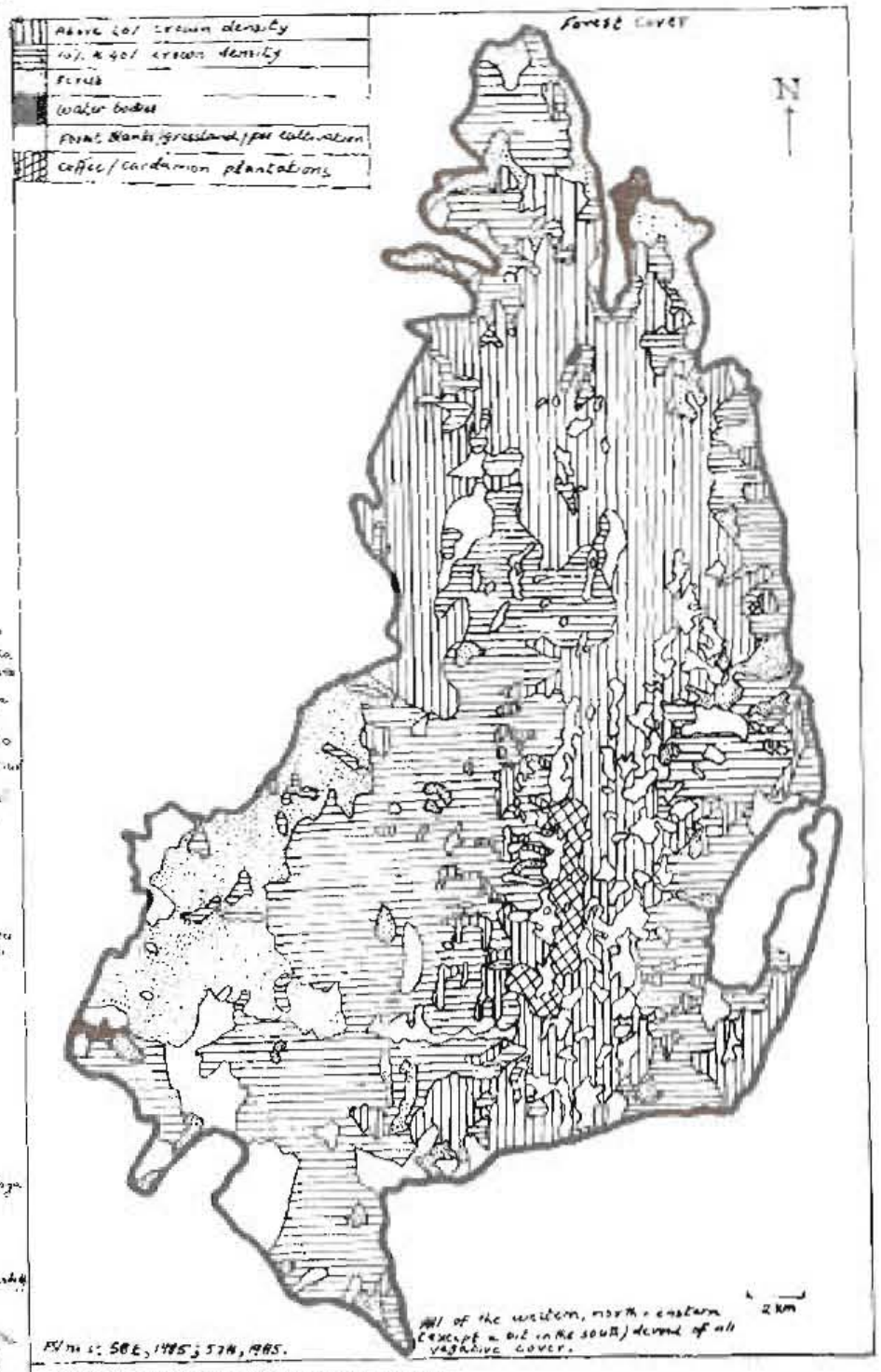
Shepherd's camping grounds

S.C G1 Kolattugundidoddi
S.C G2 - Maddalamavudoddi
S.C.G3 - Nellikatirudoddi
S.C.G4 - Devarapatti
S.C.G5 - Jodukarahatti (Shown permanent habitation tp)
S.C G6 - Kabbinagodde

Temporary Huts shown on Tp

1 Durugure
2 Gaunbavi
3 Sannakanu
4 Kanikere

Note The description of the Southern part of the Eastern boundary in the sanctuary notification is unclear and inconsistent, this portion has therefore been drawn on the basis of the map sent by the wildlife authorities



FV no 1: SBE, 1985; 57A, 1985.

Village or Hamlets inside the Sanctuary

V1- Puranipodu
V2- Guruvinagadde
V3- Sigebetta
V4- Giriyana colony
V5- Adugulpodu
V6- Arekadavu
V7- Avanimulai
V8- Emmerhatti
V9- Honnametti Coffee Estate
V10- Kinnare colony
V11- Biligiri Rangan coffee Estate
V12- Bedguli
V13- Ulurugud
V14- Bibipodu
V15- Jogiyuru
V16- Gundimalam
V17- Kelagaluru
V18- Hosapadu
V19- Hiriambala
V20 Uganimulai
V21- Eragapalaiyam
V22- Uddatti
V23- Mavattur
V24- Mundudainatta
V25 Chikka Mudahalli
V26- Kullur
V27- Budipadaga
V28 Dodda Mudahalli
V29 Banavadi
V30- Bejjalapalya
V31- Irainapur
V32- Kdipalya
V33- Mukanapalya
V34 Punjur (same name given in two locations)
V34- Punjur

APPENDIX A

Trees [mp, qa, fv]

Acacia catechu
Acacia ferruginea
Acacia latronum
Acacia leucophloea
Acacia polycantha
Aegle marmelos
Ailanthus excelsa
Alangium salvifolium
Albizia amara
Albizia lebbeck
Albizia odoratissima
Albizia procera
Anacardium occidentale
Annona squamosa
Anogeissus latifolia
Artocarpus heterophyllus
Azadirachta indica
Bauhinia malabarica
Bauhinia racemosa
Bischofia javanica
Bombax ceiba
Boswellia serrata
Bridelia crenulata
Buchanania axillaris
Butea monosperma
Caesalpinia mimosoides
Canarium strictum
Capparis grandis
Careya arborea
Casearia elliptica
Cassia fistula
Cassia siamea
Casuarina equisetifolia
Chloroxylon swietenia
Cidrella spp.
Cinnamomum spp.
Cochlospermum religiosum
Dalbergia latifolia
Dalbergia paniculata
Dalbergia sissoo
Derris indica
Dillenia pentagyna
Diospyros melanoxylon
Diospyros montana
Elaeocarpus serratus
Elaeocarpus spp.
Elaeodendron glaucum
Ervatamia spp.
Erythrina suberosa
Eucalyptus spp.
Ficus amplissima
Ficus benghalensis
Ficus drupacea
Ficus exasperata
Ficus racemosa
Ficus religiosa
Ficus virens
Flacourtia indica
Gardenia spp.
Gardenia gummifera
Gardenia latifolia
Gardenia turgida
Garuga pinnata
Givotia rottleriformis
Glochidion neilgherrense
Gmelina arborea
Gmelina asiatica
Gordonia obtusa
Grewia tiliifolia
Grevillea robusta
Haldina cordifolia
Hardwickia binata
Hopea parviflora
Hopea wightiana
Hydnocarpus laurifolia
Hymenodictyon spp.
Kydia calycina
Lagerstroemia microcarpa
Lagerstroemia spp.
Lophopetalum wightianum
Maclura cochinchinensis
Madhuca longifolia
Mallotus philippensis
Miliusa tomentosa
Morinda tomentosa
Naringi crenulata
Pavetta indica
Persea macrantha
Pithecellobium dulce
Pterocarpus marsupium
Radermachera xylocarpa
Santalum album
Sapindus emarginatus
Schleichera oleosa

Shorea roxburghii
Stereospermum spp.
Syzygium cumini
Tamarindus indica
Tectona grandis
Terminalia alata
Terminalia arjuna
Terminalia bellirica
Terminalia chebula
Toona ciliata
Vitex altissima
Vitex negundo
Wendlandia spp.
Xeromphis spinosa
Ziziphus mauritiana

Other Plants *[mp, qa, fv]*

Abrus precatorius
Abutilon indicum
Acacia caesia
Acacia sinuata
Adhatoda zeylanica
Agave americana
Agave sisalana
Argyreia cymosa
Argyreia thomsonii
Aristolochia indica
Asparagus racemosus
Azima tetracantha
Bambusa arundinacea
Caesalpinia bonduc
Caesalpinia mimosoides
Calotropis gigantea
Canthium parviflorum
Capparis divaricata
Cassia auriculata
Cassia tora
Celastrus paniculatus
Cipadessa baccifera
Clematis gouriana
Cordia dichotoma
Curcuma longa
Curcuma spp.
Cymbopogon citratus
Dendrocalamus strictus
Dendrophthoe falcata
Dodonaea viscosa
Entada phaseoloides
Erythroxylum spp.
Euphorbia antiquorum
Euphorbia tirucalli
Gloriosa superba
Gnidia glauca
Grewia damine
Helicteres isora
Hemidesmus indicus
Imperata cylindrica
Indigofera atropurpurea
Ixora arborea
Jasminum arborescens
Jasminum spp.
Jatropha curcas
Ochna obtusata
Ocimum sanctum
Opuntia elatior
Phoenix humilis
Phoenix spp.
Pterolobium hexapetalum
Securinega leucopyrus
Securinega spp.
Sorghum nitidum
Spatholobus parviflorus
Ventilago madraspatana
Wattakaka volubilis
Zingiber officinale
Ziziphus glabrata
Ziziphus oenoplia
Ziziphus rugosa

A fuller list of 825 plant species appears in Kammathy, Rao, and Rao (1967).

APPENDIX B

FAUNA

Mammals [ql, mp]

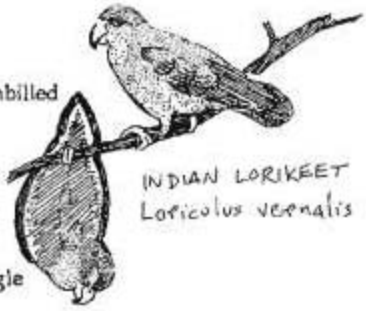
Antelope, Fourhorned
Bear, Sloth
Boar, Indian Wild
Cat, Jungle
Deer, Barking
Deer, Mouse
Deer, Spotted
Dog, Indian Wild
Elephant, Indian
Fox, Indian
Gaur
Hare, Indian
Jackal
Langur, Common
Leopard
Leopard-cat
Macaque, Bonnet
Mongoose, Common
Mongoose, Small Indian
Otter, Common
Porcupine, Indian
Sambar
Squirrel, Common Giant Flying
Squirrel, Indian Giant
Squirrel, Threestriped Palm
Tiger
Wolf

Reptiles [mp]

Keelback, Green
Python, Indian
Snake, Common Wolf
Snake, Rat

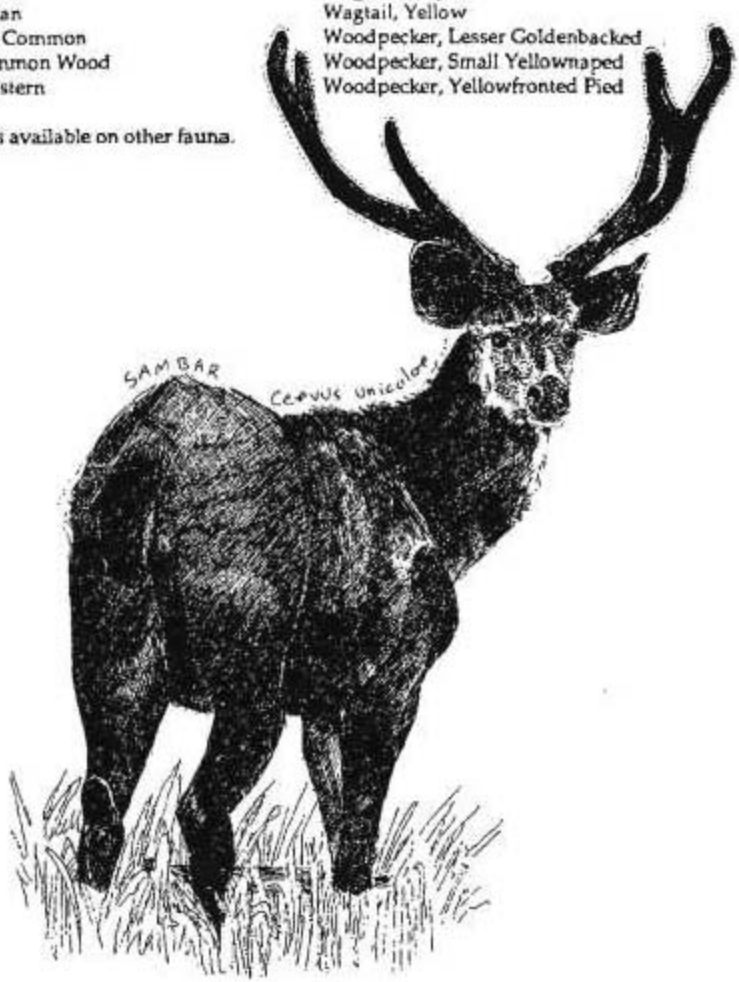
Birds [ql, mp]

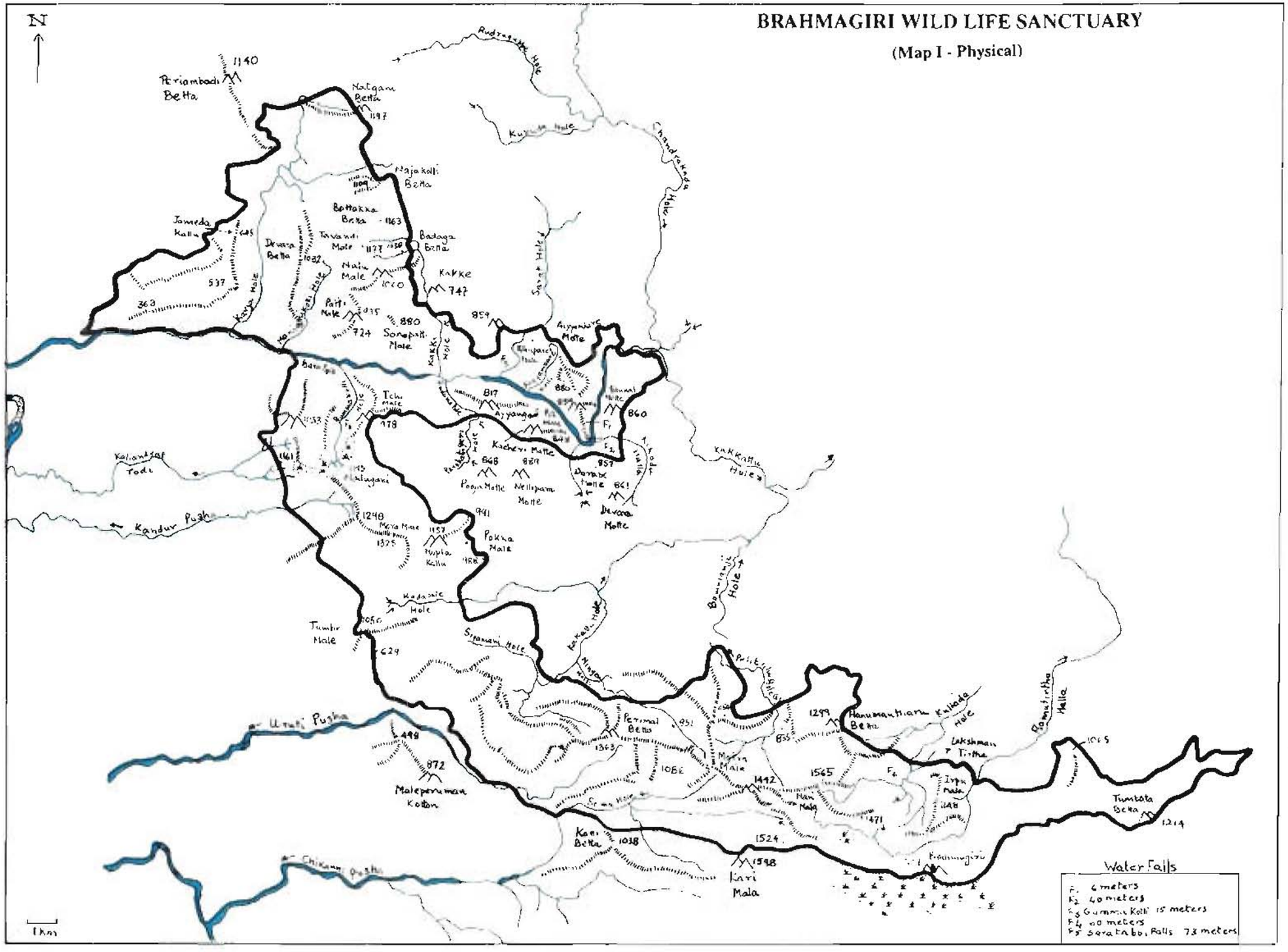
Babbler, Common
Babbler, Jungle
Babbler, Spotted
Barbet, Crimsonbreasted
Barbet, Small Green
Bee-eater, Bluebearded
Bee-eater, Bluetailed
Bee-eater, Green
Bulbul, Redvented
Bulbul, Redwhiskered
Chloropsis, Goldfronted
Crow, House
Crow, Jungle
Cuckoo, Pied Crested
Cuckoo-shrike, Blackheaded
Cuckoo-shrike, Large
Darter
Dove, Emerald
Dove, Indian Ring
Dove, Little Brown
Dove, Spotted
Drongo, Ashy
Drongo, Black
Drongo, Whitebellied
Duck, Whitewinged Wood
Eagle, Crested Serpent
Eagle, Greyheaded Fishing
Egret, Cattle
Egret, Large
Egret, Little
Egret, Smaller
Flowerpecker, Tickell's
Flycatcher, Nilgiri
Flycatcher, Paradise
Flycatcher, Redbreasted
Hawk-cuckoo, Common
Hoopoe
Junglefowl, Grey
Kingfisher, Lesser Pied
Kite, Blackwinged
Kite, Brahminy
Kite, Pariah
Lorikeet, Indian
Magpie-Robin
Malkoha, Small Grenbilled
Martin, Dusky Crag
Minivet, Scarlet
Minivet, Small
Myna, Common
Myna, Hill
Myna, Jungle
Nightjar, Indian Jungle

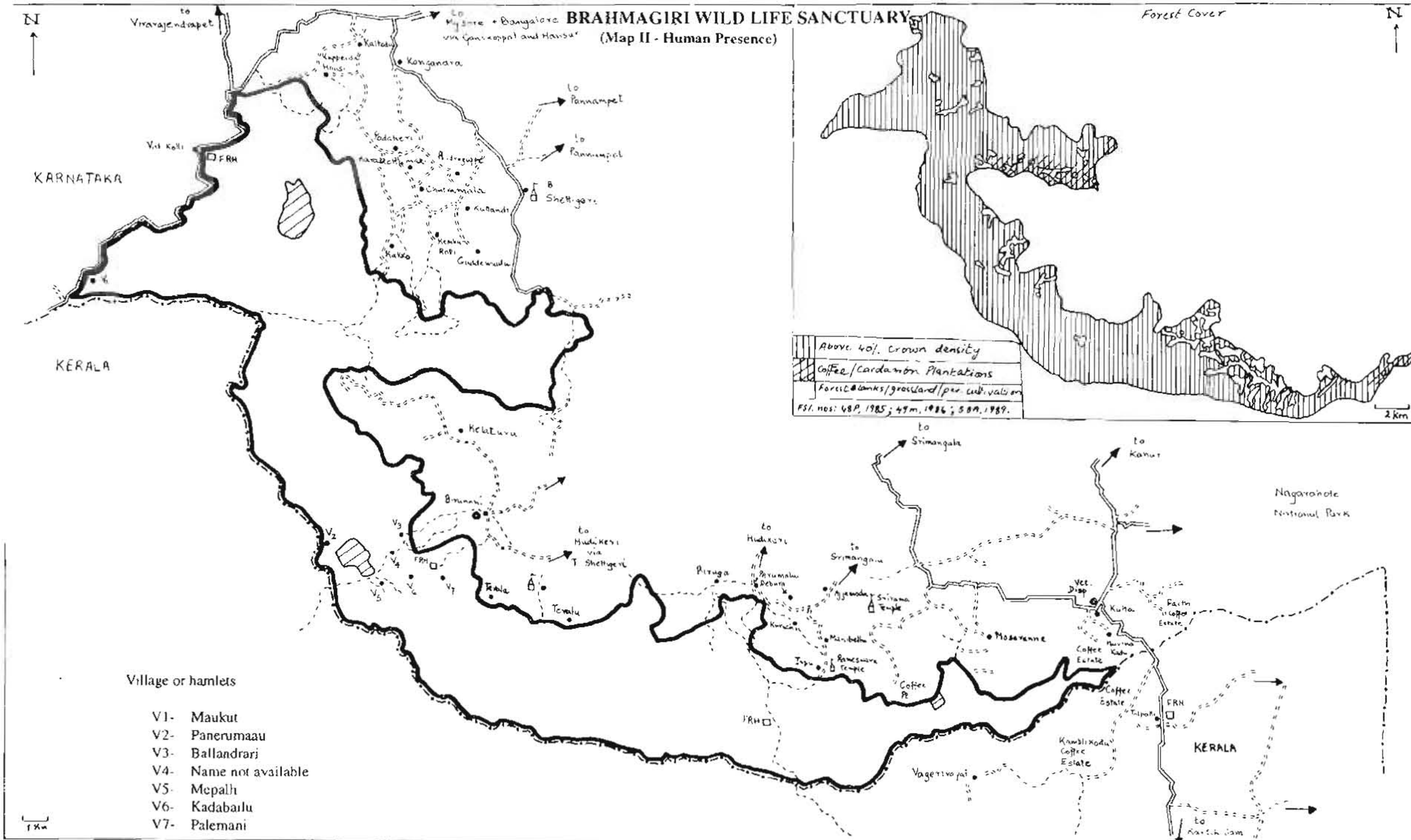

INDIAN LORIKEET
Loriculus vernalis

Nuthatch, Velvetfronted
Oriole, Blackheaded
Owl, Brown Fish
Owl, Collared Scops
Owl, Mottled Wood
Owlet, Jungle
Parakeet, Blossomheaded
Parakeet, Bluewinged
Parakeet, Roseringed
Partridge, Grey
Peafowl, Common
Pigeon, Blue Rock
Pigeon, Green
Quail, Common
Robin, Indian
Roller, Indian
Sandpiper, Common
Shrike, Common Wood
Skylark, Eastern
Sparrow, House
Sparrow-hawk
Spurfowl, Red
Sunbird, Purple
Swallow-shrike, Ashy
Swift, Large Brownthruated Spinetail
Swift, Palm
Teal, Common
Teal, Cotton
Teal, Lesser Whistling
Tit, Grey
Tit, Yellowcheeked
Tree Pie, Indian
Trogon, Malabar
Wagtail, Grey
Wagtail, Yellow
Woodpecker, Lesser Goldenbacked
Woodpecker, Small Yellownaped
Woodpecker, Yellowfronted Pied

No information is available on other fauna.




BRAHMAGIRI WILD LIFE SANCTUARY
(Map I - Physical)
N
Periambadi Betta
Natgani Betta
Majakolli Betta
Bettakka Betta
Tavandi Mote
Batagabetta
Jamedakallu
Dewara Betta
Nala Mole
Kakke
Sampaji Mole
Kakki Mole
Tchi Mote
Kaliandsaf Todu
Kandur Pudu
Kakkachi Holes
Pokka Mote
Tumbir Mote
Kadanur Hole
Sigamani Hole
Kakati Hole
Bommanahalli Hole
Ramatirtha Halla
Lakshman Tirtha
Tumbata Betta
Kari Betta
Kari Mala
Maleperuman Kotta
Water Falls
F1 6 meters
F2 40 meters
F3 Gummi Kolli 15 meters
F4 40 meters
F5 Sarataboi Falls 73 meters
1km



BRAHMAGIRI WILD LIFE SANCTUARY
(Map II - Human Presence)

Note - While enclosures have been marked on the Survey of India toposheets, there is no mention of them in the Sanctuary Notification. Their status and function remains unclear.

BRAHMAGIRI WILD LIFE SANCTUARY

Situated in the picturesque region of southern Kodagu (Coorg), this sanctuary has tropical evergreen and semi-evergreen shola forests characteristic of the Western Ghats ecosystem. It is separated from the Rajiv Gandhi National Park near its eastern boundary by coffee plantations. The southern boundary adjoins Kerala State.

LEGAL STATUS: Declared a sanctuary on June 5, 1974, vide notification AFD 50 FWL 74. [notif]. Previously a Reserve Forest. Legal procedures have been completed, though the precise date of the final notification is unclear [Appayya, Pers. Comm. 1994]

AREA AND ZONING: 18,129 ha. (181.29 sq km). Of this, 6000 ha forms the core zone and remaining 12,129 ha the buffer zone. Zonation is yet to be accurately demarcated on the ground [qa '91], and has not been depicted on the map.

LOCATION: *District* Kodagu or Coorg; *Latitudinal range* 11°55'49" to 12°08'57" N [tp]; *Longitudinal range* 75°44'12" to 76°03'22" E [tp]; *Nearest town* Virarajendrapet, (7 km) [tp]; *Nearest railhead* Mysore (40 km) [tp]; *Nearest airport* Mysore (40 km) [tp].

APPROACHES: From Bangalore to Shrirangapatana (116 km), on to Hunsur (45 km) [map], Gonikoppal (10 km) and on to sanctuary (17.5 km) [tp]. From Mangalore to Madikeri (105 km), then to Virarajendrapet (30 km) [SOI 1981] and 7 km on to sanctuary [tp].

TOPOGRAPHY AND CLIMATE: *Altitude* 100 m [q1] to 1607 m, the highest point being Brahmagiri in the south-eastern edge of the sanctuary. [tp]; *Temperature* 17.8°C [qa '91] to 32°C; *Mean annual rainfall* 4000 mm [Rodgers and Panwar, 1988q].

FLORA: According to Landsat imagery, the entire sanctuary has a crown density of over 40% [Landsat 1986]. The forest types to be found include West Coast Tropical Evergreen Forest 1A/C4 and West Coast Semi-evergreen Forest 2A/C2 [Rodgers and Panwar, 1988q], interspersed with grasslands. No information has been made available on plantations. The weeds Eupatorium *Chromolaena odorata* and *Lantana* are present.

Trees [mp, q1]

Acrocarpus fraxinifolius
Aglaia anamallayana
Albizia lebbeck
Artocarpus gomezianus
Artocarpus heterophyllus
Artocarpus hirsutus
Bauhinia racemosa
Canarium strictum
Carallia brachiata
Cinnamomum verum
Diospyros ebenum
Dipterocarpus indicus
Elaeocarpus tuberculatus
Kingiodendron pinnatum
Mesua ferrea
Naringi crenulata
Palaquium ellipticum
Pandanus fascicularis
Polyalthia fragrans
Toona ciliata
Vateria indica
Vitex negundo
Xanthophyllum flavescens

Other Plants [mp, q1]

Calamus spp.
Chromolaena odorata
Leea indica
Ochlandra scriptoria
Ochlandra travancorica
Strobilanthes spp.
Tarenna asiatica

FAUNA:

Mammals [ql, mp]

Bear, Sloth
Boar, Indian Wild
Cat, Jungle
Deer, Mouse
Deer, Spotted
Dog, Indian Wild
Elephant, Indian
Gaur
Hare, Indian
Langur, Common
Leopard
Leopard-cat
Loris, Slender
Macaque, Liontailed
Otter, Clawless
Pangolin, Indian
Porcupine, Indian
Sambar
Tiger

Reptiles [ql, mp]

Monitor, Common Indian
Keelback, Green
Snake, Rat

Birds [fv]

Babbler, Blackheaded
Babbler, Quaker
Barbet, Small Green
Bittern, Tiger
Bulbul, Black
Bulbul, Redwhiskered
Bulbul, Yellowbrowed
Crow-pheasant
Crow, Jungle
Flycatcher, Greyheaded
Kite, Blackwinged
Nuthatch, Velvetfronted
Piculet, Speckled
Pipit, Nilgiri
Quail, Jungle/Painted? Bush
Swift, Alpine
Warbler, Broadtailed Grass
Warbler, Fantail
Wagtail, Large Pied

No information is available on other fauna.

OCCURRENCE AND CONTROL OF DISEASE: No disease amongst flora and fauna has been reported [qa '91]. A vaccination programme is undertaken for livestock from both sanctuary and adjoining villages, with approximately 70 percent of the livestock having been vaccinated. Livestock are also checked before passing through the sanctuary. The nearest veterinarian is located at Birunani, 2 km away [tp].

OTHER FACTORS AFFECTING HABITAT: Forest fires occur on grasslands, causing shrinkage of shola forests. Fire counter measures are taken by the sanctuary authorities.

WATER RESOURCES: There are ten major perennial streams, 12 large seasonal ones, and several perennial and seasonal ones [tp].

BUDGET: In 1989–90, Rs. two lakhs. No separate budget prior to this. In 1990–91, Rs. 2.50 lakhs.

MANAGEMENT PLAN: A Management Plan for the period 1990–1995, was drawn up in December 1989 by the Deputy Wildlife Warden, Mysore, and has been submitted for approval [mp].

PERSONNEL: The sanctuary is in the overall change of the DCF Wildlife Division ,Hunsur, assisted by one ACF, one RFO, four Foresters, six Forest Guards, three Forest watchers and one clerk.

EQUIPMENT: One wireless set and six guns.

RESEARCH AND MONITORING: None.

COMMUNITY INTERACTION PROGRAMMES: None.

HUMAN PRESENCE:
Rights and Leases: None.

Habitation: There are seven settlements inside the sanctuary, with a population of 2000 [qa '91]. There are at least 46 villages in the surrounding areas [tp], with a population of 25,000 [qa '91].

Grazing: Illegal grazing is reported to take place in the sanctuary.

Offences and Illegal Activities: There is an unrecorded number of offences related to grazing, poaching, and setting fire [fv].

Tourism: Tourism is not yet allowed, and no visitor records are maintained.

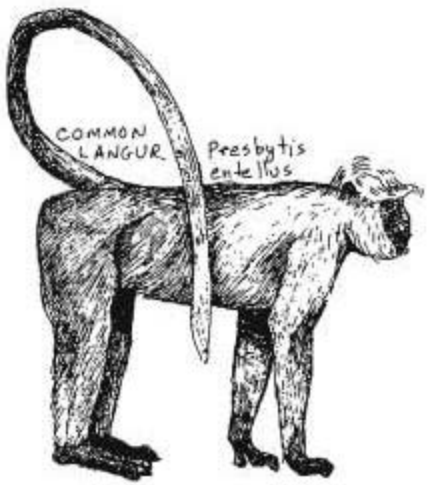
INFORMATION FOR VISITORS: The sanctuary is not yet open to tourists. There is a single manned entry point from the north. The Srirama temple and Irpu Mala, the source of the Lakshmana Tirtha river, are places of cultural importance adjoining the eastern boundary of the sanctuary.

NGOs/INDIVIDUALS ASSOCIATED: There is one Honorary Wildlife Warden, Shri P.M. Aiyanna (please see Appendix 8 for address) [qa '91].

CONTACT ADDRESSES:

1) Deputy Conservator of Forests
Hunsur Wildlife Division
Hunsur P.O. - 571105
Mysore Dist.
Karnataka

2) Local in-charge:
Range Forest Officer
Wildlife Range
Srimangala - 571217
Kodagu Dist
Karnataka



* On a query regarding the activities of villagers settled inside the sanctuary, the wildlife authorities responded that these are restricted to their settlements and do not constitute rights/leases/concessions. The status of these activities remains unclear.

CAUVERY WILDLIFE SANCTUARY

The river Cauvery, which forms the boundary of a major part of this sanctuary, also gives it its name. There are a number of low hills, rocky knobs and outcrops along the length of the Cauvery, which also has several waterfalls along its stretch. The central and eastern parts of the sanctuary are well-forested. Hogenekal falls ('smoking rock' in Kannada), Mekedatu ('Goat's leap') and Sangam (the point where the Arkavati river joins the Cauvery) are of cultural, historical and tourist interest [tp]. The eastern part of the sanctuary is completely bounded by Tamil Nadu. Recently constituted, the area is yet to receive wildlife staff and other inputs.

LEGAL STATUS: Declared a sanctuary on 14 January, 1987, vide Notification number AHFF 4 FWL 87 [Notif].

AREA AND ZONING: 51,051.50 ha. (510.515 sq. km.) [notif]. There is no zoning [qa].

LOCATION: *Districts* Mysore, Bangalore, Mandya [tp]; *Latitudinal range* 11°56'49" to 12°21'26"N [tp]; *Longitudinal range* 77°15'15" to 77°46'55"E [tp]; *Nearest town* Devarahalli (11 km) [tp]; *Nearest railhead* Kollegal (26.5 km) [tp]; *Nearest airport* Mysore (100 km) [SOI 1986] and Bangalore (86.5km) [tp].

APPROACHES: From Bangalore (86.5 km) [tp] via Harohalli and Kanakapura [State map]. Alternately from Mysore (100 km) [tp] via Malavalli and Halaguru, or via Narsipur and Kollegal [SOI 1986, tp].

TOPOGRAPHY AND CLIMATE: *Altitude* about 125 m [q1] to 1514 m, the highest point being Ponnachi Betta in the south-eastern edge of the sanctuary [tp]; *Temperature* No information; *Mean annual rainfall* 830 mm.

FLORA: According to Landsat imagery, the north-western part of the sanctuary contains a large area of forest blanks, grassy land, open cultivation. The rest of the sanctuary consists roughly equally of closed forest (crown density of 40% and above), and open forest (crown density of 10% to 40%) [Landsat 1986]. There is no information on what forest types are found here. Plantation work was carried out in 1988–89 (76.75 ha), 1989–90 (115.00 ha), and 1990–91 (47.40 ha). In 1989–90, bamboo was cut for pulp and other industrial use.

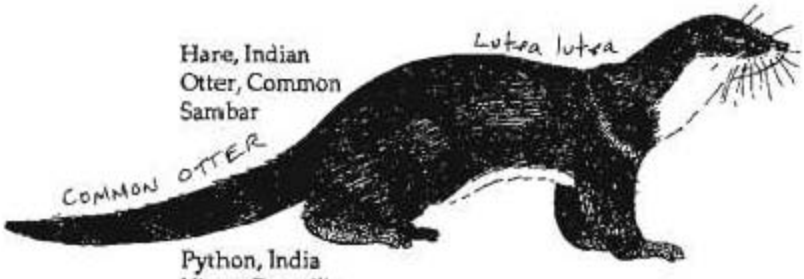
FAUNA:

Mammals
- Boar, Indian Wild
- Deer, Spotted
- Elephant
- Hare, Indian
- Otter, Common
- Sambar

Birds
- Junglefowl, Grey

Reptiles
- Cobra, Common
- Crocodile, Marsh
- Krait, Banded
- Python, India
- Viper, Russell's

Fish
- *Tor* spp



OCCURRENCE AND CONTROL OF DISEASE: No diseases among flora and fauna have been reported. Livestock entering the sanctuary are occasionally checked for vaccination. Approximately 75% of the livestock in villages adjacent to the sanctuary have been vaccinated.

OTHER FACTORS AFFECTING HABITAT: No information.

WATER RESOURCES: The Palar River forms a small part of the Southern boundary of the sanctuary and at the south east corner of the sanctuary, Palar joins the Stanley Reservoir on the Cauvery river. The Cauvery forms a part of the sanctuary's northern boundary and continues down the eastern side. There are several other perennial and seasonal streams flowing through the sanctuary [tp].

MANAGEMENT PLAN: Prepared by the D.C.F.(WL), Mysore, in December 1989, for the period 1990 to 1995, and submitted for approval.

BUDGET: In 1992–93, Rs. 23.30 lakhs have been allocated.

PERSONNEL: There is one DCF and three RFO's.

EQUIPMENT: Arms and ammunition, wireless sets , cameras, and binoculars have been provided.

RESEARCH AND MONITORING: No information is available.

COMMUNITY INTERACTION PROGRAMMES: Nature camps are proposed.

HUMAN PRESENCE:

Rights and Leases: Cutting of bamboo for pulp and other industrial uses is allowed (though it is not clear to whom this is permitted). No other information is available.

Habitation: There are 14 villages in the sanctuary, seven of them in five enclosures* [tp]. The population inhabiting these settlements is not known. In addition, there are 29 shepherds' camping grounds inside the sanctuary. A number of villages surround the sanctuary [tp], but details of their number and population are not available.

Offences and Illegal Activities: No information available.

Tourism: Two stretches of the river are leased out to the Wildlife Association of South India and M/S Jungle Resorts. Both encourage Mahseer (*Tor* spp.) fishing as a sport. International competitions are also held. Lodges and resorts have been build for the convenience of the tourists.

Use by other Government Agencies : No information.

INFORMATION FOR VISITORS: Entry into the sanctuary is prohibited from May to November because of the monsoons. December to February are the best months to visit the sanctuary because sighting of wildlife is good at this time. Entry is prohibited from 6pm to 6am. Hogenekal Falls, Mekedatu and Sangam are of cultural, historical and tourist interest. A rest house adjacent to the sanctuary's northern border is open only to officials [QA, tp].

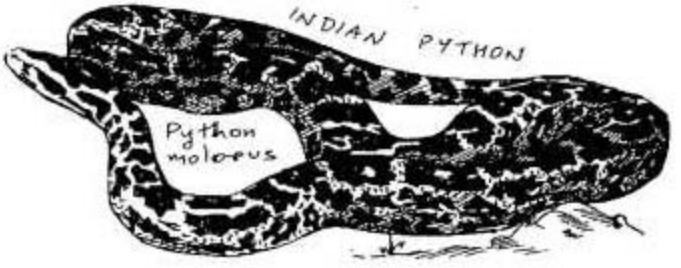
NGOs/INDIVIDUALS ASSOCIATED: Wild Life Association of South India.

* The sanctuary notification gives the enclosures in terms of area in hectares. The specific location of these enclosures is not given . Two areas are mentioned in the notification, one of which lies in the Basava Betta State Forest and the other in the Madeswara Reserved Forest. It is not clear if these two areas refer to an enclosure each,or if each area given includes more than one enclosure in that particular SF/RF. The overlap, if any , between the notified enclosures and those shown on the map (taken from SOI toposheets) is therefore unclear.

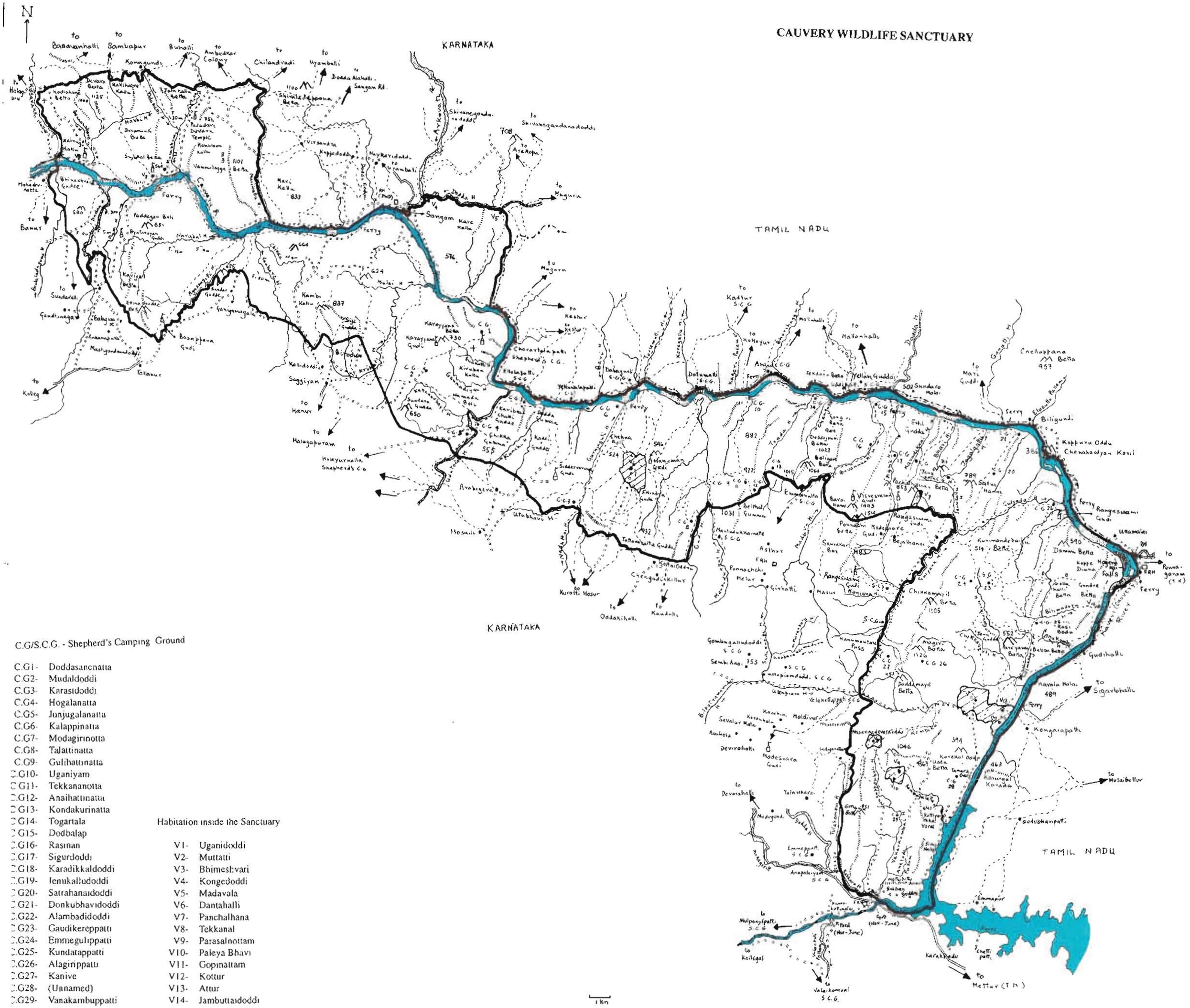
CONTACT ADDRESSES:

1) Divisional Conservator of Forests
Kaveri Wildlife Division
J.C. Extension
Kanakpura-562117
Karnataka

2) Local in-charge:
Wildlife Range Forest Officer
M.M. Hills
Kollegal Taluk
Mysore-570001
Karnataka



CAUVERY WILDLIFE SANCTUARY

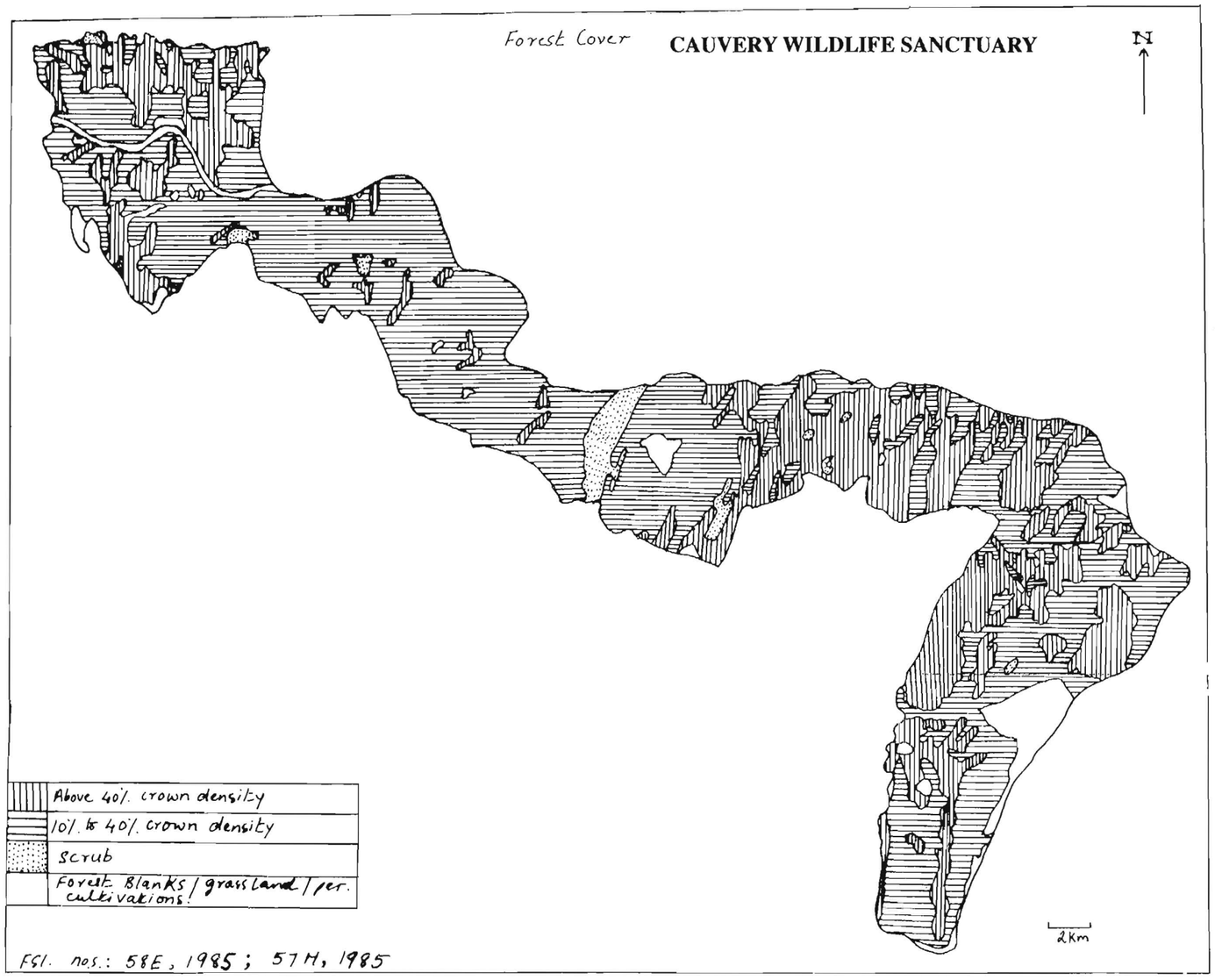


C.G/S.C.G. - Shepherd's Camping Ground

C.G1- Doddasanenatta
C.G2- Mudaldoddi
C.G3- Karasidoddi
C.G4- Hogalanatta
C.G5- Junjugalanatta
C.G6- Kalappinatta
C.G7- Modagirinotta
C.G8- Talattinatta
C.G9- Gulihattinatta
C.G10- Uganiyam
C.G11- Tekkananotta
C.G12- Anaihattinatta
C.G13- Kondakurinatta
C.G14- Togartala
C.G15- Dodbalap
C.G16- Rasinan
C.G17- Sigurdoddi
C.G18- Karadikkaldoddi
C.G19- Jenukalludoddi
C.G20- Satrahanaidoddi
C.G21- Donkubhavidoddi
C.G22- Alambadidoddi
C.G23- Gaudikereppatti
C.G24- Emmegulippatti
C.G25- Kundatappatti
C.G26- Alagirippatti
C.G27- Kanive
C.G28- (Unnamed)
C.G29- Vanakambuppatti

Habitation inside the Sanctuary

V1- Uganidoddi
V2- Muttatti
V3- Bhimeshvari
V4- Kongedoddi
V5- Madavala
V6- Dantahalli
V7- Panchalhana
V8- Tekkanal
V9- Parasalnottam
V10- Paleya Bhavi
V11- Gopinattam
V12- Kottur
V13- Attur
V14- Jambuttaidoddi


Forest Cover
CAUVERY WILDLIFE SANCTUARY
N
Above 40% crown density
10% to 40% crown density
Scrub
Forest Blanks / grassland / per. cultivations
2Km
FSI. nos.: 58E, 1985; 57H, 1985

DANDELI WILDLIFE SANCTUARY

Once the largest sanctuary in Asia, the area was drastically reduced in 1988 to make it more manageable, and to omit areas with great industrial, mining, and other pressures. Simultaneously, an area of 250 sq. km. in the southern part of the sanctuary was constituted the Anshi National Park. Forestry operations are still being carried out in the sanctuary. Bhagwan Mahavir Sanctuary in Goa adjoins the sanctuary's western border. Earlier this area was a Reserved Forest.

LEGAL STATUS: Declared a wildlife sanctuary vide Bombay Government Resolution No. WLP 1957 dated 10 May, 1956 [notif]. It is not known under which Act/Rules the notification was issued—perhaps the Bombay Wild Animals and Birds Protection Act of 1951, which was in operation then [mp].

AREA AND ZONING: 83,415.71 ha. (834.16 sq. km.). Area at the time of declaration in 1956, was 20,433 ha. This was enlarged to 5,79,207.00 ha in 1975 vide notification No. AFD 52 FWL 74, dated 8 January 1975. In 1988 the area was reduced to 83,415.71 ha vide Notification No FFD 150 FWL 81 dated 31 August/1st September, 1988 [notif]. There is no zoning [q1] and the boundaries apparently have not been properly verified in the field [8th Pl. Prop.], but the boundary demarcation is in progress.

LOCATION: *District* North Kanara; *Latitudinal range* 14°52'18" to 15°18'43" N [tp]; *Longitudinal range* 74°15'07" to 74°43'58" E [tp]; *Nearest town* (Apart from Kumbharvada and Ambikanagara, inside the sanctuary) Ganeshgudi, adjacent to the sanctuary [tp]; *Nearest railhead* Dandeli (9.5 km) [tp]; *Nearest airport* Belgaum (85 km) [tp].

APPROACHES: From Bangalore to Dharwad by rail (479 km) [St. map], to Alnavar (31 km), then to Dandeli (31.5 km) and on to the sanctuary (9.5 km) [tp] or Dharwad to Dandeli by road (57 kms) and on to the sanctuary (9.5 km).

TOPOGRAPHY AND CLIMATE: *Altitude* About 100 m to 1049 m, the highest point being Sido Dongar in the west [tp]; *Temperature* 13°C to 37°C; *Mean annual rainfall* 1750 mm [8th. Pl. Prop.]

FLORA: Landsat imagery shows crown density of 40% and above in and around the sanctuary, except for some blanks around village sites [Landsat 1986]. Forest types found in the sanctuary include Southern Moist Mixed Deciduous Forests 3B/C2 and West Coast Semi-Evergreen Forests 2A/C2 [qa]. In 1987–88, 10 ha. were planted with fruit-yielding trees, including Jamun *Syzygium cumini*, Mango *Mangifera indica*, Jackfruit *Artocarpus heterophyllus*, Indian gooseberry *Embelica officinalis*, and Guava *Psidium guajava*, to improve wildlife habitat. There are also plantations of Teak *Tectona grandis*, *Eucalyptus*, Bamboo and Silver oak *Grevillea robusta* [tp]. Eupatorium *Chromolaena odorata*, *Lantana camara*, and *Parthenium* are problem weeds in the area [8th. Pl. Prop., q1].

Trees and *Other Plants*: see Appendix 1

FAUNA:

Mammals [q1]

- Deer, Barking
- Deer, Mouse
- Deer, Spotted
- Elephant, Indian
- Fox, Indian
- Gaur
- Hare, Indian
- Jackal
- Langur, Common
- Langur, Nilgiri
- Leopard
- Leopard-cat
- Pangolin, Indian
- Porcupine, Indian
- Sambar
- Squirrel, Common Giant Flying
- Tiger
- Wolf

Reptiles [q1, 8th. Pl. Prop.]
Cobra, King
Crocodile, Marsh
Python, Indian

Birds: See Appendix 2
No information is available on other fauna. Species considered locally threatened include the Mouse deer, and the King cobra.

OCCURRENCE AND CONTROL OF DISEASE: No information is available regarding the occurrence of diseases or epidemics amongst flora and fauna. The Veterinary Department at Dandeli (9.5 km away) occasionally meets the vaccination requirement of livestock in the area [8th. Pl. Prop.].

OTHER FACTORS AFFECTING HABITAT: Fire is reportedly a common feature. Often, due to the hilly terrain, it is difficult to control, but some fire counter measures have been taken [8th. Pl.Prop., map].

WATER RESOURCES: Originating in the north-western part of the sanctuary, the Kalinadi River circles around it to form its eastern boundary, and then cuts through its south-eastern portion [tp]. The Kaneri River originates at the south-western corner of the sanctuary, and runs along or near its southern boundary, before entering and joining the Kalinadi River. There are several other perennial rivers, and several seasonal and some perennial streams. The reservoir of the Kalinadi River forms the north-eastern boundary [tp]. In addition there are at least seven water tanks in the sanctuary, and one spring [map].

BUDGET: Budgetary expenditure incurred during 1987–88 was Rs. 2.03 lakhs, and during 1988–89, Rs. 4.71 lakhs.

MANAGEMENT PLAN: None

PERSONNEL: One DCF, one ACF, six RFO's and other field staff. The sanctuary is in the overall charge of the DCF (WL), Dandeli.

EQUIPMENT: Two rifles/guns and two pairs of binoculars.

RESEARCH AND MONITORING: None

COMMUNITY INTERACTION PROGRAMMES: Film/slide shows are held for students, throughout the year and particularly during Wildlife Week. A nature camp for children has been set up adjacent to the north-eastern part of the sanctuary, at Kulgi [8th. Pl. Prop., map].

HUMAN PRESENCE:

Rights and Leases: Quarrying for manganese is done by private contractors in a section of the sanctuary. While the government has issued instructions to stop this, the contractors have gone to the Bangalore High Court, where the matter is pending. Local people have the right to religious yatra.

Habitation: There are 248 villages inside the sanctuary [tp],* as well as hamlets of the semi-nomadic Gowlie tribals [8th. Pl. Prop.]. In addition, the towns of Ambikanagara and Kumbharvada are located inside. The total population inside is about 50,000 [q1]. The surrounding areas are almost completely inhabited, except towards the Goan side [tp], but village and population figures were not available.

* The northern boundary of the sanctuary is bounded by the Kalinadi Reservoir. However, the relevant toposheets do not have the reservoir marked on them, so this boundary has been drawn on the basis of a map sent to us by the wildlife authorities and the Forest Survey of India maps. Hence the number of villages which fall within the northern boundary of the sanctuary is not clear.

Grazing: 50,000 cattle and 20,000 goats [8th. Pl. Prop.] graze illegally within the sanctuary.

Offences and Illegal Activities: About 81 ha. of the sanctuary has been encroached upon [8th. Pl. Prop.] by local people. The matter is under process. Two offences were recorded in 1988, one a case of illegal hunting and the other unspecified. It has been separately reported that many cases of poaching are recorded every year [8th. Pl. Prop.]. As the boundaries of the sanctuary have not been verified in the field, there are complications regarding the booking of offences [8th. Pl. Prop.].

Tourism: No information is available on the number of visitors to the sanctuary.

Use by Other Government Agencies: The sanctuary is used by the by the Electricity Department for transmission lines (631 ha.), by the Mining Department (1424.53 ha.), and by the PWD for roads (62 ha.) [qa '91]. The Karnataka Forest Department (Territorial Wing) extracts timber and fuelwood from the entire area. Sale of NWFP has been stopped.

Miscellaneous: One person was killed by an elephant in 1993. Livestock killing by tiger and panther are reported. Crop destruction by elephants is common. Compensation for attacks by wildlife on humans, crops and livestock has been paid but details are not available.

INFORMATION FOR VISITORS: Permits are required for entry by vehicles, and only certain parts of the sanctuary (area not specified) are open to tourists on foot and in vehicles. These include the Ulvi temple, Kawla caves, Sykes and Nagzari viewpoints, the Vineholli rapids and Synther waterfall. Entry is prohibited between 6 pm and 6 am. Dandeli is best visited between September and May when it is dry, and wildlife viewing is easy. There are several resthouses and tourist lodges inside and on the outskirts of the sanctuary, providing accommodation to overnight visitors.

Floodlights are allowed for wildlife viewing. Proposals for the future include the construction of a resthouses and watchtowers, and providing vehicles for tourists. A museum and library are to be set up, and slide shows and wildlife films to be screened.

NGOs/INDIVIDUALS ASSOCIATED: Involvement is reported, but details are not available.

CONTACT ADDRESSES:

Divisional and local in charge:
Deputy Conservator of Forests
Wildlife Preservation Sub-division
Dandeli-581325
Uttara Kannada Dist.
Karnataka

APPENDIX 1

Trees [q1, qa, 8th. Pl. Prop.]

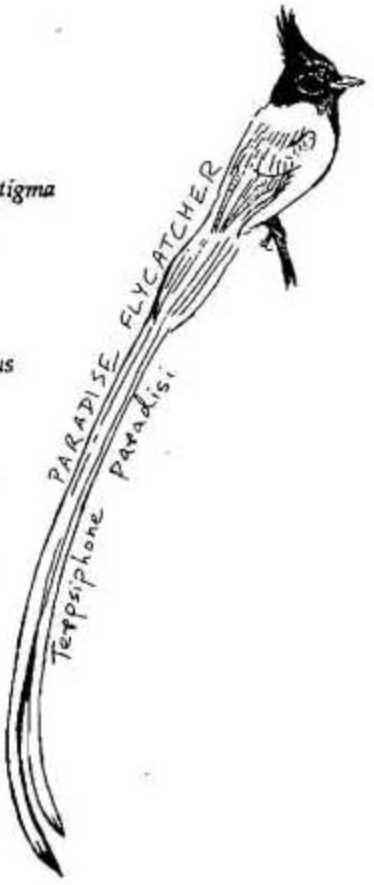
Acacia catechu
Acacia ferruginea
Acacia polycantha
Actinodaphne angustifolia
Ailanthus excelsa
Ailanthus triphysa
Albizia amara
Albizia lebbeck
Alseodaphne semecarpifolia
Anacardium occidentale
Annona squamosa
Anogeissus latifolia
Anthocephalus chinensis
Aporosa lindleyana
Arenga wightii
Artocarpus gomezianus

Artocarpus heterophyllus
Artocarpus hirsutus
Atalantia monophylla
Atalantia racemosa
Bauhinia racemosa
Bombax ceiba
Boswellia serrata
Butea monosperma
Calophyllum apetalum
Calophyllum elatum
Canarium strictum
Careya arborea
Caryota urens
Cassia fistula
Cassia siamea
Casuarina equisetifolia
Chukrasia velutina
Cinnamomum verum
Dalbergia latifolia
Derris indica
Dillenia indica
Dillenia pentagyna
Diospyros melanoxylon
Dysoxylum malabaricum
Emblica officinalis
Ervatamia heyneana
Erythrina suberosa
Erythrina variegata
Ficus benghalensis
Ficus drupacea
Ficus nervosa
Ficus racemosa
Ficus religiosa
Ficus tsjahela
Ficus virens
Flacourtia montana
Garcinia gummi-gutta
Garcinia indica
Garcinia morella
Gardenia gummifera
Gmelina arborea
Grewia tiliifolia
Hardwickia binata
Holigarna arnottiana
Holigarna grahamii

Other Plants [q1, qa, 8th. Pl. Prop.]
Acacia pennata
Acacia sinuata
Adhatoda zeylanica
Hopea parviflora
Hopea wightiana
Hymenodictyon obovatum
Lagerstroemia microcarpa
Lagerstroemia speciosa
Linociera malabarica
Macaranga peltata
Madhuca longifolia
Mangifera indica
Memecylon umbellatum
Meyna laxiflora
Mimusops elengi
Mitragyna parvifolia
Murraya koenigii
Persea macrantha
Pterocarpus marsupium
Santalum album
Sapindus emarginatus
Saraca asoca
Schleichera oleosa
Semecarpus anacardium
Spondias acuminata
Spondias pinnata
Sterculia guttata
Sterculia urens
Strychnos nux-vomica
Syzygium caryophyllatum
Syzygium cumini
Tamarindus indica
Tectona grandis
Terminalia alata
Terminalia arjuna
Terminalia bellirica
Terminalia chebula
Terminalia paniculata
Tetrameles nudiflora
Trema orientalis
Vateria indica
Vitex altissima
Vitex negundo
Wrightia tinctoria
Xeromphis spinosa
Xylia xylocarpa
Zanthoxylum rhetsa

Allophylus cobbe
Ardisia solanacea
Asparagus racemosus

Baliospermum montanum
Bambusa arundinacea
Barleria spp.
Bauhinia vahlii
Calamus pseudo-tenuis
Calamus rheedii
Calamus rotang
Callicarpa tomentosa
Calycopteris floribunda
Carissa carandas
Cassia tora
Chromolaena odorata
Clerodendrum viscosum
Combretum latifolium
Crotalaria spp.
Cryptolepis buchananii
Curcuma aromatica
Curcuma spp.
Datura stramonium
Dendrocalamus strictus
Desmodium spp.
Dioscorea spp.
Diploclisia glaucescens
Dodonaea viscosa
Elsholtzia fruticosa
Entada phaseoloides
Flemingia spp.
Gloriosa superba
Glycosmis mauritiana
Helicteres isora
Holarrhena antidysenterica
Indigofera spp.
Ipomoea spp.
Ixora arborea
Ixora brachiata
Lantana camara
Leea crispa
Leea indica
Loranthus spp.
Millettia racemosa
Mimosa pudica
Murraya paniculata
Ochlandra talbotii
Oxytenanthera monostigma
Parthenium spp.
Rauvolfia serpentina
Sida rhombifolia
Smilax zeylanica
Solanum giganteum
Spatholobus parviflorus
Strobilanthes spp.
Tinospora cordifolia
Urena lobata
Ventilago denticulata
Vitis spp.
Wagatea spicata
Woodfordia fruticosa
Ziziphus oenoplia
Ziziphus rugosa

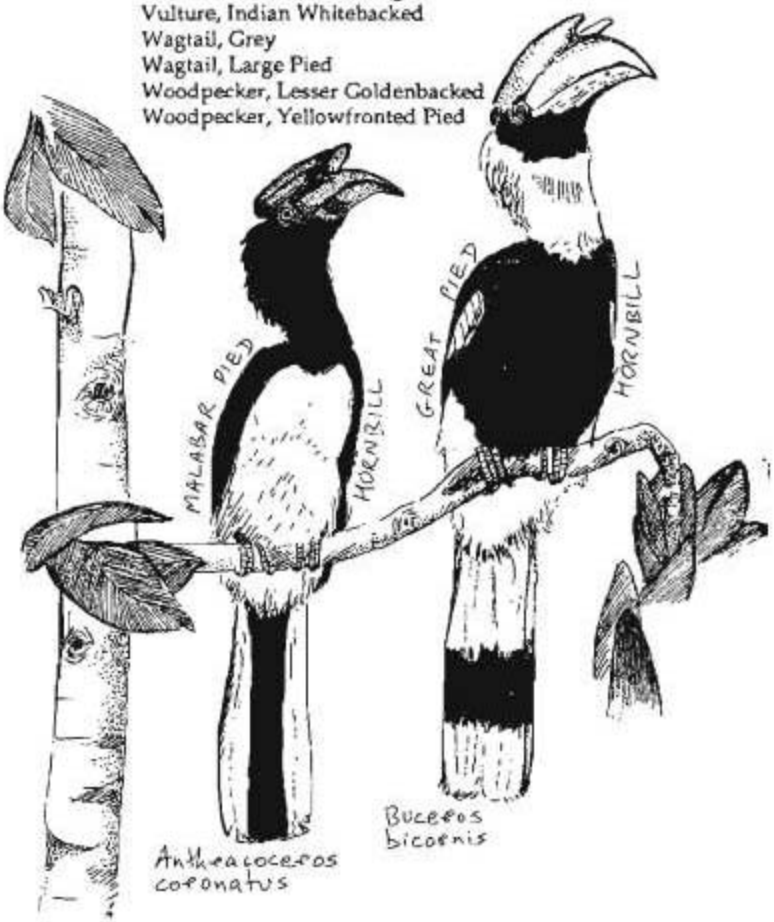


APPENDIX 2

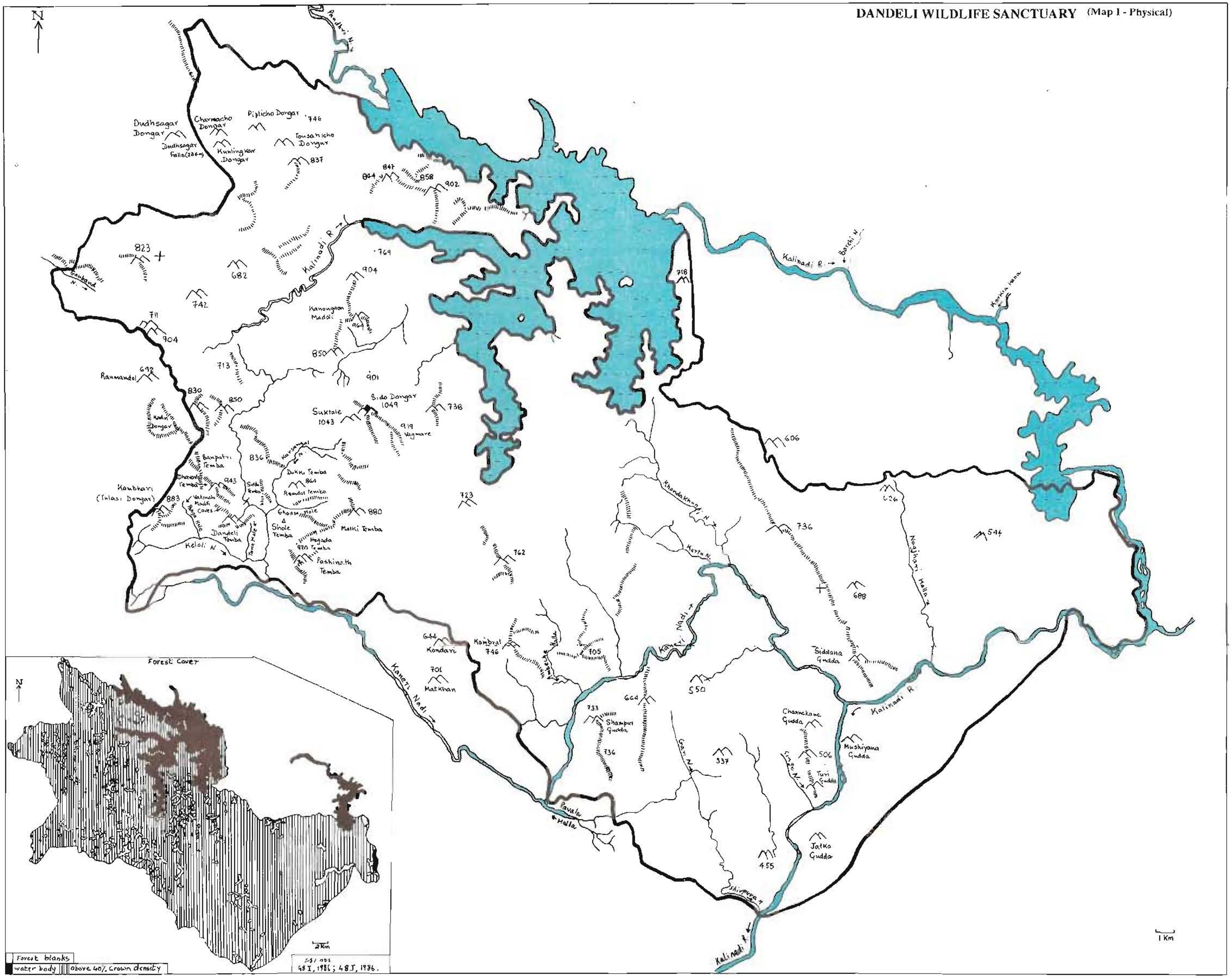
Birds [8th. Pl. Prop., Neginhal 1971]

Babbler, Jungle
Bee-eater, Bluetailed
Bee-eater, Green
Bulbul, Redvented
Bulbul, Redwhiskered
Chat, Pied Bush
Chloropsis, Goldfronted
Coot
Cormorant, Little
Crow, House
Crow, Jungle
Crow-pheasant
Cuckoo-shrike, Large
Darter
Dove, Spotted
Drongo, Greater Racket-tailed
Drongo, Whitebellied
Duck, Spotbill
Flowerpecker, Tickell's
Flycatcher, Paradise
Grebe, Little
Heron, Pond
Hoopoe
Hornbill, Great Pied
Hornbill, Malabar Grey
Hornbill, Malabar Pied

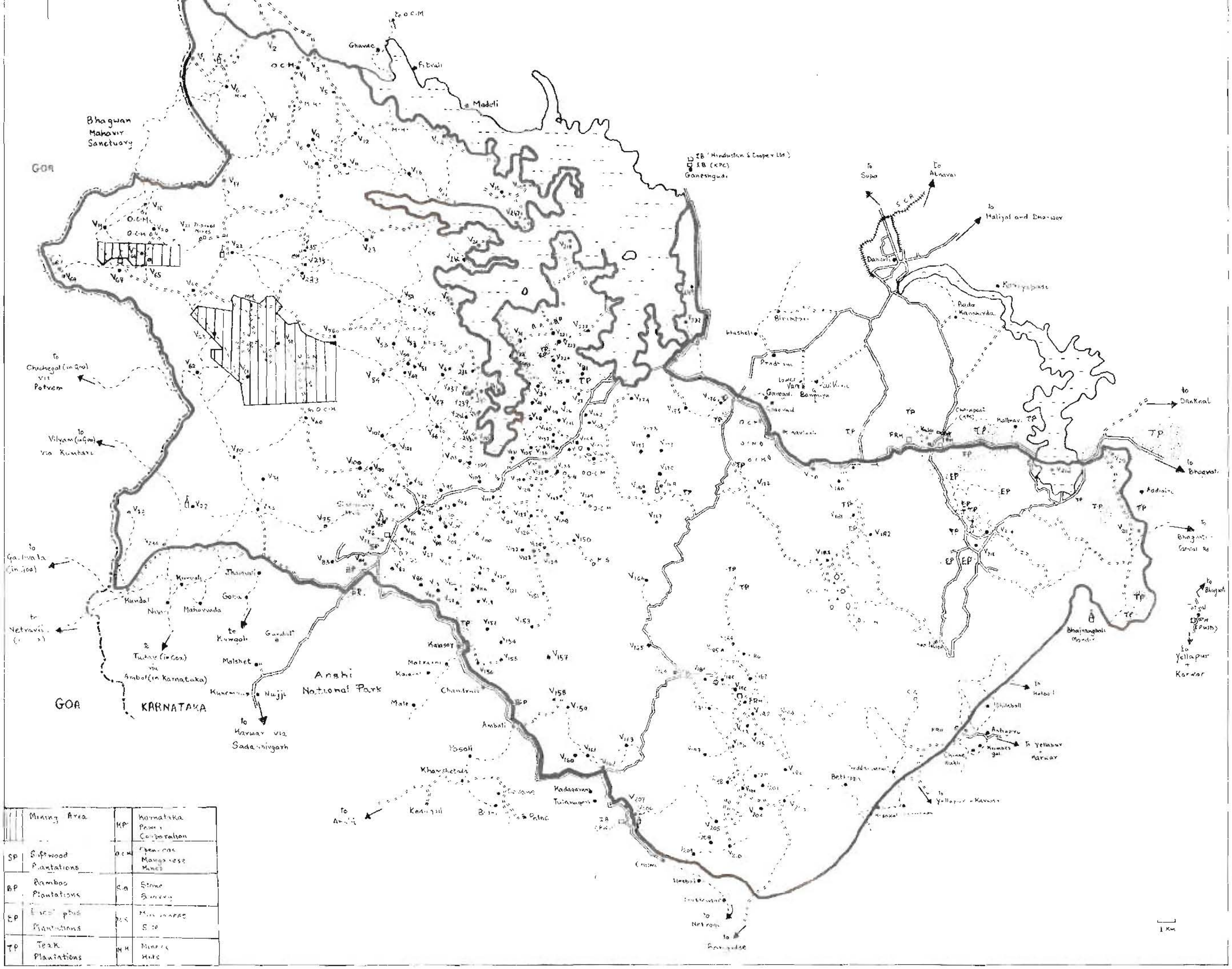
Iora, Common
Jacana, Bronzewinged
Junglefowl, Grey
Kingfisher, Common
Kingfisher, Whitebreasted
Koel
Lapwing, Redwattled
Lorikeet, Indian
Magpie-Robin
Martin, Dusky Crag
Minivet, Scarlet
Minivet, Small
Moorhen, Purple
Myna, Brahminy
Myna, Common
Nightjar, Common Indian
Nuthatch, Chestnutbellied
Nuthatch, Velvetfronted
Oriole, Blackheaded
Oriole, Golden
Parakeet, Alexandrine
Parakeet, Blossomheaded
Parakeet, Roseringed
Peafowl, Common
Pigeon, Green
Pipit, Paddyfield
Quail, Jungle Bush
Roller, Indian
Shikra
Sunbird, Purple
Sunbird, Purplerumped
Sunbird, Yellowbacked
Swallow
Swallow, Redrumped
Swallow, Wiretailed
Swift, House
Tailorbird
Tern, Indian River
Thrush, Malabar Whistling
Vulture, Indian Whitebacked
Wagtail, Grey
Wagtail, Large Pied
Woodpecker, Lesser Goldenbacked
Woodpecker, Yellowfronted Pied



DANDELI WILDLIFE SANCTUARY (Map 1 - Physical)



DANDELI WILDLIFE SANCTURAY (Map II - Human Presence)



VILLAGES LOCATED WITHIN THE SANCTUARY

V_1 - Thana
V_2 - Ivali
V_3 - Phopavadi
V_4 - Vaynlvadi
V_5 - Tadki
V_6 - Kuve
V_7 - Ghat Kumang
V_8 - Haim
V_9 - Nimani
V_{10} - Klnang
V_{11} - Kakarda
V_{12} - Tsosu
V_{13} - Kalasla
V_{14} - Nimble
V_{15} - Shemba
V_{16} - Viral
V_{17} - Soliya
V_{18} - Maira
V_{19} - Kanne
V_{20} - Gauladevi
V_{21} - Devasthan
V_{22} - Karanja
V_{23} - Vageli
V_{24} - Dangarvada
V_{25} - Talsoda
V_{26} - Mirveli
V_{27} - Ambedkar
V_{28} - Pate
V_{29} - Maisoda
V_{30} - Titgal
V_{31} - Panjeli
V_{32} - Phonda
V_{33} - Sangli
V_{34} - Nagoda
V_{35} - Wayhal
V_{36} - Rayada
V_{37} - Samjoyda
V_{38} - Kailvada
V_{39} - Patrevada
V_{40} - Parkarvada
V_{41} - Kalgadda
V_{42} - Vadi (Magali)
V_{43} - Mandar
V_{44} - Paisoda
V_{45} - Palli
V_{46} - Karanjoyda
V_{47} - Kasba
V_{48} - Bulbulla
V_{49} - Kartoli
V_{50} - Maharvao
V_{51} - Kumbarmati
V_{52} - Dhamankunang
V_{53} - Gudakavadi
V_{54} - Kartoli
V_{55} - Marli
V_{56} - Kudvadi
V_{57} - Kanongaon
V_{58} - Kalpa
V_{59} - Shirold
V_{60} - Terali
V_{61} - Bamnia
V_{62} - Patagudi
V_{63} - Shisai
V_{64} - Dudalimala
V_{65} - Diggi
V_{66} - Namsi
V_{67} - Medukhan
V_{68} - Bondeli
V_{69} - Ghotingi
V_{70} - Kusavali
V_{71} - Atgaon
V_{72} - Keloli
V_{73} - Parnevada
V_{74} - Karsangal
V_{75} - Teloli
V_{76} - Kumbharvada
V_{77} - Vagegali
V_{78} - Meda
V_{79} - Boyvada
V_{80} - Kumbharpala
V_{81} - Karsangala
V_{82} - Vallavada
V_{83} - Modarli
V_{84} - Talsoda
V_{85} - Hupkarni
V_{86} - Godshet
V_{87} - Gokalde
V_{88} - Kunang
V_{89} - Malange
V_{90} - Gundre
V_{91} - Navar
V_{92} - Kiryatel
V_{93} - Tale
V_{94} - Nangal
V_{95} - Maspond
V_{96} - Dudhgali
V_{97} - Vagbund
V_{98} - Deriyl
V_{99} - Bindi
V_{100} - Kutval
V_{101} - Mudlye
V_{102} - Sosarvada
V_{103} - Piregali
V_{104} - Shiregali
V_{105} - Dhonapa
V_{106} - Devall
V_{107} - Amnarade
V_{108} - Chittevada
V_{109} - Badkodi
V_{110} - Rupdal
V_{111} - Chapoli
V_{112} - Shgripati
V_{113} - Sukiari
V_{114} - Malanglnu
V_{115} - Halakumbi
V_{116} - Rumbadishet
V_{117} - Virangul
V_{118} - Maharvada
V_{119} - Bandegoli
V_{120} - Sachevada
V_{121} - Vagaspadi
V_{122} - Benavada
V_{123} - Palasvada
V_{124} - Karambala
V_{125} - Nanevada
V_{126} - Tinnekrana
V_{127} - Malkarni
V_{128} - Chikalambe

V129 - Birada
V130 - Ghottki
V131 - Digalamba
V132 - Bhamanvadi
V133 - Nagarbhavi
V134 - Santri
V135 - Fatagali
V136 - Mulavali
V137 - Talavadu
V138 - Bidoli
V139 - Sonarvada
V140 - Ramanvadi
V141 - Hegadabhumi (x)
V142 - Chittegali
V143 - Amrutpali
V144 - Joidu
V145 - Desalvada
V146 - Goudevaola
V147 - Kapali
V148 - Avali
V149 - Vagtari
V150 - Kambeli
V151 - Mendra
V152 - Kambral
V153 - Bali Shidoli
V154 - Jamgolo
V155 - Darshet
V156 - Ambadgali
V157 - Shidoli
V158 - Sange
V159 - Korakanne
V160 - Male
V161 - Kalane
V162 - Honakola
V163 - Chaper
V164 - Maradal
V165 - Kaneri
V166 - Aurli
V167 - Desaivadi
V168 - Hudasa
V169 - Bamanvadi
V170 - Godegali
V171 - Madatal
V172 - Satali
V173 - Nagari
V174 - Chapoli
V175 - Sangve
V176 - Patoli
V177 - Mandurli (Kalamkhar)
V178 - Virnoli
V179 - Phanasol
V180 - Patilvada
V181 - Sangirli
V182 - Amgaon
V183 - Shiroli Miners Camp
V184 - Balgan
V185 - Gund
V186 - Jamali
V187 - Balagar
V188 - Nandigadda
V189 - Bosapura
V190 - Chinchkhand
V191 - Goligadde
V192 - Yarmukh
V193 - Dabgar
V194 - Shivali
V195 - Kombe
V196 - Karkmane
V197 - Bhedasgadde
V198 - Tamange
V199 - Godpol
V200 - Batuipal
V201 - Kattegadde
V202 - Kalamkhand
V203 - Holgadde
V204 - Hannaguli
V205 - Jodigadde
V206 - Ulvi
V207 - Vadkal
V208 - Shivapura
V209 - Kumri
V210 - Kodaginittal
V211 - Vingholi
V212 - Gutti
V213 - Kegdal
V214 - Jambga
V215 - Ambikanagara (town)
V216 - Melegali
V217 - Dabeli
V218 - Mudle
V219 - Mulkandi
V220 - Vatamba
V221 - Mogulkbanda
V222 - Kunong
V223 - Dhupevadi
V224 - Bhomgal
V225 - Male
V226 - Pattara
V227 - Desai Birodd
V228 - Chapevadi
V229 - Bhimagali
V230 - Birodu
V231 - Chandra
V232 - Bapheli
V233 - Siddadongar
V234 - Gauligar
V235 - Sulavali
V236 - Kukre
V237 - Piskare
V238 - Navre
V239 - Tamsa
V240 - Nagaya
V241 - Mander
V242 - Paisoda
V243 - Paisoda
V244 - Phanaskhand
V245 - Mayaset
V246 - Chardivadi
V247 - Hatkhamba
V248 - Kodli

GHATAPRABHA BIRDS SANCTUARY

A small bird sanctuary comprising of a section of the Ghataprabha river, and over 20 islands in it. A weir and dam near Dhupdhal have created a reservoir upstream, with a large island in its midst. This is the only part of the sanctuary which is actively managed [Note undated]. The Gokak waterfalls located in the eastern portion of the sanctuary are a major tourist attraction. The entire area of the sanctuary is under the control of the PWD [Note undated], and is surrounded by agricultural fields and wastelands [Landsat 1986].

LEGAL STATUS: Declared a sanctuary vide notification AFD 57 FWL 74 on June 17, 1974.

AREA AND ZONING: 2978.50 ha (29.78 sq. km.) [notif]. No zoning.

LOCATION: *District* Belgaum; *Latitudinal range* 16°10'36" to 16°14'46" N [tp]; *Longitudinal range* 74°40'13" to 74°50'00" E [tp]; *Nearest town* Gokak (0.5km) [tp]; *Nearest railheads* Gokak Road (2km), Ghataprabha (3.5km) [tp]; *Nearest airport* Belgaum (83 km) [dir].

APPROACHES: From Belgaum via Vannur to Gokak (82km) [dir, Road Map]. From Bangalore to Dharwad (410km), then via Manoli (45km) to Gokak (50km) [SOI 1981].

TOPOGRAPHY AND CLIMATE: *Altitude* 3 m [q1] to 614 m, the highest point being on an island in the sanctuary's western portion [tp]; *Temperature* 10°C to 32°C; *Mean annual rainfall* 784.7 mm.

FLORA: While most of the islands that comprise the sanctuary are barren, and dry, one of them, west of Dhupdal lake is swampy, and another has a good growth of *Acacia nilotica* and bamboo *Bamboosa bambo*. [qa '91], both introduced species. *Acacia nilotica* and Elephant grass *Imperata cylindrica* are considered of "special interest", as they are good for nesting.

Trees [qa, q1]

Acacia nilotica
Albizia spp.
Artocarpus spp.
Carissa spp.
Hardwickia binata
Shorea spp.
Ziziphus spp.

Other Plants *[qa, q1]*

Bamboosa bambo
Imperata cylindrica
Prosopis spp.
Ziziphus spp.

FAUNA:

Birds [q1, qa '91, Rodgers and Panwar 1988q]

Cormorant, Little
Crane, Demoiselle
Egret, Cattle
Egret, Large
Egret, Little
Egret, Smaller
Ibis, White
Kingfisher, Lesser Pied
Spoonbill
Stork, Openbill
Tern, Blackbellied

Reptiles [qa '91]

Crocodile, Marsh

No information is available on other fauna, or on locally threatened species.

OCCURRENCE AND CONTROL OF DISEASE: No diseases noticed [qa '91]. The nearest veter narian is at Ghataprabha, 3.5 km away.

OTHER FACTORS AFFECTING HABITAT: None reported [qa '91].

WATER RESOURCES: The perennial river Ghataprabha, and the reservoir formed on it, form the dominant water bodies of the area [tp].

BUDGET: Budgetary expenditure for 1989–90, Rs 2 lakhs. There was no separate budget previous to this.

MANAGEMENT PLAN: None.

PERSONNEL: The sanctuary is under the overall charge of the ACF (WL), Dharwad, and assisted by an RFO and two guards.

EQUIPMENT: One motor boat and two rowing boats.

RESEARCH AND MONITORING: None.

COMMUNITY INTERACTION PROGRAMMES: None.

HUMAN PRESENCE:

Rights and Leases: Grazing is permitted, and there is a temple in use on an island near Kotabagi in the western portion of the sanctuary [qa '91].

Habitation: There are no villages inside. There are 24 villages in the surrounding area with a total estimated population of 35,000.

Grazing: Grazing is permitted on the islands throughout the sanctuary, free of charge. No figures are available.

Offences and Illegal Activities: Maps sent by wildlife department indicate that several islands have been encroached upon, but no further details are available.

Tourism: Records have not been kept.

Use by Other Government Agencies: A railway line (about one km) and a road (less than a km in length) crosses the sanctuary. There are also three ferry crossings [tp], though it is not known whether these are operated by the Government or by private agencies. A canal exists near the dam [tp].

Miscellaneous: While no compensation is payable for crop damage by wildlife, huge flocks of Demoiselle cranes, 200,000 to 300,000 strong, are reported to cause damage to crops in the surrounding areas [qa].

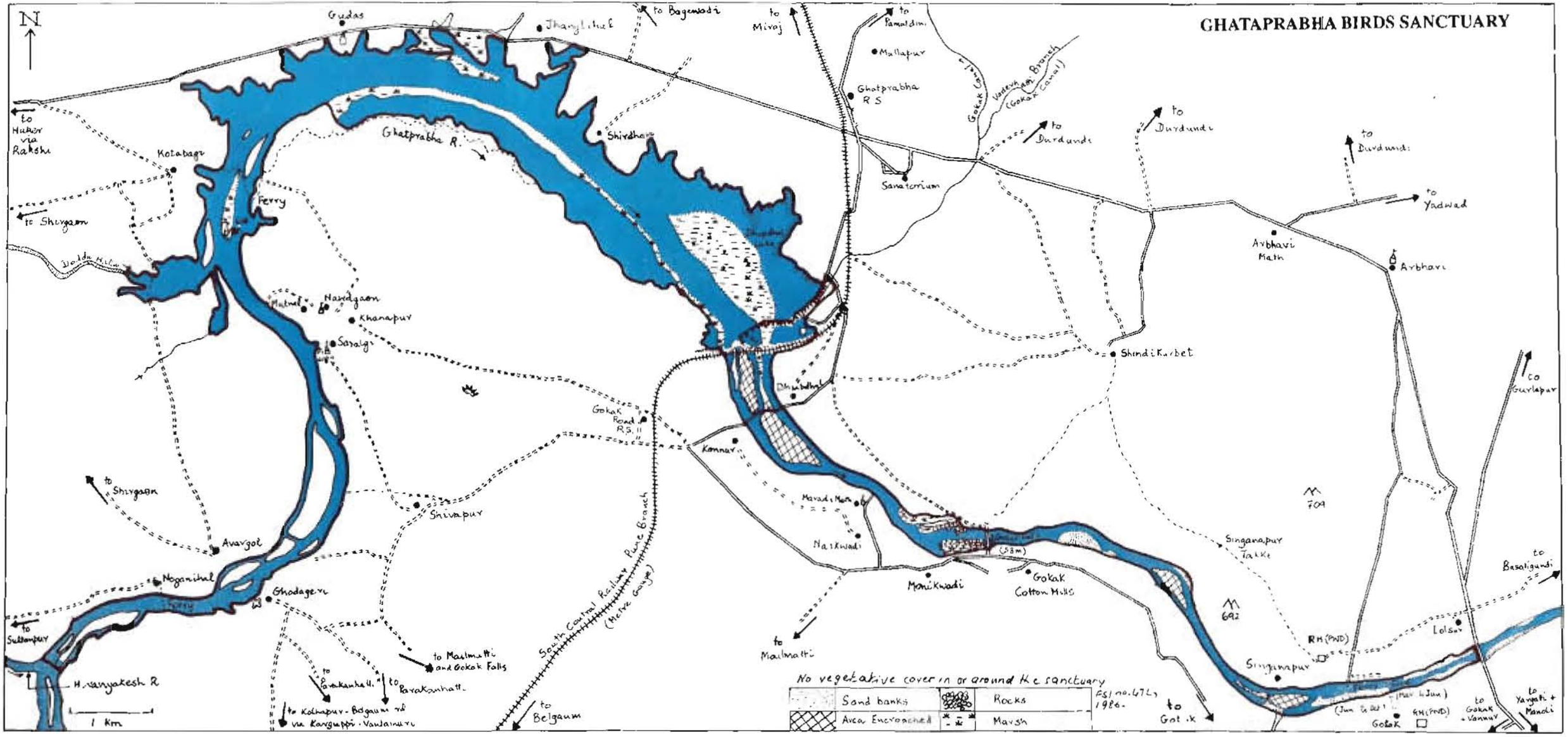
INFORMATION FOR VISITORS: The entire sanctuary is open to tourists. It is best visited between October and December, when the migratory bird population is the greatest. The falls at Gokak are a tourist attraction. There are a few resthouses on the outskirts of the sanctuary.

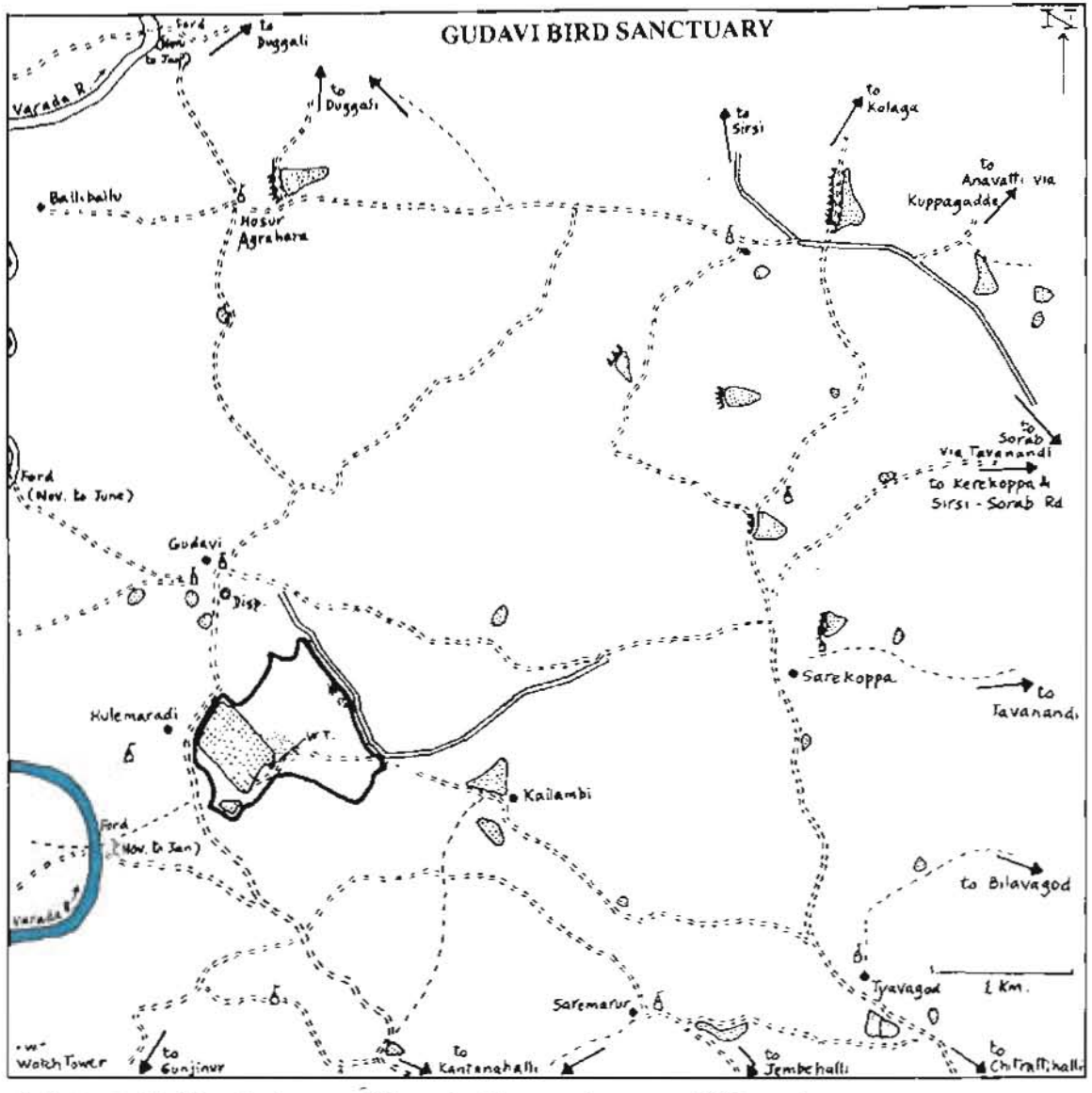
NGOs/INDIVIDUALS ASSOCIATED: None

CONTACT ADDRESSES:

1) Conservator of Forests
Wildlife Preservation Sub-division
Dharwad-580008
Karnataka

2) Local in-charge:
Range Forest Officer (Wildlife)
Ranebennur
Dharwad-580001
Karnataka


GHATAPRABHA BIRDS SANCTUARY
N
Gudas
Jhanglichuk
to Bagewadi
to Miraj
to Pamaldinni
Mallapur
Ghatprabha R S
Gokak Canal
Vadevadi Branch (Gokak canal)
to Durdundi
to Durdundi
to Durdundi
to Yadwad
Sanatorium
Ghatprabha R.
Shirdhon
to Hukeri via Rakshi
Kotabagi
to Shirgaon
Ferry
Nada Nullah
Malmal
Navalgaon
Khanapur
Saraigi
Arbhavi Math
Arbhavi
Shindi Kurbet
Dhupdhal
Gokak Road R.S.
Konnur
to Gurlapur
to Shirgaon
Shivapur
Mavadi Mala
Nalkwadi
Manikwadi
Gokak Cotton Mills
Singanapur Takli
709
692
Avargol
Nagnihal
Ghodageri
South Central Railway Pune Branch (Metre Gauge)
to Basalgundi
to Sultanpur
to Malmatti and Gokak Falls
to Parakanhatti
to Parakanhatti
to Kolhapur - Belgaum rd via Kanguppi - Vandaimuri
to Belgaum
to Malmatti
Hiranyakesh R
1 Km
Singanapur
RH (PWD)
Lolsur
(Jun to Dec)
(Mar to Jun)
Gokak
RH (PWD)
to Gokak + Vannur
to Yaragati + Mandi
to Gat.k
No vegetative cover in or around the sanctuary
Sand banks
Area Encroached
Rocks
Marsh
FSI no. 674, 1986.



* A unnamed village is shown on WL. authorities map, but not on SOI toposheet relevant for the area.

GUDAVI BIRD SANCTUARY

This small bird sanctuary consists of dense forest and a large seasonal tank [tp]. The tank water is used in the agricultural fields which surround the sanctuary [qa]. Many birds frequent the sanctuary, especially from June to November. The *Vitex leucoxylon* trees in the tank are known to be very popular amongst these birds as nesting sites [qa].

LEGAL STATUS: The area was declared a bird sanctuary on 10 July 1989, vide Notification no. AHFF 262 FWL86 [notif].

AREA AND ZONING: 73.68 ha (0.74 sq.km) [notif]. There is no zoning [qa].

LOCATION: *District* Shimoga; *Latitudinal range* 14°25'59" to 14°26'41" [tp]; *Longitudinal range* 75°0'43" to 75°1'28" [tp]; *Nearest town* Sorab (12 km) [tp, qa]; *Nearest Railhead* Sagar (41.5 km) [tp, qa]; *Nearest Airport* Mangalore (271.5 km) [St. map].

APPROACHES: From Bangalore to Shimoga (265 km), then to Sagar (70 km) and then Sorab (29.5 km) [St. map,tp]. From Sorab the sanctuary is 12 km away [tp]. Alternatively, from Mangalore to Shimoga (160 km), then on as above [St. map, tp]

TOPOGRAPHY AND CLIMATE: *Altitude* 560m* [tp]; *Temperature* 18°C to 38°C [qa]; *Mean annual rainfall* 1500 mm [qa].

FLORA: About 30 ha. of Southern Moist Mixed Deciduous Forest 3B/C2.

Trees [qa, mp]

Acacia auriculiformis
Acacia nilotica
Artocarpus heterophyllus
Bombax ceiba
Butea monosperma
Casuarina equisetifolia
Dalbergia latifolia
Ficus drupacea
Ficus spp.
Grewia tiliifolia
Lagerstroemia microcarpa
Pterocarpus marsupium
Schleichera oleosa
Syzygium cumini
Terminalia spp.
Vitex altissima
Vitex leucoxylon

Other Plants [qa, mp]

Bamboo *(species not known)*
Pistia sp.

Acacia auriculiformis, *Acacia nilotica* and *Casuarina equisetifolia* have been introduced in the sanctuary, the first two for providing more nesting sites for birds, and the third as a source of fuelwood. Mixed plantations of these, as well as of Bamboo, *Artocarpus heterophyllus*, and *Syzygium cumini* were carried out over four ha., in 1988. Bamboo (species not specified) has been planted on the tank bunds. *Pistia* sp. is known to be a weed in the area, but no further details are available.

* This is the highest contour line; since no heights are marked on the SOI toposheet, the range is not known.

COMMUNITY INTERACTION PROGRAMMES: None.

HUMAN PRESENCE:

Rights and Leases: There is reporedly a concession for the villagers from Gudavi and Kallambi to graze their cattle in the sanctuary (however, see below, grazing). These villagers also have right of way inside the sanctuary, over a length of 1 km..

Habitation: There are no settlements inside the sanctuary [qa].*

Grazing: A total population of 500 cows and buffaloes, and 50 goats, graze in the park. This grazing is reportedly unauthorised; the contradiction between this and the information given under Rights and Leases could not be resolved.

Offences and Illegal Activities: Unauthorized grazing is reported.

Tourism: There were 5000 day visitors to the sanctuary in 1990. Visitors on peak days have been as many as 200.

Use by Other Government Agencies: None [qa].

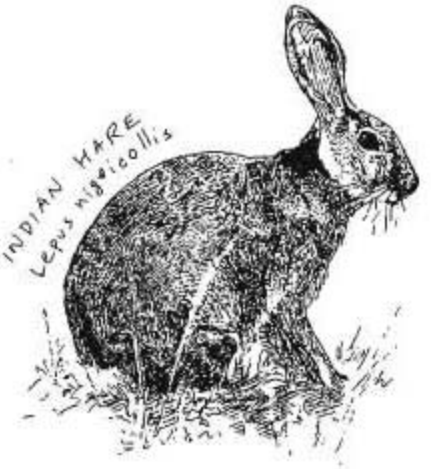
INFORMATION FOR VISITORS: Entry is prohibited at night. Erection of watch towers for bird watching and photography, boating facilities in the tank in areas where birds are not nesting, display boards with details of the types of birds visiting the sanctuary, and construction of temporary shelters for visitors have been proposed. June to November is the best time to visit the sanctuary, as it is the nesting season for birds [qa].

NGO's/INDIVIDUALS ASSOCIATED: Shri Jageng Galbera (for address, please see Appendix 8).

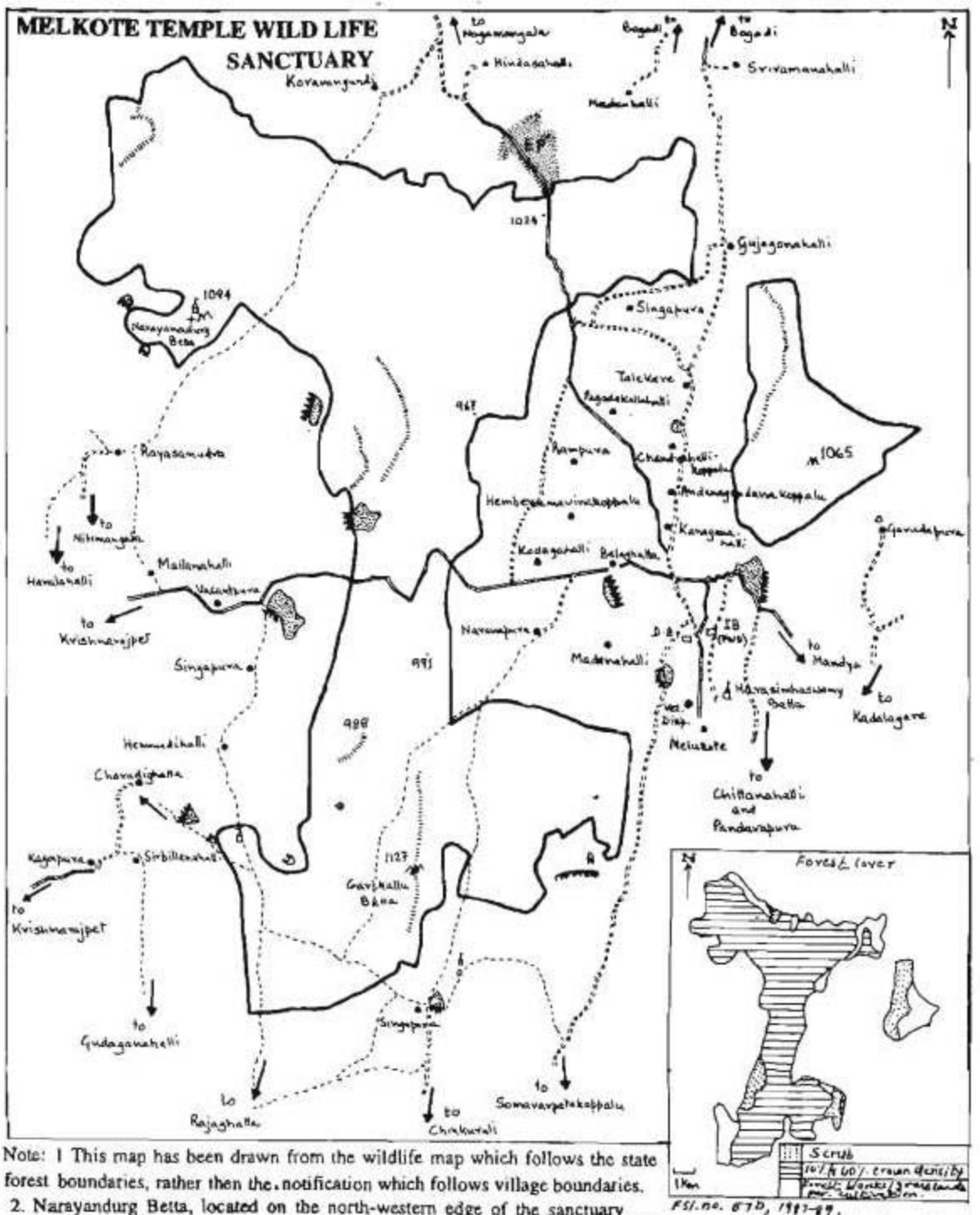
CONTACT ADDRESS:

1) Deputy Conservator of Forests
Shimoga Wildlife Division
I Cross Jayanagar
Shimoga - 577201
Shimoga Dist.
Karnataka

2) Local In-charge:
Range Forest Officer (WL)
Gudavi Bird Sanctuary
Sorab Taluka - 577429
Shimoga Dist.
Karnataka



* The Wildlife map shows one settlement inside, while the survey of India toposheet shows none. Sanctuary authorities maintain that there are no settlements inside. This discrepancy could not be resolved.



Note: 1 This map has been drawn from the wildlife map which follows the state forest boundaries, rather then the notification which follows village boundaries.

2. Narayandurg Betta, located on the north-western edge of the sanctuary mentioned as part of the sanctuary's eastern boundary in the notification. This appears to be a mistake in the notification.

MELKOTE TEMPLE WILD LIFE SANCTUARY

Situated north of Mysore, this sanctuary was declared to protect the Wolf. It has been named after the Melukote* Narasimhaswami Temple, a famous pilgrimage centre which is adjacent. The sanctuary is in two blocks, separated by human habitation and revenue lands. It has an undulating landscape draining westwards, covered by scrub vegetation [mp].

LEGAL STATUS: Declared a sanctuary vide notification No AFD 49 FWL 74 dated June 17, 1974 [notif]. Previously a State Forest.

AREA AND ZONING: 4982 ha (49.82 sq. km.) [notif]. No zoning. The western block spreads over 4534 ha., while the eastern block is much smaller, 448 ha.

LOCATION: *District* Mandya; *Latitudinal range*** 12°37'35" to 12°44'38" N and 12°41'00" to 12°43'59" N [tp]; *Longitudinal range* 76°34'12" to 76°39'00" E and 76°39'13" to 76°40'39" E [tp]; *Nearest town* Melukote (5 km) [tp]; *Nearest railhead* Mysore (61 km) [SOI 1981]; *Nearest airport* Bangalore (140 km).

APPROACHES: From Mysore to Shrirangapattana (16 km) and Pandavapura (10 km) [St. map], on to Melukote (30 km), which is 5 km from the sanctuary [tp]. Alternatively, from Bangalore first to Mandya (100 km), and on to the sanctuary (40 km) [St. map].

TOPOGRAPHY AND CLIMATE: *Altitude* 892.15 m [q1] to 1127 m, the highest point being Garikallu Betta in the south [tp]; *Temperature* 17°C to 38°C; *Mean annual rainfall* 690 mm.

FLORA: According to Landsat imagery, the sanctuary consists of open forest (crown density of 10% to 40%), and is surrounded by cultivated areas and blanks [Landsat 1986]. The forest type found in the sanctuary is Dry Deciduous Scrub Forest 5/DSI [Rodgers and Panwar 1988q].

Trees [q1, mp, Pascal 1982a]

Acacia ferruginea
Acacia leucophloea
Acacia spp.
Aegle marmelos
Ailanthus triphysa
Albizia amara
Albizia lebbeck
Anogeissus latifolia
Azadirachta indica
Bauhinia racemosa
Butea monosperma
Cassia fistula
Cassia siamea
Chloroxylon swietenia
Dalbergia latifolia
Dalbergia paniculata
Derris indica
Diospyros melanoxylon
Emblica officinalis
Eucalyptus spp.
Ficus benghalensis
Ficus racemosa
Ficus religiosa
Ficus virens
Holigarna arnottiana
Lagerstroemia parviflora
Madhuca longifolia
Mangifera indica
Michelia champaka
Naringi crenulata
Pavetta indica
Salvadora persica
Santalum album
Schleichera oleosa

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* 'Melukote' is the spelling as used in the Survey of India toposheet; the sanctuary name on the notification, however, is Melkote.

** Two sets of coordinates are given because the sanctuary is in two parts.

Schrebera swietenioides
Syzygium cumini
Tectona grandis
Terminalia alata
Terminalia chebula
Xeromphis spinosa
Ziziphus spp.

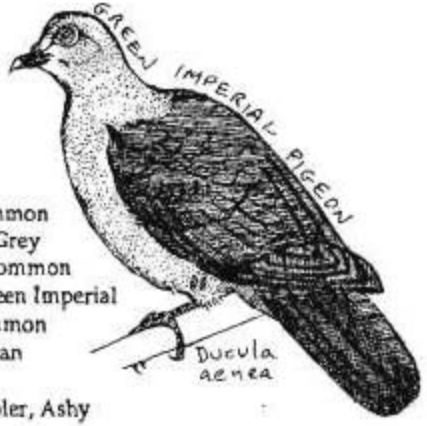
Other Plants [ql, mp, Pascal 1982a]
Acacia caesia
Acacia spp.
Adhatoda zeylanica
Dendrocalamus strictus
Dodonaea viscosa
Lantana camara
Ziziphus spp.

FAUNA:

Mammals [ql, dir, mp]
Antelope, Indian*
Bear, Sloth
Boar, Indian Wild
Deer, Spotted*
Dog, Indian Wild*
Fox, Indian
Hare, Indian
Jackal
Leopard
Mongoose, Common
Sambar*
Wolf

Reptiles [mp]
Cobra, King
Monitor, Common Indian
Snake, Common Wolf
Snake, Rat

Birds [dir, mp, Baskaran pers. comm.]
Babbler, Common
Barbet, Small Green
Bulbul, Redwhiskered
Dove, Little Brown
Dove, Spotted
Egret, Cattle
Egret, Large
Finch-lark, Ashycrowned
Junglefowl, Grey
Myna, Common
Partridge, Grey
Peafowl, Common
Pigeon, Green Imperial
Quail, Common
Robin, Indian
Tailorbird
Wren-warbler, Ashy



Fish [mp]
Catla catla (Catla)
Labeo rohita (Rohu)

There is no information on other fauna, or on locally threatened species or on over-population of fauna. The fish species mentioned above have been introduced by the Fisheries Department [mp].

OCCURRENCE AND CONTROL OF DISEASE: No cases of disease or epidemics have been reported. About 70 percent of the livestock in adjacent areas have been vaccinated. Cattle passing through are checked for vaccination. The nearest veterinarian is at Melukote, five kms away [tp].

OTHER FACTORS AFFECTING HABITAT: Soil erosion is reported [mp]. Since the last two years 4500 gulley checks have been constructed.

* These species, once reported, may no longer be found in the sanctuary [Baskaran pers. comm.]

WATER RESOURCES: There are some seasonal streams and one small seasonal lake [tp]. There is also a small seasonal reservoir along the western boundary [tp]. New tanks and ponds have been constructed to improve water resources.

BUDGET: Budgetary expenditure during 1990–91 was Rs. 2 lakhs and during 1992–93 Rs. 3 lakhs.

MANAGEMENT PLAN: A Management Plan was drawn up in December, 1989, by the Deputy Conservator of Forests (WL), Mysore, and has been submitted for approval [mp]. It is not clear from this document, but the period of the plan appears to be 1990–95.

PERSONNEL: One Range Forest Officer (who is locally in-charge), two beat guards and three daily-wage watchers [qa]. The CF (WL), Mysore is overall in-charge.

EQUIPMENT: None.

RESEARCH AND MONITORING: None.

COMMUNITY INTERACTION PROGRAMME: Film shows are regularly arranged.

HUMAN PRESENCE:

Rights and Leases: None.

Habitation: There are no villages inside the sanctuary. 34 villages in the adjacent areas contain a population of 18,250.

Tourism: No visitor records are kept.

Use by Other Government Agencies: There are 15 km of roads within the sanctuary. The two km portion of the Mandya-Krishnarajpet Road which bisects the sanctuary, is under the control of the PWD [qa]. Details of control over the other roads are not available.

INFORMATION FOR VISITORS: The best months to visit are between October and April when the weather is dry and cool. The Melukote Narasimhaswami temple is situated on the outskirts of the sanctuary. There is accommodation available on the outskirts.

NGOs/INDIVIDUALS ASSOCIATED: The sanctuary has one Honorary Wildlife Warden, Shri Ullas Karanth (Please see Appendix 8 for address).

CONTACT ADDRESSES:

1) Conservator of Forests
   Wildlife Preservation Division
   Aranya Bhavan
   Wood Yard, Ashokapuram
   Mysore-570008
   Karnataka

2) Local in-charge:
   Range Forest Officer
   Melkote Wildlife Sanctuary
   Pandavapura Taluka
   Mandya -571401
   Karnataka

MOOKAMBIKA WILDLIFE SANCTUARY

Mookambika's hilly terrain is clothed in the evergreen, semi-evergreen and hilltop tropical forests characteristic of the Western Ghats. The sanctuary has been named after the Goddess Mukambika*, a temple for whom is located at Kollur. There is a belief that the whole area was created by the saint Parshurama, hence it is also known as *Parshurama Bhumi*. The Sharavathi Valley Sanctuary adjoins its north-western boundary [tp].

LEGAL STATUS: Declared a sanctuary vide notification AFD 48 FWL 74 on June 17, 1974 [notif]. All legal procedures under section 19 to 26 of Wildlife Protection Act of 1972 have been reportedly completed in 1978 [q1]; a final notification has been issued in 1994, though the precise date is unclear [Appayya, Pers. Comm. 1994].

AREA AND ZONING: 24,700 ha (247.00 sq. km) [notif]. The Core Zone occupies 9712 ha, the Buffer Zone 10,688 ha, and the Tourist Zone, 4300 ha.

LOCATION: *District* Dakshina Kannada (South Kanara) [dir]; *Latitudinal range* 13°41'24" to 13°58'48" N [tp]; *Longitudinal range* 74°39'58" to 74°55'54"E [tp]; *Nearest town* Baindur (approx. 20 km) [tp]; *Nearest railhead* Mangalore (125 km) [Rd mp]; *Nearest airport* Mangalore (125 km) [Rd mp].

APPROACHES: From Bangalore to Tumkur (70 km), Shimoga (200 km), Talgappa (15 km), Sagar (70 km), and on to Kollur (75 km) inside the sanctuary [St. map]. Alternately, from Mangalore to Baindur on National Highway 17 (105 km) and then 24 km on to Kollur inside the sanctuary.

TOPOGRAPHY AND CLIMATE *Altitude* about 20 m [q1] to 1343 m, the highest point, Kodachadri hill, located in the north-eastern edge of the sanctuary [tp]; *Temperature* 10°C to 35°C; *Mean annual rainfall* 4000 mm.

FLORA: Most of the sanctuary has closed forest, with a crown density of 40% and above. However, the southern section is interspersed with blanks and cultivated areas [Landsat 1986]. Forest types include Southern Hilltop Tropical Evergreen Forest 1A/C3, West Coast Tropical Evergreen Forests 1A/C4, Lateritic Semi-Evergreen Forest 2/E4, West Coast Semi-Evergreen Forests 2A/C2, Southern Secondary Moist Mixed Deciduous Forests 3B/C2/2SI, and Dry Grasslands 5/DS4 [mp, q1].

Between 1981–82 and 1984–85, 40 ha of mixed plantation were raised for wildlife habitat. The species planted were Mango *Mangifera indica*, *Hopea parviflora*, *Octivia indica* and *Ailanthus triphysa*. During this period 45 ha of Teak *Tectona grandis* were also planted for commercial timber. There are also *Eucalyptus* plantations in the south western area of the sanctuary [tp], established before the sanctuary was declared. The weed Eupatorium *Chromolaena odorata* has become a menace in the open areas [mp].

Trees and ***Other Plants***: See Appendix A

FAUNA:

Mammals [q1, dir]

Bear, Sloth
Boar, Indian Wild
Deer, Barking
Deer, Mouse
Deer, Spotted
Dog, Indian Wild
Elephant, Indian
Gaur
Hare, Indian
Hyena, Striped
Jackal
Langur, Common
Leopard
Macaque, Bonnet
Macaque, Lion tailed
Mongoose, Small Indian

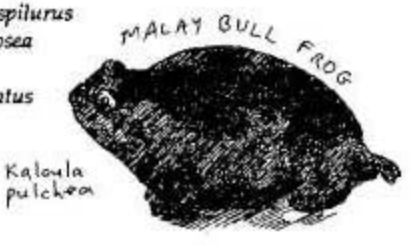
* This spelling, used on SOI toposheets, is different from that used in the sanctuary notification.

Otter, Common
Pangolin, Indian
Porcupine, Indian
Sambar
Tiger

Reptiles [q1, mp]
Chameleon, Indian
Lizard, Common Garden
Krait, Common
Monitor, Common Indian
Python, Indian
Snake, Common Vine
Tortoise, Starred
Viper, Russell's

Amphibians [qa]
Frog, Green
Frog, Bull
Frog, Bicoloured
Frog *Rana malabarica*
Frog, Common Tree
Frog, Malay Bull
Frog, Ornate Narrowmouthed
Frog, Red Narrowmouthed

Fish [qa]
Aorichthys aor
Channa eucopunctata
Channa gaucha
Clarias batrachus
Labeo boga
Labeo kontius
Mastocembalus armatus
Mystus keletius
Mystus vittatus
Ophicephalus punctatus
Pseudotropius atheronoides
Puntius neilli
Puntius sarana spilurus
Scorpaenopsis rosea
Tor spp.
Trachynotus ovatus
Wallago attu



Birds: See Appendix B
There are about 130 salt licks provided for the animals.

OCCURRENCE AND CONTROL OF DISEASE: There have been no reports of epidemics or disease occurring amongst wildlife in the sanctuary. However, sporadic incidence of Rinderpest and Anthrax have been reported from the livestock in the sanctuary area [mp]. A vaccination programme has covered all the livestock in and around the sanctuary area. Cattle passing through are occasionally checked for vaccination by the wildlife staff. The Kyasanur Forest Disease or Monkey Fever prevails in the area, apparently spread by Common langur ticks [mp]. The nearest veterinarian is at Vandse, on the southern side, and at Kallur on the western side. [tp].

OTHER FACTORS AFFECTING HABITAT: Soil erosion is reported, the possible cause being loss of forests due to timber extraction.

WATER RESOURCES: The Chakra Nadi forms the southern boundary of the sanctuary, and the Kollur river flows along a small part of its south-western boundary, after originating inside [tp]. In addition there are 27 perennial streams, 36 major, and several smaller seasonal ones [tp]. There are also two seasonal natural lakes [tp] and one spring [qa '91]. Twenty water tanks have also been dug [qa].

BUDGET: Budgetary expenditure incurred during 1987–88 was Rs. 1.25 lakhs and in 1988–89, Rs. 5.78 lakhs.

MANAGEMENT PLAN: A Management Plan has been drawn up by the ACF, Sahyadri Wildlife Sub-Division, for the period 1990–1995. It has been submitted for approval [mp].

PERSONNEL: One RFO, four Foresters and 15 Forest Guards (qa'93). The Warden also looks after the Sharavathi Sanctuary [mp].

EQUIPMENT: One rifle, one gun, one 16mm projector, one slide projector, one camera, one binoculars, one mini-truck,and one mobile wireless set [mp].

RESEARCH AND MONITORING: The Wildlife Institute of India is conducting field research on the ecology of Indian Giant Squirrel.

COMMUNITY INTERACTION PROGRAMMES: During wildlife week celebrations, the importance of the flora and fauna are highlighted to the local people and children through audio-visuals and film shows .

HUMAN PRESENCE:

Rights and Leases: The villagers living in the enclosures* inside the sanctuary, have the right to graze their cattle in the sanctuary. These villagers, as also those from surrounding areas, are permitted to collect firewood and fallen leaves [mp]. Pilgrims have the right to religious yatra, and while visiting the famous Mukambika temple at Kollur they sometimes pass through the sanctuary on the way to the Kodachadri hill. Also, an annual yatra takes place to Belakallu Tirtha (near Kodachadri hill) inside the sanctuary. Hundreds of people may gather here for the day, affecting an area of about 500 ha.

Habitation: There are 112 villages ** inside the sanctuary , with a population of 49,202 [qa '93]. There are 100 villages in the adjoining area, with a population of 1,08,000.

Grazing: About 30,000 heads of livestock graze inside the sanctuary.

Offences and Illegal Activities: Encroachments made in the buffer area of the sanctuary have not been regularised. Illegal hunting is reported, one case during 1979–80 and 6 cases during 1984–93.

Tourism: Mookambika receives few tourists, and no records are kept [mp].

Use by Other Government Agencies: Till 1988 the Forest Department and the Industrial Plywood Company used to work throughout the sanctuary for the extraction of timber and NWFP. However, the felling of green trees has been stopped since 1988 after which the Department only extracted dead and fallen timber and firewood.This also has been stopped during 1992–93. The PWD maintains roads occupying 60 kms, and the Karnataka Electricity Board has transmission lines over 20 kms. Four small PWD granite quarries exist at Halkal, now abandoned. The Forest Department (Territorial Wing) raises plantations of fuelwood and other species annually [mp].

Miscellaneous: No information is available regarding crop damage caused by wildlife. There were two cases of livestock lifting registered and accepted for compensation between 1979–80 and 1983–84.

INFORMATION FOR VISITORS: Mookambika is best visited between November and April, when the weather is dry. The Mukambika Devasthana [tp] at Kollur, Belakallu temple [tp], and the Kodachadri hilltop are revered pilgrimage spots in the area. There are several resthouses inside the sanctuary and in adjacent areas. One watchtower has been constructed for wildlife viewing.

Plans for the future include development of game roads and salt licks, construction of bridges, culverts, and watchtowers, and extension of accommodation facilities.

NGOs/INDIVIDUALS ASSOCIATED: There is one Honorary Wildlife Warden, Shri B. Jaganath Shetty (please see Appendix 8 for address).

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* These are revenue lands which according to wildlife authorities are not legally a part of the sanctuary. However, the notification does not exclude such areas, and their extents could not be depicted on the map.

** Survey of India toposheets depict 71 villages (one of which is possibly abandoned) within the sanctuary. This discrepancy could not be resolved.

CONTACT ADDRESSES:

1) Deputy Conservator of Forests
Kudremukh Wildlife Division
Maruthi Building
Ankere-Karkala-574104
Karnataka

2) Local in-charge:
Range Forest Officer
Kundapur Wildlife Range
Kundapur Post, Kundapur Taluk-576201
Dakshina Kannada Dist.
Karnataka

APPENDIX A

Trees [Q1, mp, Pascal 1982]

Acacia catechu
Acacia ferruginea
Acacia polycantha
Acacia spp.
Acrocarpus fraxinifolius
Aegle marmelos
Ailanthus triphysa
Albizia amara
Albizia chinensis
Albizia lebbeck
Albizia odoratissima
Albizia procera
Albizia spp.
Alseodaphne semecarpifolia
Alstonia scholaris
Anacardium occidentale
Antiaris toxicaria
Aporosa lindleyana
Arenga wightii
Artocarpus gomezianus
Artocarpus heterophyllus
Artocarpus hirsutus
Artocarpus spp.
Atalantia monophylla
Azadirachta indica
Bauhinia racemosa
Bischofia javanica
Bombax ceiba
Bombax spp.
Bridelia spp.
Butea monosperma
Butea superba
Calophyllum apetalum
Calophyllum elatum
Calophyllum spp.
Canarium strictum
Carallia brachiata
Carallia lucida
Careya arborea
Caryota urens
Cassia fistula
Casuarina equisetifolia
Chloroxylon swietenia
Chukrasia tabularis
Cinnamomum iners
Cinnamomum spp.
Cinnamomum zeylanicum
Crateva magna
Dalbergia latifolia
Dalbergia paniculata
Dillenia pentagyna
Dillenia spp.
Diospyros candolleana
Diospyros ebenum
Diospyros montana
Diospyros oocarpa
Dipterocarpus indicus
Elaeocarpus serratus
Elaeocarpus spp.
Elaeocarpus tuberculatus
Emblica officinalis
Ervatamia heyneana

Erythrina variegata
Eucalyptus spp.
Evodia lunu-ankenda
Ficus amplissima
Ficus benghalensis
Ficus callosa
Ficus drupacea
Ficus hispida
Ficus religiosa
Ficus spp.
Ficus virens
Garcinia gummi-gutta
Garcinia indica
Garcinia morella
Garuga pinnata
Glochidion zeylanicum
Haldina cordifolia
Holigarna arnottiana
Holigarna spp.
Hopea glabra
Hopea parviflora
Hopea wightiana
Hydnocarpus laurifolia
Hydnocarpus laurifolia
Kydia calycina
Lagerstroemia microcarpa
Lagerstroemia parviflora
Lagerstroemia speciosa
Lagerstroemia spp.
Lannea coromandelica
Lophopetalum wightianum
Macaranga indica
Macaranga peltata
Machilus spp.
Mallotus philippensis
Mammea suriga
Mangifera indica
Mastixia arborea
Melia dubia
Memecylon spp.
Mesua ferrea
Mesua spp.
Michelia spp.
Mimusops elengi
Mitragyna parvifolia
Myristica dactyloides
Myristica malabarica
Myristica spp.
Naringi crenulata
Nothapodytes foetida
Octivia indica
Olea dioica
Palaquium ellipticum
Persea macrantha
Phoenix sylvestris
Pinanga dicksonii
Poeciloneuron indicum
Pterocarpus marsupium
Santalum album
Saraca asoca
Schleichera oleosa
Scolopia crenata
Semecarpus anacardium
Spondias pinnata
Sterculia guttata
Sterculia urens
Sterculia villosa
Strychnos nux-vomica
Swietenia mahogani
Symplocos cochinchinensis
Syzygium caryophyllatum
Syzygium cumini
Syzygium gardneri
Syzygium hemisphericum
Syzygium spp.
Syzygium zeylanicum
Tectona grandis
Terminalia alata
Terminalia arjuna
Terminalia bellirica
Terminalia chebula
Terminalia paniculata
Terminalia spp.
Toona ciliata
Trema orientalis
Trewia nudiflora
Vateria indica
Viburnum punctatum
Vitex altissima
Vitex leucoxylon
Vitex negundo
Xeromphis uliginosa
Xylia xylocarpa
Zanthoxylum rhetsa
Ziziphus xylopyrus

Other Plants [Q1, mp, Pascal 1982]

Abrus precatorius
Acacia caesia
Acacia sinuata
Artabotrys zeylanicus
Bauhinia vahlii
Calamus pseudo-tenuis
Calamus spp.
Calamus travancoricus
Calycopteris floribunda
Chromolaena odorata
Clematis gouriana
Clerodendrum viscosum
Cordia dichotoma
Elaeagnus conferta
Elaeagnus kologa
Ensete superbum
Entada phaseoloides
Flemingia strobilifera
Gnetum ula
Helicteres isora
Hemidesmus indicus
Holarrhena antidysenterica
Ichnocarpus frutescens
Leea indica
Memecylon angustifolium
Ochlandra scriptoria
Ochlandra travancorica
Phoenix humilis
Psychotria nigra
Securinega leucopyrus
Spatholobus parviflorus
Strobilanthes spp.
Thottea siliquosa
Ziziphus oenoplia

APPENDIX B

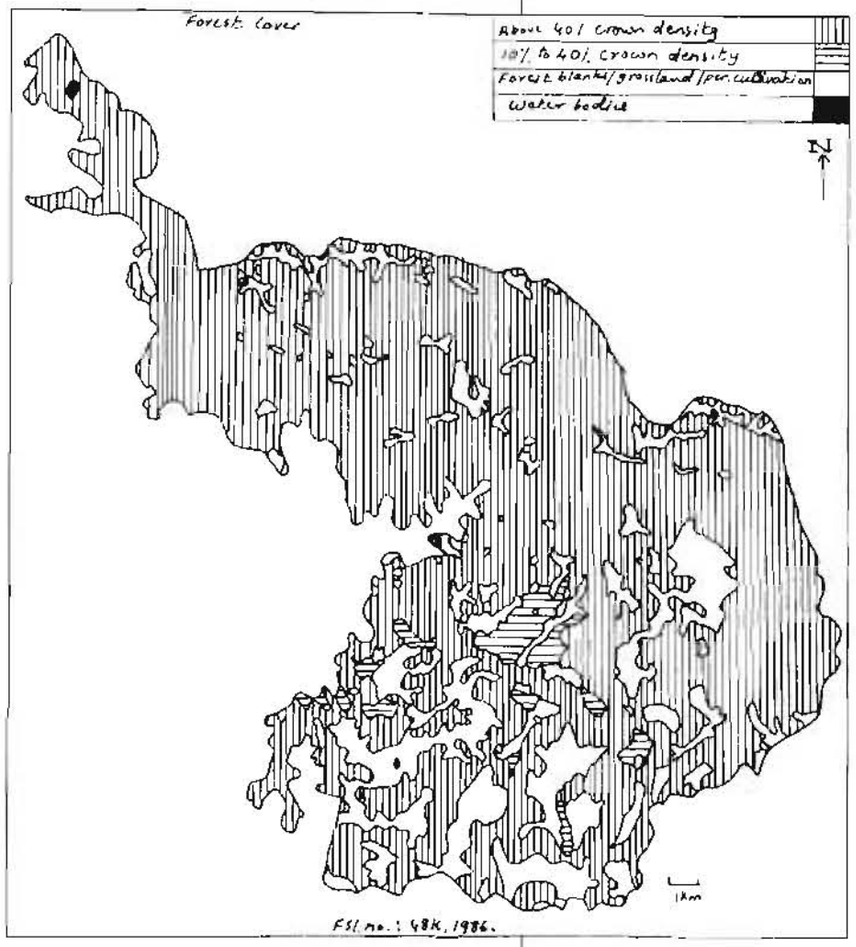
Birds [mp, qa]

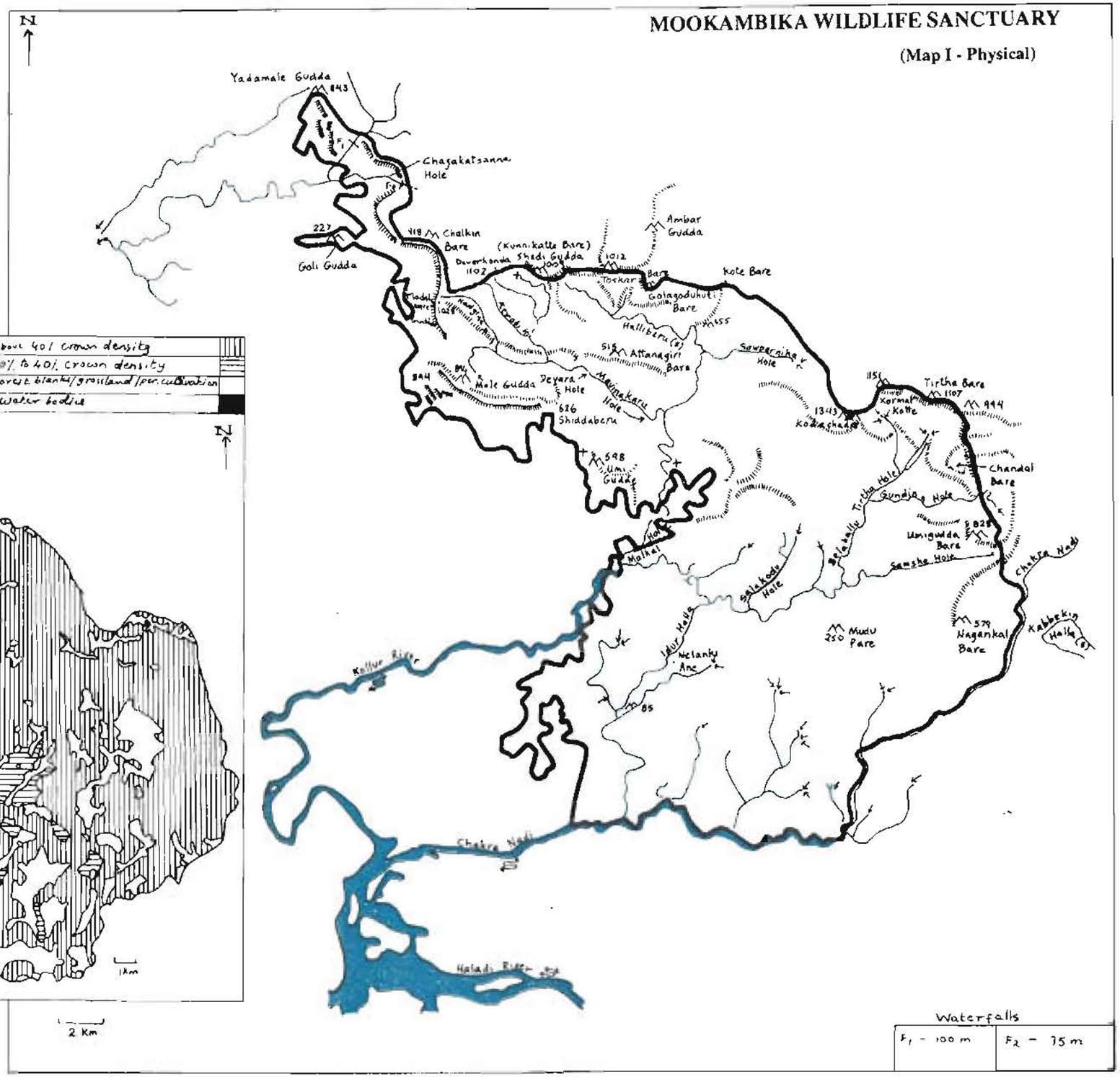
Adjutant, Lesser
Babbler, Rufousbellied
Barbet, Green
Baya
Bulbul, Redvented
Bulbul, Redwhiskered
Bulbul, Whitebrowed
Cormorant, Little
Crow, Jungle
Crow-pheasant
Darter
Dove, Red Turtle
Dove, Spotted
Drongo, Black
Drongo, Greater Racket-tailed
Duck, Comb
Egret, Little
Flowerpecker, Tickell's
Flycatcher, Paradise
Flycatcher, Tickell's Blue
Hoopoe
Hornbill, Common Grey
Hornbill, Great Pied
Hornbill, Malabar Pied
Ibis, White
Jacana, Pheasant-tailed
Junglefowl, Grey
Kingfisher, Common
Kingfisher, Whitebreasted
Kite, Brahminy
Kite, Pariah
Koel
Lapwing, Redwattled
Lorikeet, Indian
Magpie-Robin
Minivet, Scarlet
Moorhen, Purple
Munia, Whitebacked
Myna, Common
Myna, Jungle
Oriole, Golden
Partridge, Grey
Peafowl, Common
Pigeon, Blue Rock
Pigeon, Green
Robin, Indian
Shikra
Shrike, Common Wood
Shrike, Grey
Sparrow, House
Sparrow, Yellowthroated
Spurfowl, Red
Stork, Whitenecked
Sunbird, Purple

Swallow
Swallow, Wiretailed
Swallow-shrike, Ashy
Tailorbird
Teal, Common
Teal, Lesser Whistling
Tree-pie, Southern
Vulture, Egyptian
Wagtail, White
Waterhen, Whitebreasted
Woodpecker, Lesser Goldenbacked
Woodpecker, Yellowfronted Pied

MOOKAMBIKA WILDLIFE SANCTUARY

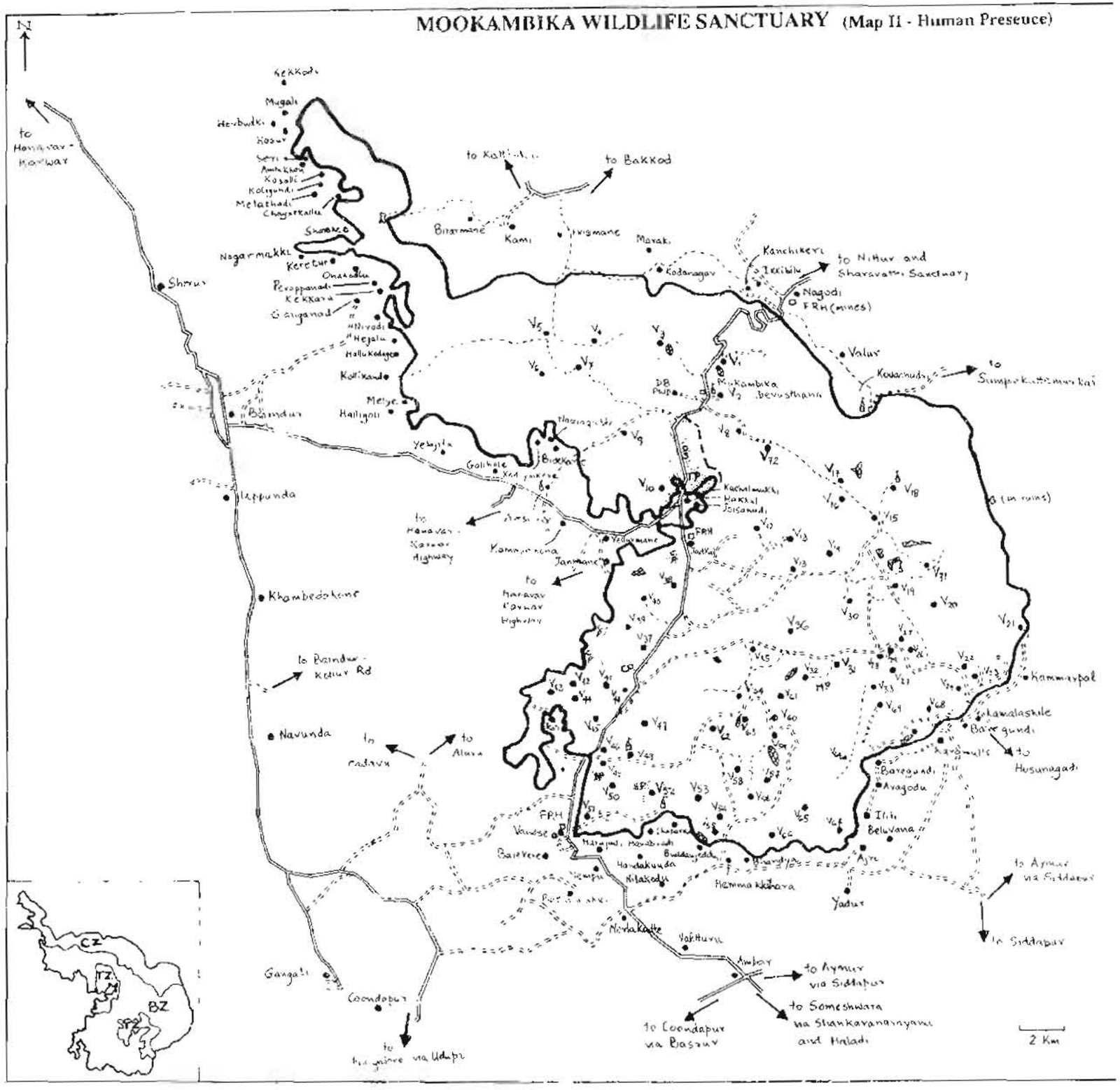
(Map I - Physical)





Some Habitation located within the sanctuary

V1- Dhulli
V2- Kollur
V3- Haltiberu
V4- Goligudde
V5- Megani
V6- Mel Bavadi
V7- Kela Bavadi
V8- Salageri
V9- Mavinakaru
V10- Charsal
V11- Jadkal
V12- Hemmakki
V13- Salakodu (in two locacton)
V14- Hadihaklu
V15- Hindgan
V16- Koderi
V17- Basribailu
V18- Belakallu
V19- Mudiru
V20- Ashkodu
V21- Kabbinale
V22- Kotakul
V23- Salagodu
V24- Baregundi
V25- Inge
V26- Binjeri
V27- Aregundi
V28- Kundanbailu
V29- Kolekadu
V30- Jambe
V31- Nirundi
V32- Keradi
V33- Mudugal
V34- Manmarahard
V35- Doddahara
V36- Hayangaru
V37- Jennal
V38- Balagodu
V39- Kukkadi
V40- Kolath
V41- Idur (in two location)
V42- sarkal
V43- Mairuguli
V44- Golikere
V45- Talabur
V46- Harmmanu
V47- Naikambli
V48- Mavinakatte
V49- Chittur
V50- Hijana
V51- Mavinakatte
V52- Hadangundi
V53- Nandroli
V54- Nuj
V55- Bandradi
V56- Mudumanda
V57- keladi
V58- Hulikodlu
V59- Haladi
V60- Chapraniakki
V61- Keradi
V62 Vandabali
V6- Kadoli
V64- Kullamballi
V65- Hakkoli
V66- Harmannu
V67- Martu
V68- Hallihde (location)
V69- Otebethu
V70- Gudikere
V71- Samshel (May he abandoned)



NUGU WILDLIFE SANCTUARY

Situated north of Bandipur National Park, this small sanctuary has not yet been opened to tourists. The reservoir of the Nugu dam forms half of the northern part of the sanctuary. Its deciduous forests are reported to be in a fairly degraded condition, but with the protection being offered in the past few years, the habitat is improving.

LEGAL STATUS: Declared a sanctuary vide notification AFD 54 FWL 74 30.32 on June 17, 1974. The entire area was previously a State Forest.

AREA AND ZONING: 3032 ha. (30.32 sq. km.). No zoning.

LOCATION: *District* Mysore; *Latitudinal range* 11°52'47" to 11°59'00" N [tp]; *Longitudinal range* 76°26'10" to 76°28'37" E [tp]; *Nearest town* Sargur (10km); *Nearest railhead* Nanjangud (40km); *Nearest airport* Mysore (57km) [St. map].

APPROACHES: From Bangalore to Mysore (142km) [tp], on to Chatnahalli (Jayapura) (10 km), and Hampapura (15 km), and 25 km on to Sargur which is 10 km from sanctuary. Alternatively from Mysore to Hediyala (55 km), on to sanctuary (2 km) [tp].

TOPOGRAPHY AND CLIMATE: *Altitude* 742 m [q1] to 959 m, the highest point being Mullur Betta in the north-east [tp]; *Temperature* 14°C to 38°C; *Mean annual rainfall* 1000 mm [Rodgers and Panwar 1988q].

FLORA: Landsat imagery indicates blank and cultivated areas in the area immediately surrounding the reservoir, while the rest of the sanctuary is covered with open forest of crown density 10% to 40% [Landsat 1986]. Forest types in the sanctuary include Southern Dry Mixed Deciduous Forest 5A/C3, and Dry Deciduous Scrub 5/DSI [Rodgers and Panwar 1988q]. There are small groves of species like Dindiga *Anogeissus latifolia*, Nelli *Emblica officinalis*, Sandal *Santalum album* and Bamboo *Dendrocalamus strictus* [mp]. A *Eucalyptus* plantation is located in the central area of the sanctuary [tp]. *Acacia nilotica* is being raised on the foreshore of the Nugu reservoir for habitat protection [mp]. The weeds *Lantana camara* and Eupatorium *Chromolaena odorata* are spreading in the sanctuary.

Trees [qa, q1, mp, map]

Acacia nilotica
Acacia spp.
Anogeissus latifolia
Anthocephalus chinensis
Aporosa lindleyana
Bombax spp.
Cullenia exarillata
Dillenia pentagyna
Dillenia spp.
Diospyros spp.
Dipterocarpus indicus
Emblica officinalis
Eucalyptus spp.
Ficus benghalensis
Gmelina arborea
Gordonia obtusa
Grewia tiliifolia
Haldina cordifolia
Hevea brasiliensis
Humboldtia brunonis
Kingiodendron pinnatum
Lagerstroemia microcarpa
Lagerstroemia spp.
Meliosma pinnata
Mesua ferrea
Palaquium ellipticum
Pterocarpus spp.
Santalum album
Schefflera spp.
Tectona grandis
Terminalia alata
Ziziphus spp.

Other Plants [qa, ql, mp, map]

Chromolaena odorata
Coffea spp.
Dendrocalamus strictus
Lantana camara
Ochlandra scriptoria
Thea sinensis
Ziziphus spp.

FAUNA:

Mammals [ql, mp, dir]

Boar, Indian Wild
Cat, Jungle
Civet, Small Indian
Deer, Barking
Deer, Mouse
Deer, Spotted
Elephant, Indian
Fox, Indian
Hare, Indian
Hyena, Striped
Jackal
Leopard
Mongoose, Common
Otter, Common
Sambar
Tiger

Reptiles [ql, dir]

Crocodile, Marsh

Birds [ql, mp, dir]

Crow, House
Crow, Jungle
Dove, Indian Ring
Drongo, Black
Eagle, Greyheaded Fishing
Egret, Cattle
Egret, Large
Egret, Little
Egret, Smaller
Hoopoe
Junglefowl, Grey
Kite, Brahminy
Koel
Lorikeet, Indian
Myna, Common
Parakeet, Roseringed
Partridge, Grey
Peafowl, Common
Pigeon, Blue Rock
Robin, Indian
Sparrow, House
Sparrow-hawk
Spurfowl, Red
Teal, Common
Woodpecker, Small Yellownaped

Ichthyophaga ichthyaetus

There is no information on other fauna, or on locally threatened species. Salt licks (number unspecified) have been provided.

OCCURRENCE AND CONTROL OF DISEASE: No disease or epidemic has been reported from the sanctuary. About 40 percent of the livestock from adjacent villages have been inoculated. They are reportedly always checked while entering the sanctuary. The nearest veterinarian is at Sargur, 10 km away.

OTHER FACTORS AFFECTING HABITAT: Fire is a threat during the fire season. Precautionary measures are taken by engaging fire watchers.

WATER RESOURCES: The reservoir of the Nugu dam, forms part of the sanctuary and is a major water source for the wildlife. There are also three tanks [map], and two seasonal lakes inside the sanctuary [tp].

BUDGET: Budgetary expenditure incurred during 1990–91 was Rs. 3.30 lakhs and 1992–93 Rs. 5.05 lakhs.

MANAGEMENT PLAN: A Management Plan for the period 1990/91 to 1994/95 was prepared by the Deputy Wildlife Warden, Mysore, in December 1989, but has not yet been approved.

PERSONNEL: One ACF, one RFO, one Forester, three Forest Guards, and eight daily wage watchers [qa, Staff Mys.]. The sanctuary is in the overall charge of the ACF (WL), Mysore.

EQUIPMENT: One gun, one binocular and one walkie talkie.

RESEARCH AND MONITORING: None.

COMMUNITY INTERACTION PROGRAMMES: Wildlife films are shown regularly in the villages around the park.

HUMAN PRESENCE:

Rights and Leases: None

Habitation: There are no villages inside the sanctuary. The adjacent area has 27 villages with a population of 26,288.

Tourism: The sanctuary is open for tourists but details are not available.

Use By Other Government Agencies: Other Government agencies using the sanctuary include the PWD for 6 to 7 km of roads, and the Karnataka State Electricity Board (KSEB) for transmission lines along the sanctuary boundary, and for the dam and reservoir (approx. 600 ha.).

Miscellaneous: There have been an unspecified number of cases of livestock lifting and crop damage by wildlife, in surrounding villages. Compensation has been paid.

INFORMATION FOR VISITORS: The sanctuary has not yet been opened for tourism. However, the best months for visiting are from October to April when the weather is dry and wildlife viewing easy.

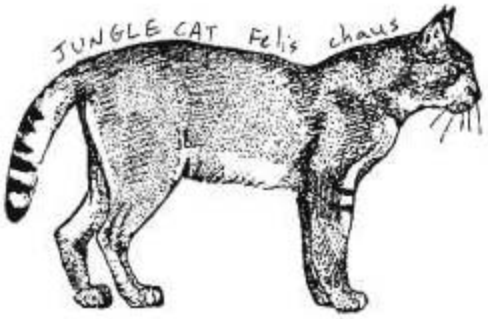
There is one PWD Guest House on the north-east boundary, and an FRH outside the sanctuary.

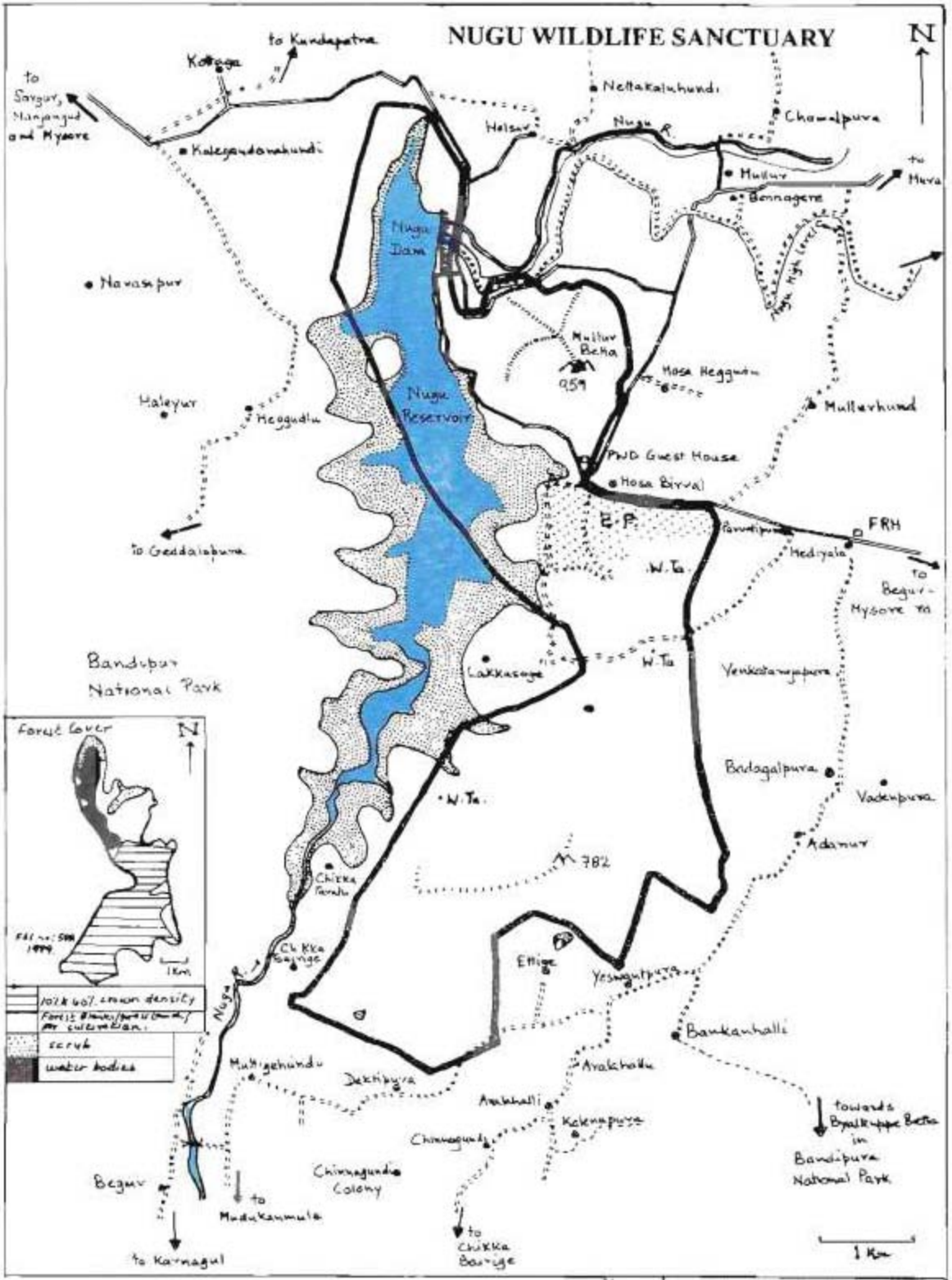
NGOs/INDIVIDUALS ASSOCIATED: There is one Honorary Wildlife Warden, Shri K. Ullas Karanth (please see Appendix 8 for address).

CONTACT ADDRESSES:

1) Asst. Conservator of Forests
   Wildlife Preservation Sub division
   Aranya Bhawan, Ashokpuram
   Mysore-570008
   Karnataka

2) Local in-charge :
   Forester
   Staff Quarters, Hosabirlwal village
   Heggadadevanakote Taluka
   Dist. Mysore-570001
   Karnataka




NUGU WILDLIFE SANCTUARY
N
to Kundapatna
Kottege
to Sargur, Nanjangud and Mysore
Kalegaudanahundi
Nettakaluhundi
Chowlpura
Nugu R.
Helsur
Mullur
to Hura
Bennagere
Nugu Dam
Nugu High Level Canal
Navaspur
Mullur Betta
959
Nugu Reservoir
Mosa Heggadu
Haleyur
Heggadlu
Mullavhund
PWD Guest House
Hosa Biryal
E.P.
FRH
Parvatipura
Hediyala
to Begur - Mysore via
to Geddalapura
W.Ta.
Bandipur National Park
Lakkasagre
Venkatarayapura
Forest Cover
Badagalpura
Vadakpura
Adamur
782
Chikka Parallu
Chikka Baragi
Nugu R.
Ettige
Yeswantpura
Bankanhalli
Multigehundu
Dekkipura
Avalkhalu
Avalkhalli
towards Byalkuppe Betta in Bandipura National Park
Kaknapura
Chinnagudi
Chinnagudi Colony
Begur
to Madakanmula
to Karnagul
to Chikka Baragi
1 Km
10 to 60% crown density
Forest Blanks/parallel lands/ for cultivation
scrub
water bodies
E.P.
Eucalyptus Plantations
W.Ta
Water Tank

PUSHPAGIRI WILDLIFE SANCTUARY

This sanctuary is named after the second highest peak in the Coorg Ghat forests [mp]. "The area consists of deep ravines and broken ridges and the country is difficult to access. The slope towards the west is generally very steep. The ridges on the upper slopes of the hills are devoid of tree growth. Along the stream courses, in the ravines and other better portions, there are tracts of evergreen forests of good growth. The sanctuary is drained by several streams and rivers" [mp]. Some spectacular waterfalls dot the area [tp], and the evergreen and semi-evergreen vegetation is typical of the Western Ghats.

LEGAL STATUS : Declared a sanctuary vide notification No. AHFF 173 FWL 87 (II) dated 2nd September, 1987 [notif.].

AREA AND ZONING : 10,292.15 ha. (102.92 sq. km) [notif]. No zoning [mp].

LOCATION: *District* Kodagu (Coorg); *Latitudinal range* 12°29'16" to 12°42'02" N; *Longitudinal range* 75°37'59" to 75°42'37" E [tp]; *Nearest town* Subrahmanya (9.5km) [tp]; *Nearest railhead* Subrahmanya (9.5km); *Nearest airport* Mangalore (144km) [tp].

APPROACHES: From Mangalore to Mercara in the south of the sanctuary (132.5km), from where the sanctuary is 11.5km away [tp]. Alternatively, from Bangalore to Mercara (247km), via Kushalnagar [tp].

TOPOGRAPHY AND CLIMATE: *Altitude* about 60 m [qa] to 1712 m, the highest point being Pushpagiri Peak, in the north [tp]; *Temperature* 10°C to 38°C; *Mean annual rainfall* 2000 mm [qa].

FLORA: Landsat imagery shows dense forest cover (40% crown cover and above) in the northern part of the sanctuary, but the rest of the area is under cloud and hill shadow. The forest types to be found include tropical evergreen forests (6689 ha), tropical semi-evergreen forests (1029 ha) and grasslands (2573 ha) [qa]. It is not clear what forest types these are, as per Champion and Seth's (1968) classification.

Trees [mp]

Acrocarpus fraxinifolius
Aglaia anamallayana
Albizia lebbeck
Artocarpus gomezianus
Artocarpus heterophyllus
Artocarpus hirsutus
Bauhinia racemosa
Canarium strictum
Carallia brachiata
Cinnamomum verum
Diospyros ebenum
Dipterocarpus indicus
Elaeocarpus tuberculatus
Kingiodendron pinnatum
Mesua ferrea
Naringi crenulata
Palaquium ellipticum
Pandanus fascicularis
Polyalthia fragrans
Toona ciliata
Vateria indica
Vitex negundo
Xanthophyllum flavescens

Other Plants [mp]

Calamus spp.
Ochlandra scriptoria
Ochlandra travancorica
Strobilanthes spp.
Tarenna asiatica

FAUNA:

Mammals [mp]

Boar, Indian Wild	Leopard-cat
Cat, Jungle	Macaque, Liontailed
Deer, Spotted	Porcupine, Indian
Elephant, Indian	Sambar
Gaur	Tiger
Leopard	

Reptiles [mp]

Cobra, Common	Python, Indian
Keelback, Green	Snake, Rat

No information on other fauna is available.

OCCURRENCE AND CONTROL OF DISEASE: No diseases amongst flora and fauna have been reported. The nearest veterinarian is at Somwarpet (20km) [qa].

OTHER FACTORS AFFECTING HABITAT: Fires reportedly occur in the grassy patches [mp], but information on their frequency and extent is not available. Fire counter measures are taken by the park authorities.

WATER RESOURCES: There are several streams and rivers flowing through the sanctuary, both perennial and seasonal [mp].

BUDGET: There was no separate budget till 1989–90 [qa]. Proposed funding for 1990–91 was Rs. 10.65 lakhs [mp], for 1991–92, Rs. 2 lakhs and for 1992–93, Rs. 5 lakhs.

MANAGEMENT PLAN: A Management Plan for the period 1990–1995 has been drawn up by the DCF, Wildlife Preservation Division, Mysore, and has been submitted for approval [mp].

PERSONNEL: One DCF is in charge of this and several other sanctuaries in the Mysore division. In addition there is one ACF, one RFO and an unspecified number of Foresters, Forest Guards and Watchers [mp].

EQUIPMENT: None [qa].

RESEARCH AND MONITORING : None [qa].

COMMUNITY INTERACTION PROGRAMMES: None [qa].

HUMAN PRESENCE:

Rights and Leases: None [qa].

Habitation: There are three enclosures within the sanctuary which are coffee plantations [qa]* and five villages outside these enclosures (tp). Details of population in these enclosures and villages, or in the settlements surrounding the sanctuary are not available.

Offences and Illegal Activities: None recorded.

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* The notification specifies six forest compartments in which a total of 507.75 ha. forms enclosures, legally excluded from the sanctuary. The specific location of these enclosures is not mentioned. Nor is it clear if the notification is referring to six separate enclosures, or a lesser or greater number spread over six forest compartments. The overlap, if any, between the notified enclosures and those shown on the map (taken from the wildlife map) is therefore unclear.

Grazing: Grazing is reportedly heavy in a section of the sanctuary [mp], but information on livestock population is not available.

Tourism: Tourists visit the sanctuary but records are not kept.

Use by Other Government Agencies: None.

Miscellaneous: There have been nine cases of livestock being lifted by predators, in adjacent areas, in the period 1988–91. These have been registered by the villagers, and accepted by the wildlife authorities for compensation. Damage to paddy is caused by Elephants within and around the sanctuary. In the period 1989–91 there has been an estimated loss of paddy worth Rs.10,000/- due to this. Compensation is not payable in such cases [qa].

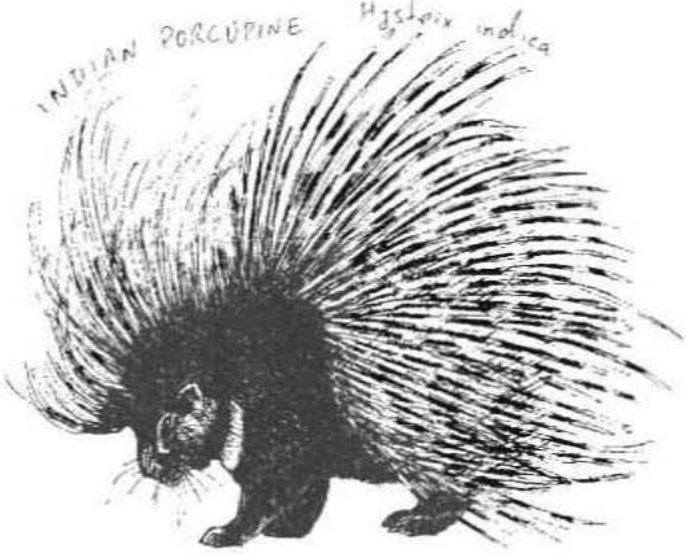
INFORMATION FOR VISITORS : The best periods to visit the sanctuary are from March to June, because of the lush regeneration of the forest due to pre-monsoon and monsoon showers, and October to January, due to good sighting of animals at water holes.* There are plans for forming trekking routes and camping grounds in the sanctuary [qa].

NGOs/INDIVIDUALS ASSOCIATED: None [qa].

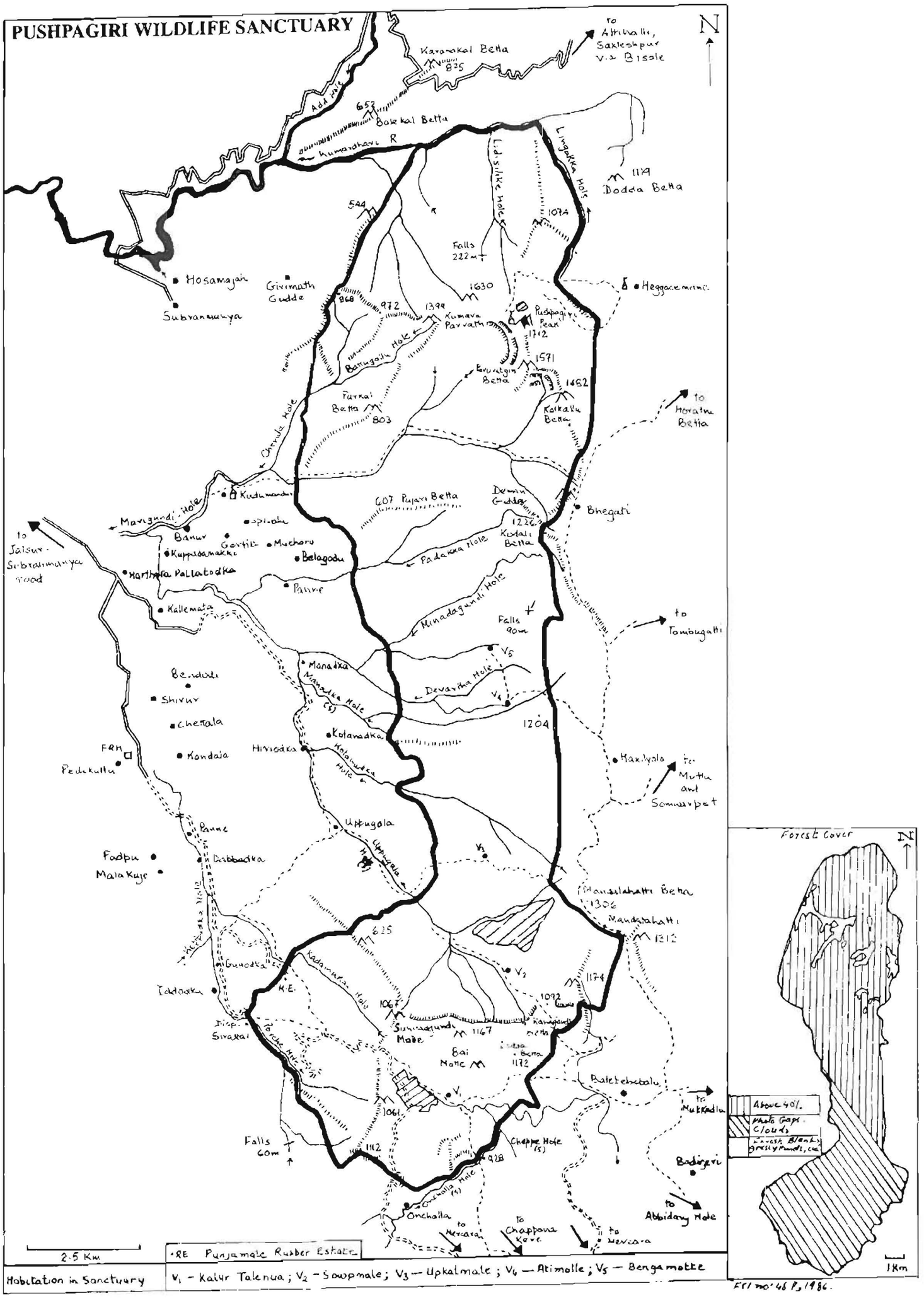
CONTACT ADDRESS:

1) Asst. Conservator Of Forests
   Wildlife Sub Division
   Madikeri - 571201
   Karnataka

2) Local in-charge:
   Range Forest Officer
   Wildlife Range
   Madikeri - 571201
   Karnataka



* Wildlife authorities have reported the existence of a Mathikarpena temple, of historical significance , inside the sanctuary. However, this could not be located on the map [qa].


PUSHPAGIRI WILDLIFE SANCTUARY
N
to Attihalli, Sakleshpur via Bisale
Karanakal Betta 875
Adda Pare
652 Bakkal Betta
Kumaradhara R
Lingakka Hole
1179 Dodda Betta
Lidsilike Hole
544
1078
Falls 222m
Hosamajan
Giriyanath Gudde
868
Subramanya
1630
Heggademane
972
1398 Kumara Parvatha
Pushpagiri Peak 1712
Bettagodu Hole
1571
Eruvatgiri Betta
1482
Parkal Betta 803
Chenda Hole
Kudumane
to Horatha Betta
607 Pujari Betta
Devana Gudde
Bhegati
Mavinagundi Hole
Banur
Gertie
Muchoru
Belagodu
1222
Kutali Betta
to Jalsur-Subrahmanya road
Padakka Hole
Kuppadamakki
Harthara Pallatadka
Panne
Kallemata
Minadagundi Hole
Falls 90m
to Tombugatti
Bendodi
Shivur
Chettala
Manadka
Manadka Hole
V5
Devaritha Hole
V4
1204
FRH
Pedekullu
Kandala
Hiriyadka
Kotanadka
Kolamadka Hole
Makiyala
to Muttu and Somavarpet
Uppugala
Uppugala Hole
Panne
Fadpu
Mala Kaje
Lakkadka
Kadamakka Hole
Mandalahatti Betta 1306
Mandalahatti 1312
625
Gumodka
V2
1174
1092
K.E.
Tadodka
1067
Kadamakka Hole
Disp. Sirakai
Sushrugundi Hole
1167
Kariguddi Betta
Bai Matte
1172
Bale Tekebalu
to Mukkadlu
V1
1061
Falls com
1112
Chappa Hole (S)
928
Badigeri
Onchalla Hole (S)
Onchalla
to Abbidary Hole
to Mercara
to Chappana Kave
to Mercara
2.5 Km
RE Punjamale Rubber Estate
Habitation in Sanctuary
V1 - Kalur Talenua; V2 - Sampmale; V3 - Upkalmale; V4 - Atimolle; V5 - Bengamotte
Forest Cover
N
Above 40%
Mixed Bamboo, grassy mundi, etc
1 Km
FSI no. 48 P, 1986.

RANEBENNUR BLACK BUCK SANCTUARY

Established in 1974 to protect a small population of Indian antelope (Blackbuck), Ranebennur also harbours the threatened Great Indian bustard. The sanctuary has two unconnected parts and comprises of degraded scrub forests, *Eucalyptus* plantations, open undulating country, and small seasonal streams [8th. Pl. Prop.]. Due to protection the Blackbuck population has gone up considerably [8th. Pl. Prop.].

LEGAL STATUS: Declared a sanctuary vide Notification No AFD–58. FWL–74, dated 17 June, 1974. Final notification has been issued in 1994, though the precise date is unclear [Appayya, Pers. Comm. 1994].

AREA AND ZONING: 11,900 ha. (119 sq. km.) An additional 101 ha of private land adjoining the eastern part are under acquisition proceedings. The Core Zone occupies 1,487 ha., the Buffer-cum-Tourism Zone, 10,413 ha.

LOCATION: *District* Dharwad; *Latitudinal range* 14°34'00" to 14°46'00" N [tp]; *Longitudinal range* 75°30'08" to 75°47'21" E [tp]; *Nearest town* Ranibennur* (4km); *Nearest railhead* Ranibennur (4 km from eastern part), Byadgi (4 km from western part); *Nearest airport* Hubli (138km) [8th. Pl. Prop, Road Map].

APPROACHES: The sanctuary lies on the Bangalore-Pune Highway (National Highway No. 4). From Bangalore proceed to Chitradurga (199 km), then to Devangere (66 km) and Harihar (15 km), and 21 km on to Ranibennur [SOI 1981]. Alternatively from Dharwad to Shiggaon (63 km) and 62.5 km on to Ranibennur via Haveri and Motibennur [SOI 1981].

TOPOGRAPHY AND CLIMATE: *Altitude* approximately 546.3 m [q1] to 762 m, the highest point being located in the south-east portion of the eastern part [tp]; *Temperature* 13°C to 38°C; *Mean annual rainfall* 619.4 mm.

FLORA: According to Landsat imagery, the northern section of the sanctuary has mostly scrub cover ** while the southern section has open forest cover (with less than 40% crown canopy) [Landsat 1986]. The forest type, as per the Champion and Seth (1968) classification, is not known. *Eucalyptus* plantations were raised extensively prior to the declaration of the sanctuary [q1] (covering 65% of the area [qa '91]), and along with Sandal *Santalum album*, Siris *Albizia lebbeck*, *Cassia* spp. continue to be raised even now. For fodder purposes *Stylosanthes* grass and Subabul *Leucaena leucocephala* have been introduced [qa '91]. About 100 ha. have been planted with cereal (jowar *Sorghum bicolor*, and bajra *Pennisetum typhoides*), groundnut *Arachis hypogaea* and horsegram *Dolichos biflorus* for Blackbuck to feed upon. The Forest Department has had to clearfell a 162 ha. *Eucalyptus* plot to provide more space for the Great Indian bustard [q1, qa '91].

Trees [q1, qa, mp, 8th. Pl. Prop.]

Acacia catechu
Albizia lebbeck
Albizia spp.
Anogeissus spp.
Bauhinia spp.
Carissa spp.
Cassia spp.
Chloroxylon swietenia
Eucalyptus spp.
Ficus spp.
Hardwickia binata
Leucaena leucocephala
Santalum album
Syzygium spp.
Terminalia spp.
Ziziphus spp.

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* The spelling of this town on the SOI toposheet is different from the spelling of the sanctuary in the notification.

** According to the SOI toposheets , this section is largely covered with plantations. However it is possible that these plantations were cut subsequently and now show up as scrub forest.

Other Plants [q1, qa, mp, 8th. Pl. Prop.]

Arachis hypogea
Calamus spp.
Capparis spp.
Cassia auriculata
Dodonaea viscosa
Dolichos biflorus
Hackelochloa granularis
Ochlandra scriptoria
Pennisetum glaucum
Pennisetum typhoides
Prosopis spp.
Sorghum bicolor
Stylosanthes spp.
Ziziphus spp.

FAUNA:

Mammals [q1, dir, 8th. Pl. Prop]

Antelope, Indian
Boar, Indian Wild
Fox, Indian
Hare, Indian
Hyena, Striped
Jackal
Langur, Common
Mongoose, Common
Otter, Common
Pangolin, Indian
Porcupine, Indian
Wolf

Reptiles [dir]

Cobra, Common
Crocodile, Marsh
Keelback, Green
Monitor, Common Indian
Python, Indian

Birds [dir, q1, 8th. Pl. Prop]

Bustard, Great Indian
Buzzard-eagle, White-eye
Cormorant, Littl
Darter
Egret, Cattle
Egret, Large
Egret, Little
Heron, Night
Heron, Pond
Ibis, Black
Ibis, White
Kestrel
Kingfisher, Lesser Pied
Kingfisher, Whitebreasted
Koel
Lapwing, Redwattled
Owl, Great Horned
Parakeet, Roseringed
Plover, Great Stone
Roller, Indian
Sandpiper, Wood
Spoonbill
Stork, Openbill
Stork, Painted
Swallow, Indian Cliff
Vulture, Indian Whitebacked
Woodpecker, Blackbacked

Information about other fauna is not available.

The sanctuary's most threatened species are the Great Indian bustard and the Blackbuck [q1, q3]; bustard eggs laid on the ground are trampled by the livestock that are permitted to graze in the buffer zone [q3]. The *Eucalyptus* plantations in the sanctuary do not suit the Blackbuck [q3]. The Blackbuck however, is revered by the local people as "Krishna mriga" ('Deer of Lord Krishna'), so there is not much poaching. Habitat protection and other measures have led to an increase in its population [8th. Pl. Prop.] An unspecified number of artificial salt licks have been provided.

OCCURRENCE AND CONTROL OF DISEASE: No disease or epidemic has been recorded in the sanctuary. While there is no vaccination programme for livestock, cattle passing through are occasionally checked. The nearest veterinarian is at Ranibennur, 4 km away.

OTHER FACTORS AFFECTING HABITAT: Flash floods may occur if there is sudden, very heavy rainfall. Fire is a threat in the dry season [8th. Pl. Prop]. The sanctuary was drought hit from 1981 to 1984, the drought months being June to December. Tanks were constructed and borewells dug, subsequently.

WATER RESOURCES: There are 11 artificial rainfed tanks, 25 waterholes that are filled daily in summer, five borewells, four dams, and a few seasonal streams.

BUDGET: Budgetary expenditure incurred during 1987–88 was Rs. 4.88 lakhs and during 1988–89 Rs. 5.05 lakhs.

MANAGEMENT PLAN: None. Depending upon funds available, yearly plans are drawn up for tourism, communication, fodder and water supply. A proposal for Central Government assistance also sets out management objectives and targets [8th. Pl. Prop.].

PERSONNEL: ACF (WL), Dharwad is in charge of the sanctuary and is assisted by two RFOs, two Foresters, 12 Forest Guards, and 16 Watchers on daily wages.

EQUIPMENT: Three double barrel guns, two pairs of binoculars, one jeep, one tractor-trailer for water tankers, and one van for tourists.

RESEARCH AND MONITORING: M. Krishnan surveyed the sanctuary in 1975, followed in 1979 by K. Ullas Karanth and Dr. Mewar Singh of the University of Mysore. The Great Indian bustard population in the sanctuary has been studied by N.T. Vijay Kumar (period not known), and by Asad Rahmani of the Bombay Natural History Society, from 1982 to 1984 [q3].

COMMUNITY INTERACTION PROGRAMMES: Film shows are held to educate villagers residing in the surrounding areas, one village being covered every month.

HUMAN PRESENCE:

Rights and Leases: Adjoining villages are allowed to graze their livestock in the buffer zone between June and November.

Habitation: There are no villages inside the sanctuary [q1]. There are 48 villages in the surrounding areas with a total population of 1,10,000 [q1]. In addition, the three large towns of Harihar, Motibennur, and Ranibennur, all nearby, have a combined population of 1,20,443 [qa '91].

Grazing: About 90,000 sheep graze inside the buffer area of the sanctuary.

Offences and Illegal Activities: Between 1979–80 and 1983–84, one case of illegal hunting was recorded, two of destruction of habitat and two of illegal grazing of cattle. Cattle have in fact been found grazing illegally in the core area. There is a certain amount of illegal tree-felling for industrial use and firewood, as also lopping, collection of twigs, leaves and NWFP by local villagers [q3].

Tourism: Ranebennur received 220 visitors in 1988–89.

Use by Government Agencies: The sanctuary is used by the PWD for roads (approx. 15 km), and by the KSEB for transmission lines (50 ha). There are two stone quarries in the sanctuary area [tp]* the current status of which is not known.

Miscellaneous: Wolves often attack sheep, but no compensation is payable. There is a lot of crop damage caused by Blackbuck and Indian wild boar, for which compensation is payable.

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* According to the sanctuary authorities, these quarries are adjacent to the sanctuary. According to the SOI toposheet, however, they are inside. The discrepancy could not be resolved.

INFORMATION FOR VISITORS: Entry permits are required for both vehicles and people on foot. The sanctuary is open throughout the year. There are four manned checkposts. Movement of private vehicles is allowed in the Buffer Zone only. Ranebennur is best visited between September and February when the Blackbuck are easily visible [q3]. The best period to sight the Great Indian bustard is from May to January [dir].

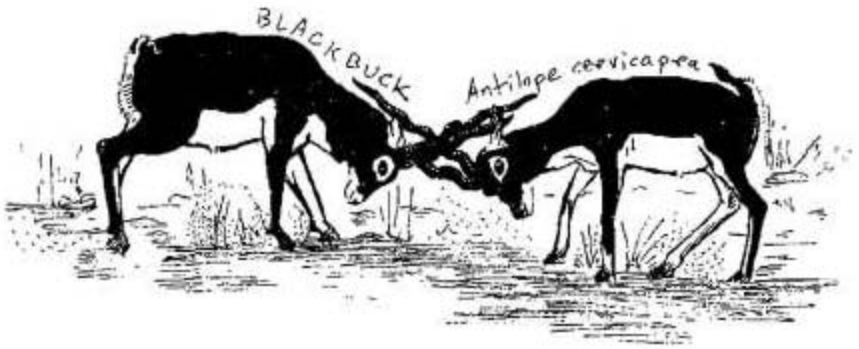
There is one Forest Resthouse inside, where tents are also available, and two resthouses outside.

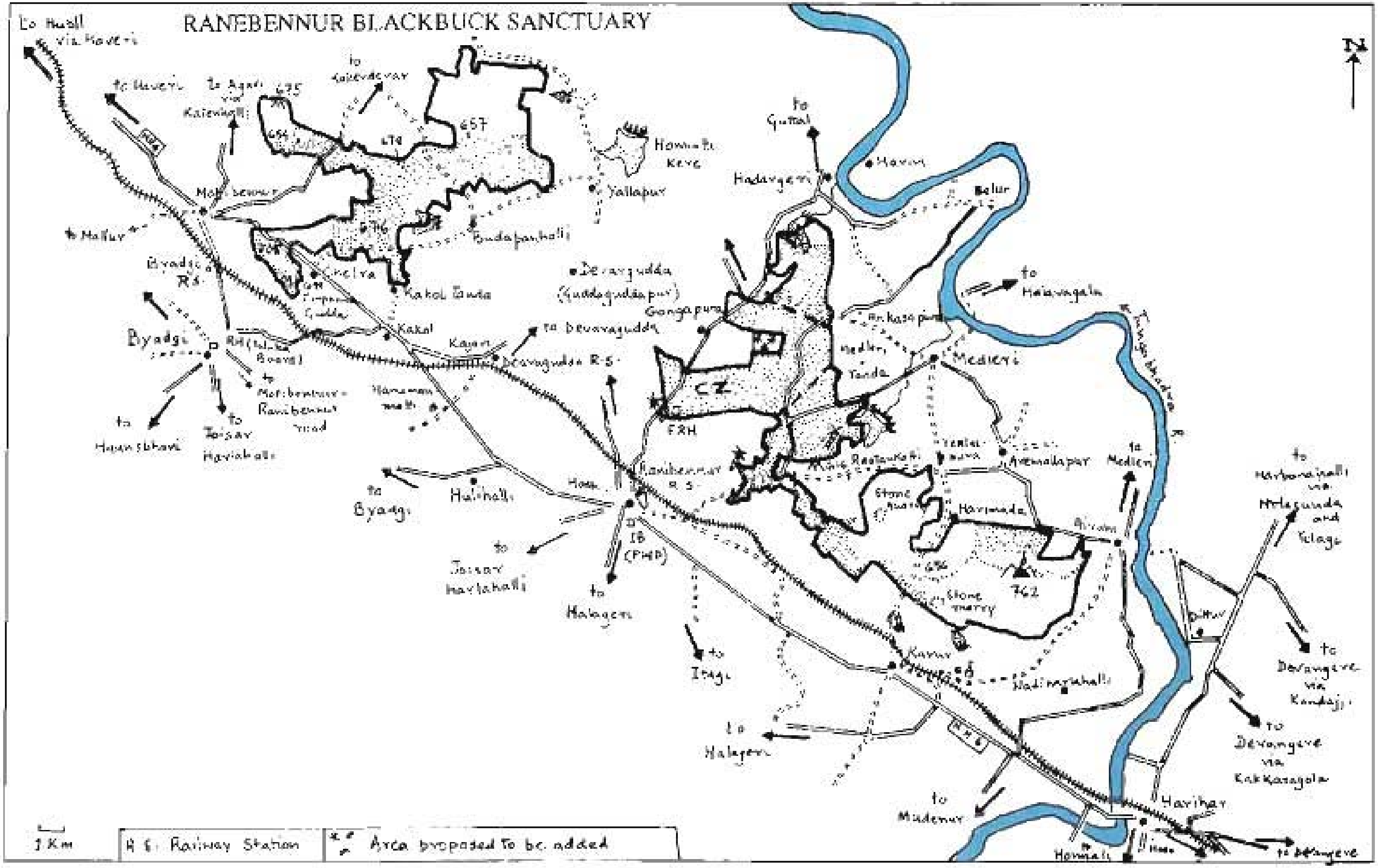
NGOs/INDIVIDUALS ASSOCIATED: While there is no Honorary Wildlife Warden specifically for the sanctuary, there are two HWLW's for Dharwad District, Dr. J.C. Uttangi and Shri S.F. Uppin, IFS (Retd) (please see Appendix 8 for addresses).

CONTACT ADDRESSES:

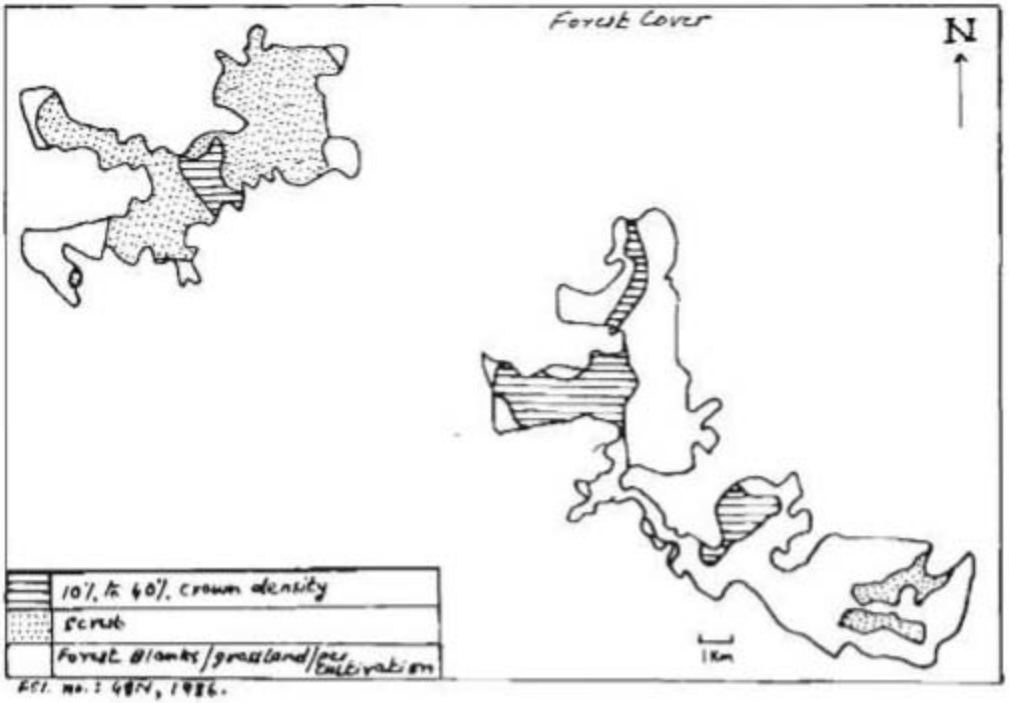
1) Assistant Conservator of Forests
   Wildlife Sub-division
   Belgaum Road
   Dharwad-580008
   Karnataka

2) Local in-charge:
   Range Forest Officer (Wildlife)
   Ranibennur-Medleri Road
   Ranibennur Taluka
   Dist. Dharwad-580001
   Karnataka




RANEBENNUR BLACKBUCK SANCTUARY
N
to Hubli via Haveri
to Haveri
675
657
Honnatti Kere
Yallapur
to Guttal
Hadageri
Belur
Motebennur
Byadgi R.S.
Byadgi
Kakol Tanda
Kakol
Devarguddo (Guddagudda pur)
Gangapura
to Devaragudda
CZ
FRH
Medleri
Medleri Tanda
Avemallapur
to Medleri
Ranebennur R.S.
IB (FHP)
Halihalli
to Byadgi
to Halageri
to Itagi
Harimada
Stone quarry
762
Karur
Nadiharahalli
Harihar
Honnali
to Devangere
R.S. Railway Station
Area proposed to be added
1 Km

RANEBENNUR BLACKBUCK SANCTUARY



Ref. No: 48/4, 1986.

RANGANATHITTU BIRD SANCTUARY

This tiny bird sanctuary comprises two unconnected small clusters of islands in the Kaveri river. It is one of South India's oldest sanctuaries, having been established in 1940 by the then Maharaja of Mysore. Though the sanctuary notification does not include the water around the islands, a calm stretch of water partially impounded by a weir is managed for conservation by the wildlife authorities [fv]. This weir was built in the 17th century by Kanthirava Narasaraj, the ruler of Mysore [Neginhal 1983]. Ranganathittu attracts a large number of nesting water-birds, as also a lot of tourists. The Brindavan Gardens, a major tourist attraction, are just 2.5 km. upstream from the sanctuary boundary.

LEGAL STATUS: Declared a sanctuary vide Notification No. AF 19/FT.243–39–4 under the Mysore Game and Fish Preservation Act (II of 1901) on July 1, 1940 [notif]. Final notification has been issued by the Asst. Commissioner, Pandavapura during 1991–92, specific details of which are not available.

AREA AND ZONING: 67.50 ha. (0.67 sq.km). There is no zoning.

LOCATION: *District* Mysore [tp]; *Latitudinal range* 12°21'33" to 12°23'05" N [tp] and 12°23'49" to 12°25'19" N; *Longitudinal ranges* 76°38'59" to 76°39'52" E [tp], and 76°47'24" to 76°48'29" E [tp];* *Nearest town* Shrirangapattana (2.5 km); *Nearest railhead* Shrirangapattana (2.5 km); *Nearest airport* Mysore (16km) [mp].

APPROACHES: From Mysore (16km) on the Mysore-Bangalore highway. From Bangalore, Shrirangapattana is 125 km [St map].

TOPOGRAPHY AND CLIMATE: *Altitude* 674m to 680 m (highest contour line) [tp]; *Temperature* ranges from 16°C to 35°C; *Mean annual rainfall* approx. 800 mm [Das Gupta 1976].

FLORA: The sanctuary comprises 10 ha of Dry Deciduous Scrub Forest 5/DS1 [q1], and the rest either Dry Tropical Riparian 5/IS1 or Tropical Riparian Fringing Forests 4E/RS1 (the wildlife authorities could not specify which) [fv]. Thorny bamboo *Bambusa arundinacea* was introduced in 1980 for habitat improvement. Mixed plantations of *Eucalyptus* spp. (5 ha), *Ficus* spp. (2 ha), Jamun *Syzygium cumini* (1 ha) and *Acacia* spp. (2 ha) were carried out in 1983–84. Floral species considered important for the nesting and roosting of birds are *Terminalia arjuna*, *Pandanus* spp., *Syzygium cumini*, and Pongam *Derris indica*.

Trees [q1, mp, fv, Neginhal 1983, Gantzer & Gantzer 1983]

Acacia auriculiformis	*Pandanus* spp.
Acacia nilotica	*Psidium guajava*
Acacia spp.	*Salix* spp.
Derris indica	*Samanea saman*
Eucalyptus spp.	*Syzygium cumini*
Ficus racemosa	*Syzygium* spp.
Ficus spp.	*Terminalia arjuna*
Mangifera indica	*Vitex* spp.

Other Plants [q1, mp, fv, Neginhal 1983, Gantzer & Gantzer 1983]

Acacia spp.	*Lantana* spp.
Bambusa arundinacea	*Leea indica*
Caesalpinia bonduc	*Themeda triandra*
Cypress spp.	*Ziziphus oenoplia*

* The sanctuary is in two parts, hence the two sets of coordinates.

FAUNA:

Mammals [dir, fv, Neginhal 1983, mp]

Boar, Indian Wild
Fox, Flying
Macaque, Bonnet
Otter, Common

Reptiles [dir, fv, mp]

Cobra, Common
Crocodile, Marsh
Krait, Banded
Krait, Common
Keelback, Green
Python, Indian
Snake, Green
Snake, Rat

Birds: see Appendix A

OCCURRENCE AND CONTROL OF DISEASE: No cases of disease or epidemics have been reported. The nearest veterinarian is at Shrirangapattana, 2.5 km away.

OTHER FACTORS AFFECTING HABITAT: Floods are the major threat to the sanctuary. Water from the Krishnarajasagar Dam about 10km upstream is often released suddenly, especially during the monsoons when the reservoir threatens to overflow [fv]. This happens about three or four times a year and devastates nests, eggs, and nestlings at low level vegetation. In one of the worst recent cases, in 1991, over 600 nests were washed away, scores of trees destroyed, and much of the sanctuary submerged [Sridhar 1991]. Subsequently repairs to the islands and planting of tall trees has been taken up.

WATER RESOURCES: The Kaveri river forms the main water source [fv].

BUDGET: Rs. 4 lakhs each for 1991–92 and 1992–93.

MANAGEMENT PLAN: A Management Plan for the period 1990–91 to 1994–95 was prepared in December 1989, by the DCF (WL), Mysore, and is awaiting approval [mp].

PERSONNEL: One Forester, seven Forest Guards, seven boatmen and five watchers (temporary) [mp,fv]. The Forester is also in charge of Melkote and Adichunchunagiri Sanctuaries [fv]. The sanctuary is in the overall charge of the ACF (WL), Mysore.

EQUIPMENT: Two guns, two pairs of binoculars, one walkie talkie and nine boats for tourist use [q1, fv].

RESEARCH AND MONITORING: None.

COMMUNITY INTERACTION PROGRAMMES: Films on wildlife are shown periodically to villagers [fv].

HUMAN PRESENCE:

Rights and Leases: None

Habitation: There is no habitation inside. There are 14 villages in the adjoining area with a total population of 5,600 [qa '91]. Shrirangapattana city and Ganjam town lie between the two parts of the sanctuary.

Grazing: Illegal grazing has been reported from one of the islands [mp].

Offences and Illegal Activities: There were two cases of hunting recorded in 1982–83. Illegal collection of 'cheeni' (a sedge of the *Cypress* family) and Guava *Psidium guajava* fruit also reportedly takes place [mp].

Tourism: The sanctuary received 80,915 visitors in 1988–89, and 53,134 in 1989–90.

Use by Other Government Agencies: None.

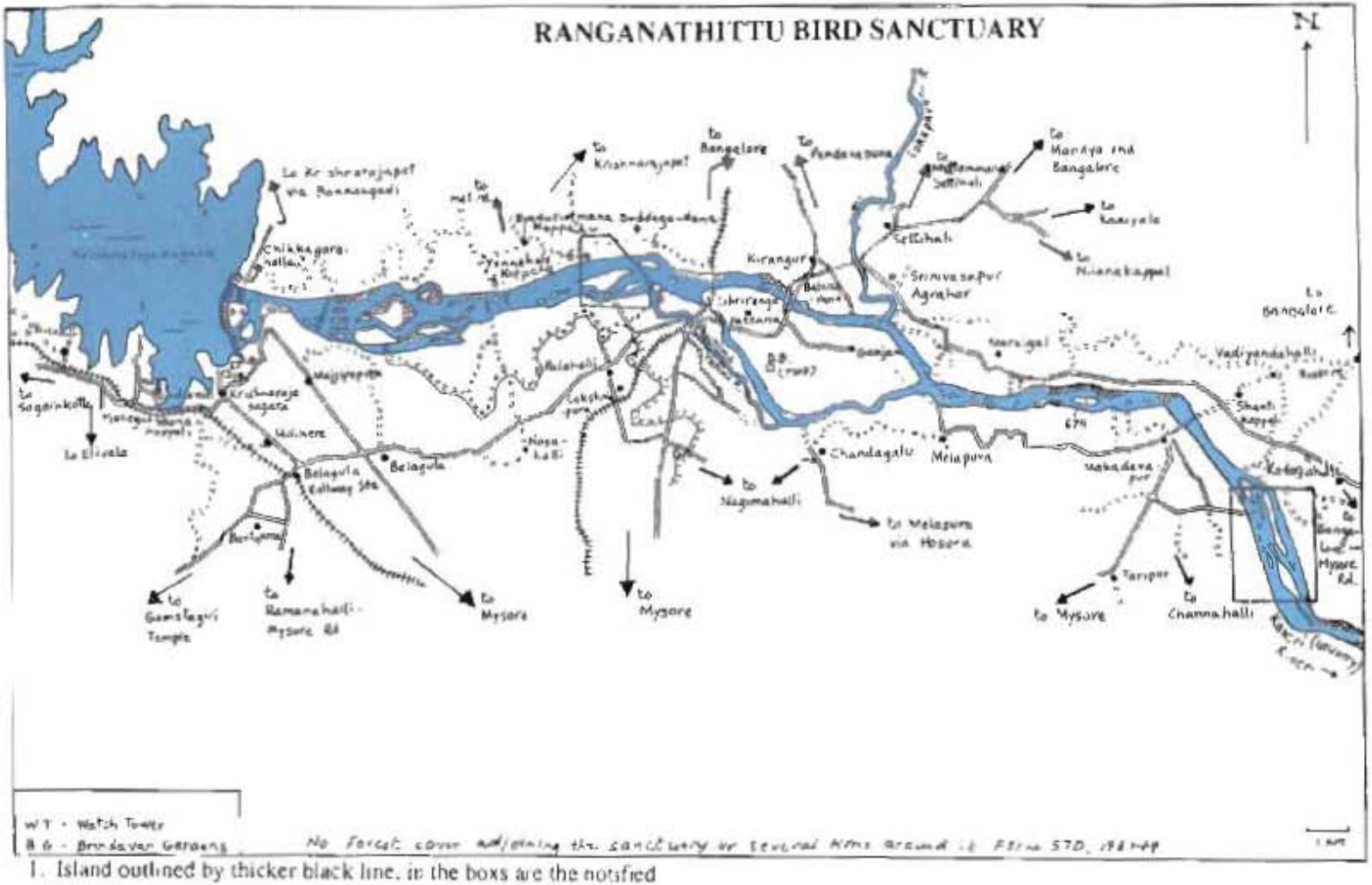
INFORMATION FOR VISITORS: Entry permits are required by visitors. A small section of the sanctuary, along the banks of the river, is open to tourists on foot and cycle, and about half the area is accessible by boat. Ranganathittu is best visited between June and November when nesting activity is at its height [Note. Rang. undated]. Two watchtowers have been constructed, one on the southern bank and one on an island [fv]. Accommodation for visitors is available at Shrirangapattana and Krishnarajasagar.

NGOS/INDIVIDUALS ASSOCIATED: There is one Honorary Wildlife Warden, Shri K. Ullas Karanth (see Appendix 8 for address).

CONTACT ADDRESSES:

1) Conservator of Forests
   Wildlife Preservation Division
   Aranya Bhavan, Wood Yard
   Ashokapuram
   Mysore 570008
   Karnataka

2) Local in-charge:
   Forester
   Palahalli
   Shrirangapattana Taluka
   Mandya -571401
   Karnataka



1. Island outlined by thicker black line. in the boxs are the notified protected areas.

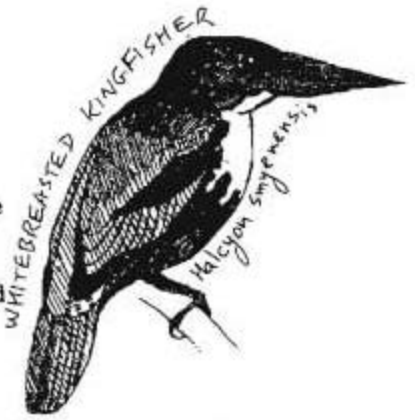
2. Exact boundaries of the sanctuary are unclear from the 1940 notification,since it gives island names which are not in use today. Notification also clearly indicates that sanctuary's western boundary starts 2 Km down stream of the Krishnarajasagar dam.

According to the wildlife a

APPENDIX A

Birds: [dir, fv, Neginhal 1983, mp, Baskaran, pers. comm., IISc 1985]

Barbet, Crimsonbreasted
Barbet, Small Green
Bee-eater, Green
Bulbul, Redvented
Bulbul, Redwhiskered
Bulbul, Whitebrowed
Cormorant
Cormorant, Little
Crow, Jungle
Crow-pheasant
Darter
Dove, Spotted
Duck, Spotbilled
Eagle, Crested Serpent
Egret, Cattle
Egret, Large
Egret, Little
Egret, Smaller
Flowerpecker, Tickell's
Flycatcher, Whitebrowed Fantail
Harrier, Marsh
Heron, Grey
Heron, Night
Heron, Pond
Heron, Purple
Hoopoe
Ibis, Black
Ibis, White
Iora, Common
Kingfisher, Common
Kingfisher, Lesser Pied
Kingfisher, Storkbilled
Kingfisher, Whitebreasted
Kite, Brahminy
Kite, Pariah
Koel
Lapwing, Redwattle
Magpie-Robin
Minivet, Small
Munia, Blackheaded
Myna, Brahminy
Myna, Common
Myna, Jungle
Osprey
Parakeet, Roseringed
Pigeon, Blue Rock
Plover, Great Stone
Sandpiper, Common
Shag, Indian
Spoonbill
Stork, Openbill
Stork, Painted
Stork, Whitenecked
Sunbird, Purple
Sunbird, Purplerumped
Swallow
Swallow, Indian Cliff
Swallow, Wiretailed
Tailorbird
Teal, Large Whistling
Teal, Lesser Whistling
Tern, Indian River
Wagtail, Large Pied
Weaver Bird, Blackthroated
Weaver Bird, Streaked



SHARAVATHI VALLEY WILDLIFE SANCTUARY

Situated in the Western Ghats, this sanctuary comprises of dense evergreen and semi-evergreen forests. Nearly half of the sanctuary consists of the Linganamakki Reservoir on the Sharavathi River [tp]. Mookambika Sanctuary adjoins the area to the south-west.

LEGAL STATUS: Declared a sanctuary vide Notification No. AFD.70.FWL.71 dated 20 April, 1972. Forests in this sanctuary had been declared Reserve Forests on various occasions between 1900 and 1930. Final notification has been issued in 1994, though the precise date is unclear [Appayya, Pers. Comm. 1994].

AREA AND ZONING: 43,123 ha. (431.23 sq.km.). Area at time of declaration in 1972 is unknown, as it was apparently not mentioned in the notification. Subsequently on 27 June, 1974, the area was altered to the present size vide Notification No. AFD.22.DWL 74 [Notif]. Zoning is proposed.

LOCATION: *District* Shimoga; *Latitudinal range* 13°54' 10" to 14°16' 31" N [tp]; *Longitudinal range* 74°38' 32" to 74°59' 45" E [tp]; *Nearest town* Kargal (1km) [tp]; *Nearest railhead* Talguppa (6.5 km to the north-east) [tp]; *Nearest airport* Mangalore (206.5 km) [tp].

APPROACHES: From Bangalore to Talguppa (352 km) via Tumkur, Shimoga, and Sagar [SOI 1981], then 6.5 km to sanctuary. From Mangalore (206.5 km) via Bhatkal [St map].

TOPOGRAPHY AND CLIMATE: *Altitude* 300 m [q1] to 1102 m, the highest point being located in the south-west [tp]; *Temperatures* 8° C to 33° C; *Mean annual rainfall* 3000–3700 mm [mp, qa'91].

FLORA: According to Landsat imagery, the area in and around the sanctuary comprises of closed forest cover (crown density 40% and above), interspersed with patches of non-forest areas [Landsat 1986]. Forest types include Lateritic Semi-Evergreen 2/E4 (32,495 ha), Southern Hilltop Tropical Evergreen Forests 1A/C3 (10,500ha), and small stretches of West Coast Tropical Evergreen Forests 1A/C4, and West Coast Semi-Evergreen Forests 2A/C2 [mp, q1]. Mixed plantations of *Acacia* spp., *Pinus* spp., *Poeciloneuron indicum*, *Casuarina equisetifolia*, *Eucalyptus* spp., *Acacia auriculiformis*, Jamun *Syzygium cumini*, Indian copal *Vateria indica*, and Mango *Mangifera indica* have been raised. Between 1980 and 1982, 220 ha. were planted for fuelwood, and in the next two years, 90 ha. for wildlife habitat. There are also some small Cashew plantations [tp].

The weed Eupatorium *Chromalaena odorata* has infested the eastern part of the sanctuary [mp].

Trees and *Other Plants:* See Appendix A

FAUNA:

Mammals [q1, dir, qa, mp]

- Bear, Sloth
- Boar, Indian Wild
- Deer, Barking
- Deer, Mouse
- Deer, Spotted
- Dog, Indian Wild
- Gaur
- Hare, Indian
- Jackal
- Langur, Common
- Leopard
- Loris, Slender
- Macaque, Bonnet
- Macaque, Lion tailed
- Mongoose, Common
- Otter, Common
- Pangolin, Indian
- Porcupine, Indian
- Sambar
- Squirrel, Common Giant Flying
- Tiger

Reptiles [q1]

Cobra, Common
Cobra, King
Krait, Common
Monitor, Common Indian
Python, Indian
Snake, Common Vine
Snake, Rat

Birds (see Appendix B)

No information on other fauna is available. 247 salt licks are provided for the animals. An enclosure has been set up for the captive breeding of Indian chevrotain (Mouse deer) [qa]*.

OCCURRENCE AND CONTROL OF DISEASE: No occurrence of disease or epidemics has been reported. Between 80 and 90 percent of livestock from both sanctuary and adjoining villages are inoculated by the Animal Husbandry Department [q1]. Livestock passing through are occasionally checked for vaccination. The nearest veterinarian is at Kanjavalli, on the sanctuary's south-central boundary [tp].

OTHER FACTORS AFFECTING HABITAT: None.

WATER RESOURCES: Nearly half the sanctuary's area consists of the northern portion of the Linganamakki Reservoir [tp]. The Talakalale Reservoir adjoins the sanctuary's northern boundary [tp]. In addition, there are 12 perennial streams, several seasonal ones [tp], as well as 40 artificial tanks, of which 21 are perennial [mp].

BUDGET: Budgetary expenditure incurred during 1987–88 was Rs. 8.55 lakhs, and during 1988–89, Rs. 8.02 lakhs.

MANAGEMENT PLAN: A management plan for the period 1990–95 has been drafted by the ACF (WL), Shimoga, and submitted to the Chief Wildlife Warden for approval.

PERSONNEL: One RFO, one Forester, three Forest Guards, and one Driver on daily wages.

EQUIPMENT: Two wireless sets, one fixed and one mobile, one manpack, two rifles, and one jeep [mp].

RESEARCH AND MONITORING: None.

COMMUNITY INTERACTION PROGRAMMES : Nature camp facilities have been provided to conduct classes for rural youth and nature lovers.

HUMAN PRESENCE

Rights and Leases: Villagers, both from sanctuary villages and those in adjoining areas, are allowed free grazing for their livestock throughout the sanctuary. Villagers living in the sanctuary have the right to cultivation (over 500ha), agriculture (2500ha) and burial grounds (5ha). They are also permitted to collect fuelwood, grass for thatching, wood for timber, and leaves [mp]. Plantations are being raised by the Mysore Paper Mills, and the Karnataka Plywood Ltd.

Habitation: There are 121 villages inside the sanctuary, of which 59 are in enclosures,** with a total population of 19,600 [qa'91]. The adjoining areas have 240 villages, with a total population of 30,400 [qa'91].

Grazing: A total of 14,500 heads of livestock are reported to graze inside the sanctuary.

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* Its location has not been ascertained.

** The enclosures comprise private land managed by revenue authorities. Their area is not included in the total area of the sanctuary [qa'91]. According to Survey of India toposheets there are 111 villages inside the sanctuary in 48 enclosures. The discrepancy could not be resolved.

Offences and Illegal Activities: Three cases of illegal hunting have been recorded between 1979–80 and 1983–84. Illegal cultivation over an area of 700ha is being carried out. Some smuggling of cane by villagers is reported, though no offences have been recorded [mp].

Tourism: No visitor records are maintained. A Tourism Zone of 5753 ha is being developed.

Use by Other Government Agencies: The Territorial Wing of the Forest Department carries out plantations [mp]. It retains the right to fell trees for pulp, timber and firewood, lop and collect fallen trees for timber, and collect NWFP in the Buffer Zone. The extraction of green timber has however, been completely stopped since 1986. The Forest Department has the right to quarry in an area of 5ha. Also operating inside are the Karnataka Power Corporation for hydel generation at the reservoirs (area 5000 ha) and the Karnataka State Electricity Board for transmission lines (area 500 ha).

Miscellaneous: There was one human fatality in 1982–83, caused by Gaur. 75 cases of livestock lifting, and one case of crop damage (caused by Gaur), were recorded between 1979–80 and 1983–84 and compensation was paid.

INFORMATION FOR VISITORS: Vehicles have to pass through a checkpost while entering or leaving. There are two entry points manned by the Territorial Wing of the Forest Department. Entry is prohibited between 6pm and 6 am. Buses pass through the sanctuary, on the Kargal Sagar and Bhatkal-Jog highways.

The sanctuary is best visited between November and May which are the dry months. Accommodation is available in a number of resthouses inside and in the adjoining areas.

NGOS/INDIVIDUALS ASSOCIATED: There are two Honorary Wildlife Wardens for the sanctuary, Shri Devangi Profulla Chandra and Shri M.R. Yajnarayana Bhat (for addresses, please see Appendix 8).

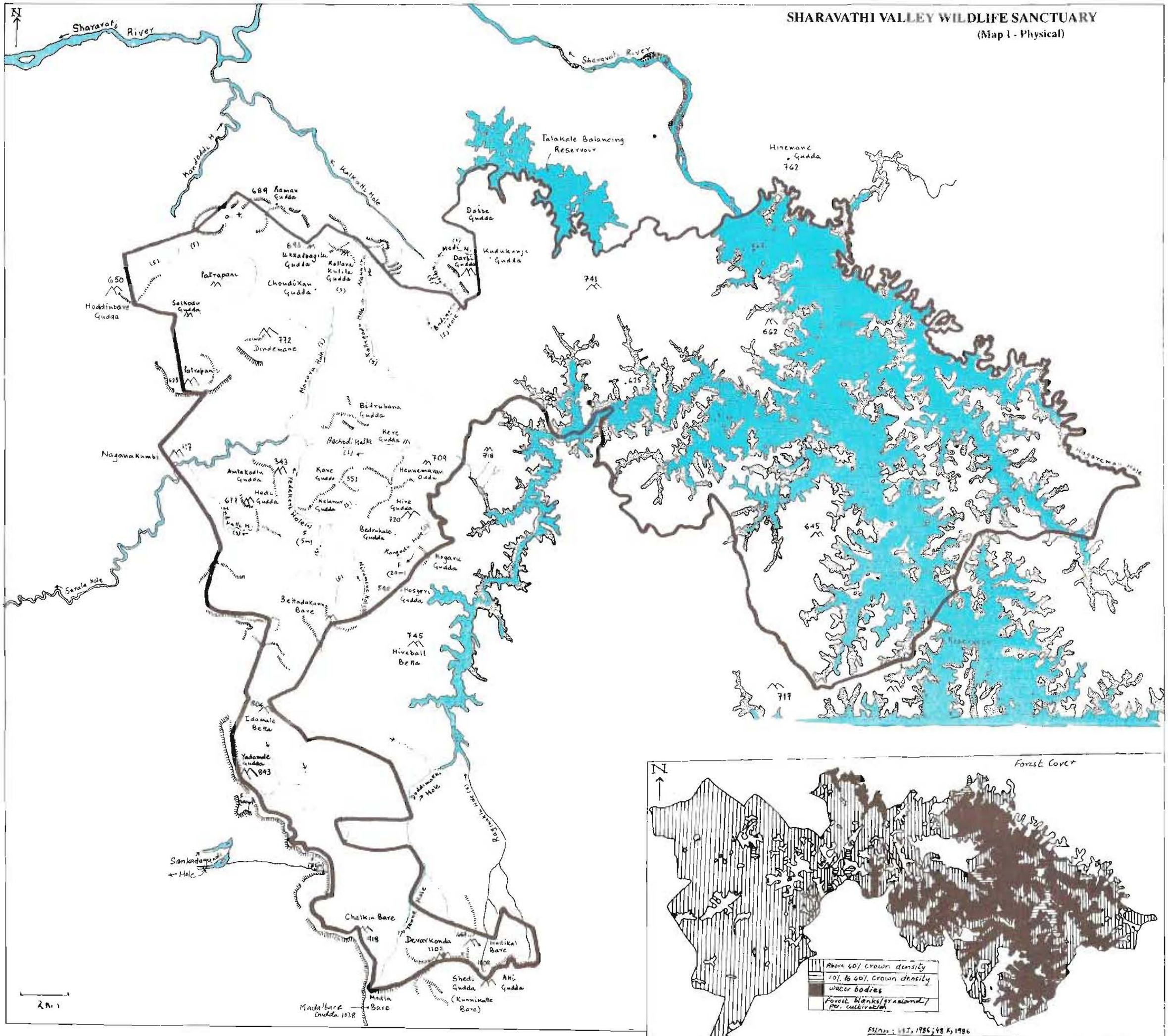
CONTACT ADDRESSES:

1) Deputy Conservator of Forests (DCF)
Shimoga Wildlife Division
1st Cross, Jayanagar
Shimoga-577201
Dist. Shimoga
Karnataka

2) Local in-charge:
Range Wildlife Warden (RFO)
Sharavathi Sanctuary
Kargal-577421
Sagar Taluka
Dist. Shimoga
Karnataka

SHARAVATHI VALLEY WILDLIFE SANCTUARY

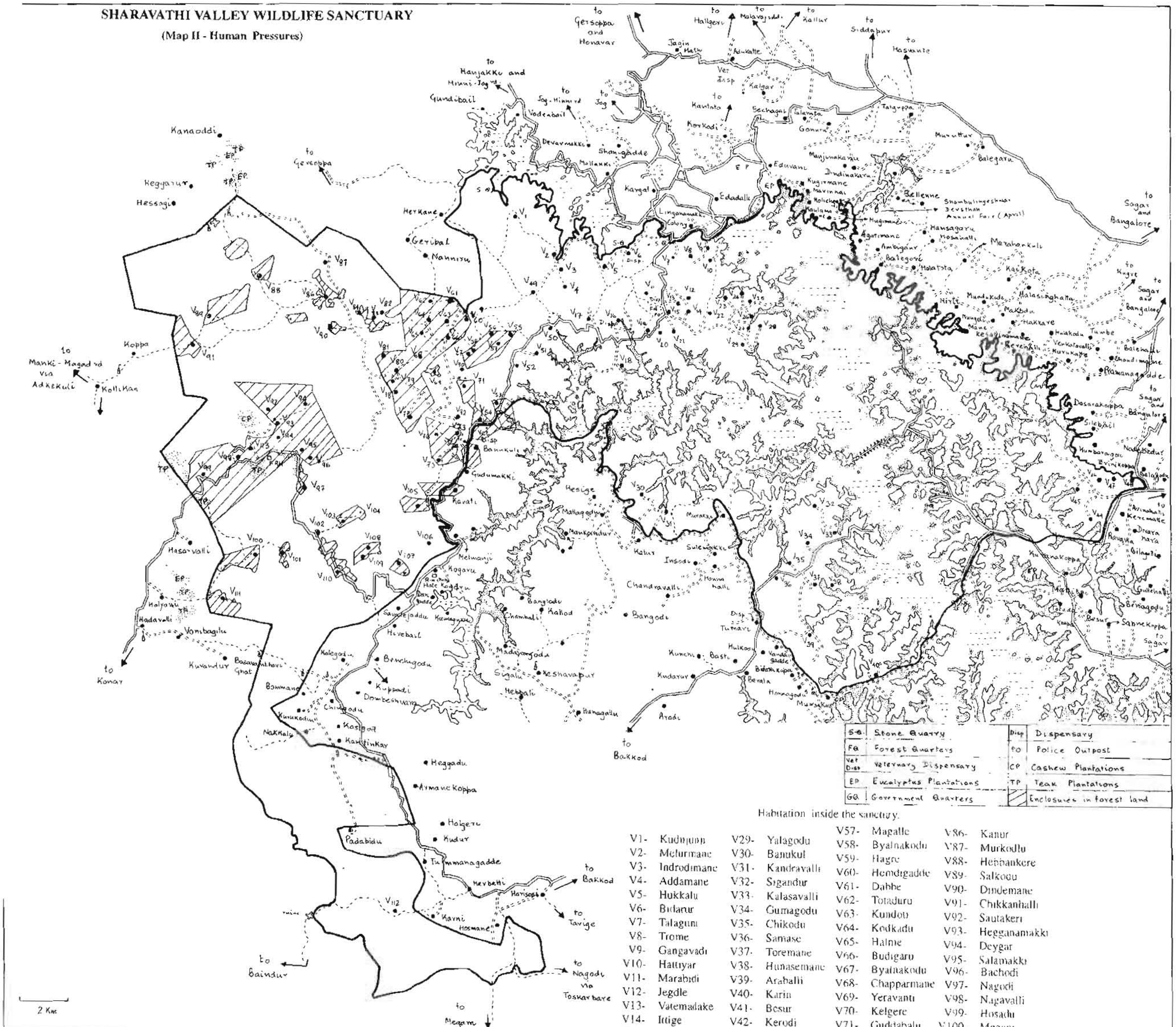
(Map 1 - Physical)



FSI, 1986; KS, 1986

SHARAVATHI VALLEY WILDLIFE SANCTUARY

(Map II - Human Pressures)



Habitation inside the sanctury.

				V57-	Magalle	V86-	Kanur
V1-	Kudujunn	V29-	Yalagodu	V58-	Byalnakodu	V87-	Murkodlu
V2-	Melurmane	V30-	Banukul	V59-	Hagre	V88-	Hebbankere
V3-	Indrodimane	V31-	Kandravalli	V60-	Hemdigadde	V89-	Salkodu
V4-	Addamane	V32-	Sigandur	V61-	Dabbe	V90-	Dindemane
V5-	Hukkalu	V33-	Kalasavalli	V62-	Totaduru	V91-	Chikkanhalli
V6-	Bidarur	V34-	Gumagodu	V63-	Kundou	V92-	Sautakeri
V7-	Talaguni	V35-	Chikodu	V64-	Kodkadu	V93-	Hegganamakki
V8-	Trome	V36-	Samase	V65-	Halme	V94-	Deygar
V9-	Gangavadi	V37-	Toremane	V66-	Budigaru	V95-	Salamakki
V10-	Hattiyar	V38-	Hunasemane	V67-	Byalnakodu	V96-	Bachodi
V11-	Marabidi	V39-	Araballi	V68-	Chapparmane	V97-	Nagodi
V12-	Jegdle	V40-	Karin	V69-	Yeravanti	V98-	Nagavalli
V13-	Vatemadake	V41-	Besur	V70-	Kelgere	V99-	Hosadu
V14-	Ittige	V42-	Kerodi	V71-	Guddabalu	V100-	Megam
V15-	Aralagodu	V43-	Ambargodlu	V72-	Nelnele	V101-	Belegi
V16-	Mandavalli	V44-	Hallikeradi	V73-	Halkanda	V102-	Kelanur
V17-	Aravadi	V45-	Chikka Mattur	V74-	Bilgar	V103-	Harvadi
V18-	Muppani	V46-	Yaransari	V75-	Halgodu	V104-	Kalkere
V19-	Kasakoppa	V47-	Basrani	V76-	Gubagodu	V105-	Mayalli
V20-	Vartekodalu	V48-	Hunalu	V77-	Kanchigadde	V106-	Kangodu
V21-	Alagodu	V49-	Attigodu	V78-	Kanapagaru	V107-	Bhimeshvara
V22-	Samba	V50-	Bilkandur	V79-	Hosgadde	V108-	Kedagodu
V23-	Bannumane	V51-	Halavalli	V80-	Kirgaru	V109-	Sulemane
V24-	Dambekai	V52-	Hosagadde	V81-	Yadakeri	V110-	Chandemane
V25-	Kanchikai	V53-	Herur	V82-	Togachi	V111-	Arkala
V26-	Honnemakki	V54-	Konjavalli	V83-	Gujaralli	V112-	Birarmane
V27-	Nandodi	V55-	Makkimane	V84-	Kallugodlu	V113-	Hosarbail
V28-	Kanagalghatta	V56-	Nadramagalle	V85-	Belur	V114-	Totadamane

APPENDIX A

Trees [q1, mp, qa, Pascal 1982]

Acacia auriculiformis
Acacia catechu
Acacia ferruginea
Acacia polycantha
Acacia spp.
Acrocarpus fraxinifolius
Aegle marmelos
Ailanthus triphysa
Alangium salvifolium
Albizia amara
Albizia chinensis
Albizia lebbeck
Albizia odoratissima
Albizia procera
Alseodaphne semecarpifolia
Alstonia scholaris
Anthocephalus chinensis
Antiaris toxicaria
Aporosa lindleyana
Arenga wightii
Artocarpus gomezianus
Artocarpus heterophyllus
Artocarpus hirsutus
Artocarpus spp.
Atalantia monophylla
Azadirachta indica
Bischofia javanica
Bombax spp.
Borassus flabellifer
Buchanania lanzan
Butea monosperma
Butea superba
Calophyllum apetalum
Calophyllum elatum
Calophyllum spp.
Canarium strictum
Carallia brachiata
Carallia lucida
Careya arborea
Caryota urens
Cassia fistula
Casuarina equisetifolia
Chromolaena odorata
Chukrasia tabularis
Cinnamomum iners
Cinnamomum spp.
Cinnamomum zeylanicum
Crateva magna
Dalbergia latifolia
Dillenia pentagyna
Diospyros candolleana
Diospyros ebenum
Diospyros montana
Diospyros oocarpa
Dipterocarpus indicus
Elaeocarpus oblongus
Elaeocarpus serratus
Elaeocarpus tuberculatus
Emblica officinalis
Ervatamia heyneana
Erythrina variegata
Eucalyptus spp.
Evodia lunu-ankenda
Ficus amplissima
Ficus benghalensis
Ficus callosa
Ficus drupacea
Ficus exasperata
Ficus hispida
Ficus religiosa
Ficus spp.
Ficus virens
Garcinia gummi-gutta
Garcinia indica
Garcinia morella
Garuga pinnata
Glochidion zeylanicum
Gmelina arborea
Grevillea robusta
Grewia tiliifolia
Haldina cordifolia
Holigarna arnottiana
Holigarna spp.
Hopea glabra
Hopea parviflora
Hopea wightiana
Hydnocarpus laurifolia
Kydia calycina
Lagerstroemia microcarpa
Lagerstroemia parviflora
Lagerstroemia speciosa
Lannea coromandelica

Linociera malabarica
Lophopetalum wightianum
Macaranga indica
Macaranga peltata
Madhuca longifolia
Mallotus philippensis
Mammea suriga
Mangifera indica
Mastixia arborea
Melia dubia
Memecylon spp.
Mesua ferrea
Mesua spp.
Michelia champaka
Mimusops elengi
Mitragyna parvifolia
Myristica dactyloides
Myristica fatua
Myristica malabarica
Naringi crenulata
Nothapodytes foetida
Olea dioica
Palaquium ellipticum
Persea macrantha
Phoenix sylvestris
Pinanga dicksonii
Pinus spp.
Poeciloneuron indicum
Pterocarpus marsupium
Pterocarpus spp.
Santalum album
Sapindus emarginatus
Sapium insigne
Schleichera oleosa
Semecarpus anacardium
Spondias pinnata
Sterculia guttata
Sterculia urens
Sterculia villosa
Stereospermum personatum
Streblus asper
Swietenia mahogani
Symplocos cochinchinensis
Syzygium caryophyllatum
Syzygium cumini
Syzygium gardneri
Syzygium hemisphericum
Syzygium zeylanicum
Tectona grandis
Terminalia alata
Terminalia arjuna
Terminalia bellirica
Terminalia chebula
Terminalia paniculata
Toona ciliata
Trema orientalis
Trewia nudiflora
Vateria indica
Vepris bilocularis
Viburnum punctatum
Vitex altissima
Vitex leucoxylon
Vitex negundo
Wendlandia thyrsoidea
Xeromphis spinosa
Xylia xylocarpa
Zanthoxylum rhetsa
Ziziphus xylopyrus

Other Plants [q1, mp, qa, Pascal 1982]

Abrus precatorius
Acacia caesia
Acacia sinuata
Artabotrys zeylanicus
Bauhinia vahlii
Calamus pseudo-tenuis
Calamus rotang
Calamus spp.
Calamus travancoricus
Calycopteris floribunda
Cipadessa baccifera
Clematis gouriana
Clerodendrum viscosum
Cordia dichotoma
Cordia macleodii
Elaeagnus conferta
Elaeagnus kologa
Ensete superbum
Entada phaseoloides
Flemingia strobilifera
Gnetum ula
Helicteres isora
Hemidesmus indicus
Holarrhena antidysenterica
Ichnocarpus frutescens
Memecylon angustifolium

Ochlandra scriptoria
Ochlandra travancorica
Phoenix humilis
Psychotria nigra
Securinega leucopyrus
Spatholobus parviflorus
Strobilanthes spp.
Thottea siliquosa
Ziziphus oenoplia

APPENDIX B

Birds [qa, mp]

Adjutant, Lesser
Babbler, Jungle
Babbler, Rufousbellied
Barbet, Green
Bulbul, Redvented
Bulbul, Redwhiskered
Bulbul, Whitebrowed
Cormorant, Little
Crow, Jungle
Crow pheasant
Cuckoo, Indian
Darter
Dove, Red Turtle
Dove, Spotted
Drongo, Black
Drongo, Lesser Racket-tailed
Duck, Comb
Egret, Cattle
Egret, Large
Egret, Little
Flowerpecker, Tickell's
Flycatcher, Tickell's Blue
Hoopoe
Hornbill, Great Pied
Hornbill, Common Grey
Hornbill, Malabar Pied
Ibis, White
Jacana, Pheasant-tailed
Junglefowl, Grey
Kingfisher, Common
Kite, Brahminy
Kite, Pariah
Lapwing, Redwattled
Lorikeet, Indian
Magpie-Robin
Minivet, Scarlet
Moorhen, Purple
Munia, Whitebacked
Myna, Common
Myna, Jungle
Oriole, Golden
Parakeet,Roseringed
Peafowl, Common
Pigeon, Blue Rock
Pigeon, Green
Robin, Indian
Shikra
Shrike, Common Wood
Shrike, Grey
Sparrow, Yellowthroated
Stork, Whitenecked
Sunbird, Purple
Swallow
Swallow, Wiretailed
Tailorbird
Teal, Common
Teal, Large/Lesser ? Whistling
Vulture, Black
Vulture, Egyptian
Wagtail, White
Waterhen, Whitebreasted
Woodpecker, Yellow Fronted Pied

LARGE WHISTLING TEAL
Dendrocygna bicolor

LESSER WHISTLING TEAL
Dendrocygna javanica

SHETTIHALLY WILDLIFE SANCTUARY

Shettihally Sanctuary provides an interesting mix of moist deciduous, dry deciduous, and semi-evergreen forests. Mammalian diversity is reported to be high. However, it is also a rather disturbed sanctuary, having a number of villages inside, unrestricted grazing, and forestry operations. Many of the settlements inside consist of families which were displaced by the Sharavathi Dam in the 1960s, brought by the state government into the Shettihally area, and told to clear land for themselves [Shetty, pers. comm.].

There are several temples and a mosque inside the sanctuary, which attract hundreds of devotees during festivals. The sanctuary also has, inside its north-east border, a recently established lion safari park. To the south-east, connected by the Tunga Reservoir and a stretch of Reserve Forest, lies the Bhadra Sanctuary.

LEGAL STATUS: Declared a sanctuary vide notification No. AFD 47 FWL 74 on 23 November, 1974 [notif]. All legal procedures are reported to have been completed. However, there is a discrepancy here [Shetty, Pers. comm.]. Apparently, subsequent to the declaration of the sanctuary, the DC Shimoga issued a notice asking for public objections and filing of claims. None were received, and the DC conferred with the declaration of the sanctuary. He did not, however, conduct his own inquiry into the existing rights and leases (see HUMAN PRESENCE below). This has reportedly now been done, and a final notification has been issued, though the precise date is unclear [Appayya, Pers. Comm. 1994].

AREA AND ZONING: 39,560 ha (395.60 sq. km) [notif]. The Core Zone occupies 10,060 ha, the Buffer Zone 23,740 ha., and the Tourism Zone 5760 ha [qa '91]. There is a proposal to delete an area of 6400 ha. in the Buffer Zone. This is to eliminate areas under agriculture and townships, which were included in the sanctuary due to the fact that the original boundaries were demarcated on the basis of road alignments, and not on the basis of forest blocks.

LOCATION: *District* Shimoga; *Latitudinal range* 13°42'01" to 14°00'41" N [tp]; *Longitudinal range* 75°13'45" to 75°34'16" E [tp]; *Nearest town* Shimoga, adjacent [tp]. However there are several towns located inside the sanctuary, including Gajanuru and Sirgere [tp]; *Nearest railhead* Arasalu (inside, on north-western edge); otherwise, Kumsi (8 km) [tp]; *Nearest airport* Mangalore (152 km) [tp].

APPROACHES: From Bangalore to Tumkur (70 km), to Bhadravati (180 km), and on another 20 km to Shimoga [tp], at the eastern edge of the sanctuary. Alternatively, from Mangalore to Agumbe (98 km), on to Tirthuhalli (30 km), and another 30 km on to sanctuary [tp].

TOPOGRAPHY AND CLIMATE: *Altitude* about 600 m (lowest contour line on toposheet) to 1031 m, the highest point being located in the centre [tp]; *Temperature* 15°C to 36°C; *Mean annual rainfall* 2600 mm.

FLORA: Landsat imagery shows closed forest cover, with a canopy crown density of 40% and above, over most of the sanctuary area. Forest types found include Southern Moist Mixed Deciduous Forests 3B/C2, West Coast Semi-evergreen Forests 2A/C2, and Southern Tropical Dry Deciduous Forests 5A [ql, mp].

Acacia auriculiformis and *Eucalyptus* hybrid have been introduced for fuelwood and pulp purposes over 1250 ha by the Forest Department (Territorial Wing) and Mysore Paper Mills Ltd. [ql, fv]. Apparently, natural forest has been cleared to raise these plantations [fv]. Monoculture plantations of Teak *Tectona grandis* have been raised over 6419 ha. for commercial timber, as also over 40 ha. to cover up areas from which encroachments were cleared, and to make a barrier between the sanctuary and settlement on the south-eastern border. Ultimately even this latter plantation may be cut for timber and fuelwood. Silver oak *Grevillea robusta* plantations also exist, details of which are not known. The weeds Eupatorium *Chromolaena odorata* and *Lantana camara* are rapidly taking over the undergrowth, and open areas, in the Buffer Zone [fv, mp].

Trees [ql, qa, mp, fv, Pascal 1982]

Acacia auriculiformis
Alstonia scholaris
Anacardium occidentale
Anogeissus latifolia
Artocarpus spp.
Bauhinia spp.
Bombax ceiba
Buchanania lanzan
Butea monosperma
Calophyllum spp.
Careya arborea
Cassia fistula
Cinnamomum spp.
Dalbergia latifolia
Dillenia pentagyna
Dillenia spp.
Dipterocarpus indicus
Emblica officinalis
Eucalyptus hybrid
Ficus spp.
Gmelina arborea
Gordonia obtusa
Grewia tiliifolia
Grevillea robusta
Haldina cordifolia
Hevea brasiliensis
Humboldtia brunonis
Kingiodendron pinnatum
Kydia calycina
Lagerstroemia microcarpa
Lagerstroemia parviflora
Lagerstroemia spp.
Lannea coromandelica
Madhuca longifolia
Meliosma pinnata
Mesua spp.
Mimusops elengi
Mitragyna parvifolia
Palaquium ellipticum
Persea macrantha
Poeciloneuron indicum
Pterocarpus marsupium
Pterocarpus spp.
Santalum album
Sapindus emarginatus
Shorea roxburghii
Syzygium cumini
Syzygium spp.
Tectona grandis
Terminalia alata
Terminalia chebula
Terminalia bellirica
Terminalia paniculata
Terminalia spp.
Wrightia tinctoria
Xeromphis spinosa
Xylia xylocarpa
Ziziphus mauritiana
Ziziphus spp.

Other Plants [ql, qa, mp, fv, Pascal 1982]

Acacia sinuata
Bambusa arundinacea
Bambusa spp.
Calycopteris floribunda
Chromolaena odorata
Coffea spp.
Dendrocalamus strictus
Lantana camara
Thea sinensis
Ziziphus spp.

FAUNA:

Mammals [ql, fv, dir, mp]

Bear, Sloth
Boar, Indian Wild
Deer, Barking
Deer, Spotted
Dog, Indian Wild
Elephant, Indian
Gaur
Hare, Indian
Jackal
Langur, Common
Leopard
Leopard-cat
Loris, Slender
Macaque, Bonnet
Mongoose, Common
Pangolin, Indian

Porcupine, Indian
Sambar
Squirrel, Common Giant Flying
Squirrel, Indian Giant
Tiger

Reptiles [ql, mp]
Cobra, King
Crocodile, Marsh

Birds: See Appendix A
No listings of other fauna are available. Salt licks have been provided to attract animals to the Tourism Zone.

OCCURRENCE AND CONTROL OF DISEASE: Rinderpest and Anthrax are reported to occur amongst cattle in the sanctuary villages, as well as those of the surrounding areas. However, there are no reports of the wildlife having been affected. About 70 percent of livestock from both sanctuary and adjacent villages have been inoculated. Livestock passing through are occasionally checked for vaccination.

The Kyasanur Forest Disease, or Monkey Fever (Encephalitis), also occurs in the area. A separate wing has been established by the Health Department to research the cause of the disease and to set up an immunisation programme [mp].

There is a veterinary dispensary inside at Mandagadde, and at Kannangi, 4 km away [tp].

OTHER FACTORS AFFECTING HABITAT: Forest fires occur occasionally. In most cases they are caused by villagers who use the charcoal wood. However, these fires are minor and put out by the villagers themselves. But the danger of dry Eupatorium catching fire in summer, and causing a major conflagration, is very great [fv].

WATER RESOURCES: The waters of the Tunga river and Tunga Reservoir touch portions of the south-eastern boundary of the sanctuary. In addition, there are several perennial reservoirs and lakes, two seasonal springs, and numerous seasonal lakes, reservoirs, and streams located inside [tp].

BUDGET: Rs. 8.44 lakhs for 1987–88, and Rs. 11.24 lakhs for 1988–89.

MANAGEMENT PLAN: A plan for the period 1990 to 1995 has been prepared by the ACF (WL), Sahyadri Wildlife Sub-Division, Shimoga, and has been submitted for approval.

PERSONNEL: One RFO (who is locally in-charge), one Forester, four Forest Guards , and two daily wage watchers [mp, ql].

EQUIPMENT: One jeep, one fixed wireless set, two mobile wireless sets, one manpack, eight rifles, one film projector, one pair of binoculars, and one camera [mp, qa].

RESEARCH AND MONITORING: None.

COMMUNITY INTERACTION PROGRAMMES: Educational films are often screened for villagers, one or two villages being covered every month. An exhibition of wildlife pictures is held during wildlife week (October). Nature camp facilities have also been provided to educate the rural youths and nature lovers about the wildlife and the forests.

HUMAN PRESENCE:

Rights and Leases: Villagers inside the sanctuary have the right to habitation, agriculture (over 500 ha) and religious yatra. Villagers from both inside and adjoining areas are permitted to graze their livestock freely in the buffer area. Fodder is permitted to be taken out by actual users. Two Manganese mines were operational in the

sanctuary till 1992.* There is a mosque and several temples inside the sanctuary, with activities spread over a total of 200 ha. They attract hundreds of devotees, particularly during festivals.

Habitation: There are 112 villages within the sanctuary boundaries, all in enclosures** with a human population of 49,202 [qa]. There are 100 villages in the adjoining areas with a population of 1,08,000 [qa]. Shimoga town adjoins the sanctuary's eastern boundary [tp, mp].

Two of the villages inside, Settihalli*** and Chitra-Settihalli, are to be shifted out as they are in the heart of the forest area [qa]. While relocation sites have been identified, the actual shifting has not yet taken place.

Grazing: A very large population of livestock grazes inside, some 1,24,500 heads.

Offences and Illegal Activities: Three cases of illegal hunting were recorded between 1979–80 and 1983–84 [q1], and there continue to be reports of poaching in peripheral areas [mp]. An area of 564 ha has been encroached upon and used for agriculture. Timber smuggling of Teak *Tectona grandis*, Rosewood *Dalbergia latifolia*, and Honne *Pterocarpus marsupium* [qa, q1]) by large groups of headloaders from Shimoga town, still occurs [mp].

Tourism: While there is no comprehensive record of the number of visitors to the sanctuary, the lion safari received a total of 21,000 visitors in the period of 1988–90.

Community Action Programmes:

Use by Other Government Agencies: The Irrigation Department uses 200 ha. for two reservoirs, the PWD 30 ha. for roads, and the Mysore Minerals Ltd. (a Government of Karnataka enterprise) 100 ha. for two manganese mines (also see Rights and Leases). The Military Unit of the Madras Engineering Group holds a training camp over 5 ha. in the sanctuary, twice a year for a month each. During this period there is extensive movement of the trainees inside and adjacent to the sanctuary, and use of small arms and grenades. The Karnataka State Electricity Board uses 50 ha. for transmission lines. The Territorial Wing of the Forest Department collects dead and fallen timber and firewood within the sanctuary. It also cuts green bamboo, and raises fuelwood plantations [mp].

Miscellaneous: One Elephant-caused fatality occurred in the period 1979–80 and 1983–84, and eight cases of livestock lifting were accepted for compensation during this period. Crop damage is caused by wildlife, and approximately Rs 40,000 paid out annually as compensation. Wildlife attacks on humans have also occured in the past, details of which are not available [fv, qa].

INFORMATION FOR VISITORS: Entry is prohibited between 6 pm and 6 am. Movement of tourists by vehicle or on foot is permitted only in the Tourism Zone. The sanctuary is best visited between November and May which are the non-rainy months, and wildlife sighting is easy. However, tourism is not allowed in the fire season (January to May), as there is then inadequate staff to escort tourists around. There is a 28.4 ha. lion safari inside the sanctuary, just inside its north-eastern boundary.

The Hanigeri mosque is situated inside the sanctuary.****

There are forest lodges inside, and on the outskirts of the sanctuary.

NGOs/INDIVIDUALS ASSOCIATED: One Honorary Wildlife Warden, Shri M.R. Yajnanarayana Bhat (for address, please see Appendix 8).

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* The Survey of India toposheets depict at least eight manganese ore mines in the sanctuary, but the sanctuary authorities reported only two. The discrepancy could not be resolved. It could also not be ascertained if these two have been granted extensions beyond 1990.

** According to the Survey of India toposheet, however, there are 204 inhabited areas (big and small villages, and even some towns) inside the sanctuary. Secondly, the wildlife map sent by the sanctuary authorities depicts several villages outside areas marked as enclosures. No enclosures have been shown in the Survey of India toposheets, and none are mentioned in the notification. These discrepancies could not be resolved.

*** This spelling, used in SOI toposheets, is different from that of the sanctuary used in the notification.

**** Another spot of religious significance, the Maleshankar temple has been reported by the Wildlife authorities, but this temple could not be located on the map.

CONTACT ADDRESSES:

1) Deputy Conservator of Forests
Wildlife Division, Shimoga
1st Cross, Jayanagar
Shimoga-577201
District Shimoga
Karnataka

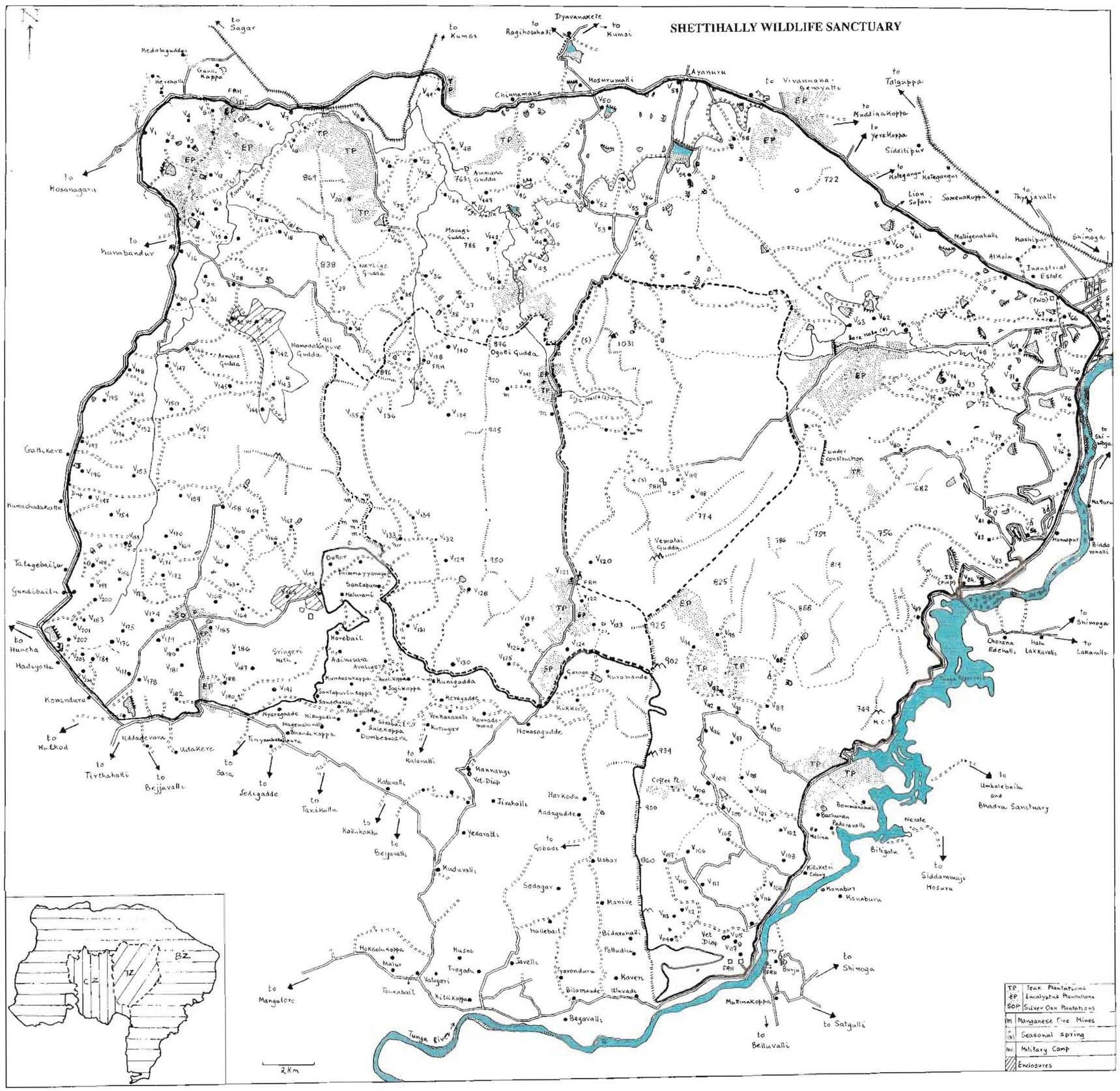
2) Local in-charge:
Range Wildlife Warden (RFO)
Shettihally Sanctuary
D.C.'s Compound
Shimoga-577 201
Karnataka

APPENDIX A

Birds [ql, mp]

Adjutant, Lesser
Babbler, Jungle
Babbler, Rufousbellied
Barbet, Green
Baya
Bulbul, Redvented
Bulbul, Redwhiskered
Bulbul, Whitebrowed
Cormorant, Little
Crow, Jungle
Crow-pheasant
Cuckoo, Indian
Darter
Dove, Red Turtle
Dove, Spotted
Drongo, Black
Drongo, Greater Racket-tailed
Duck, Comb
Egret, Cattle
Egret, Large
Egret, Little
Flowerpecker, Tickell's
Flycatcher, Paradise
Flycatcher, Tickell's Blue
Hoopoe
Hornbill, Common Grey
Hornbill, Great Pied
Hornbill, Malabar Pied
Ibis, White
Jacana, Pheasant-tailed
Junglefowl, Grey
Kingfisher, Common
Kingfisher, Whitebreasted
Kite, Brahminy
Kite, Pariah
Lapwing, Redwattled
Lorikeet, Indian
Magpie-Robin
Minivet, Scarlet
Moorhen, Purple
Munia, Whitebacked
Myna, Common
Myna, Jungle
Oriole, Golden
Parakeet, Roseringed
Partridge, Grey
Peafowl, Common
Pigeon, Blue Rock
Pigeon, Green
Robin, Indian
Shikra
Shrike, Common Wood
Shrike, Grey
Sparrow, House
Sparrow, Yellowthroated
Spurfowl, Red
Sunbird, Purple
Swallow
Swallow, Wiretailed
Swallow-shrike, Ashy
Tailorbird
Teal, Common
Teal, Lesser Whistling
Vulture, Egyptian
Wagtail, White
Waterhen, Whitebreasted
Woodpecker, Yellowfronted Pied

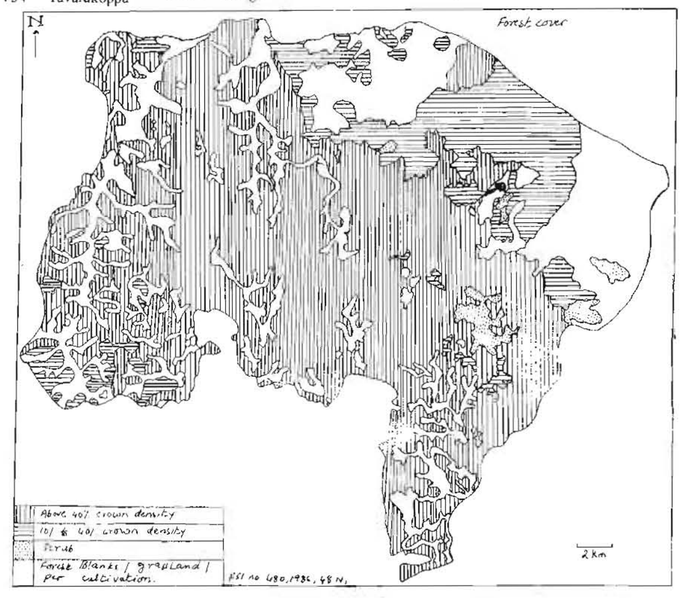
SHETTIHALLY WILDLIFE SANCTUARY



* All habitation inside the Sanctuary area been shown on our map.

- Some could be small hamlets and some villages and some even towns.

V1- Riponpet
V2- Baruve
V3- Muduha
V4- Bhairapur
V5- Dune
V6- Benavolli
V7- Arasalu
V8- Bettanieddu
V9- Tanglavedi
V10- Kaiatohalli
V11- Malavalli
V12- Malavalli
V13- Gajigad
V14- Gonikere
V15- Gonikere
V16- Mugudati
V17- Haramballi
V18- Karagod
V19- Tamodikoppd
V20- Ramopp
V21- Kdavanka
V22- Basovapura
V23- Konanjeddu
V24- Matijeddu
V25- Kadugadde
V26- Harshlalu
V27- Nerliga
V28- Talale
V29- Kogligrama
V30- Heddaripura
V31- Kagalijeddu
V32- Singala
V33- Swagad
V34- Kalase
V35- Hosahalli
V36- Shankara
V37- Adderi
V38- Gubbiga
V39- Gamangadde
V40- Chilumejeddu
V41- Kesavinahanda
V42- Adinakottige
V43- Erebisu
V44- Kudi
V45- Adinakottige
V46- Dodda Matali
V47- Dodmati
V48- Kuramballi
V49- Suduru
V50- Adagadi
V51- Kachikoppa
V52- Bilguni
V53- Tomadihalli
V54- Tavarakoppa
V55- Sirgere
V56- Bilvaderkoppa
V57- Hosur
V58- Ancsara
V59- Iligehalli
V60- Hosur
V61 Volikoppa
V62- Puradahal
V63- Kadlevaddu
V64- Hanumantapur
V65- Gadikoppa
V66- Savanpaiya
V67- Gopala
V68- Anupinakatte
V69- Gopashettykoppa
V70- Mondali
V71- Kalluru
V72- Kalluru
V73- Agasavalli
V74- Govindapur
V75- Agasavalli
V76- Harakeri
V77- Ramenakoppa
V78- Hosahalli
V79- Hosakoppa
V80- Basavapur
V81- Indiranagara
V82- Mullikere
V83- Gajanuru
V84- Virapur
V85- Agrahard
V86- Gajanuru
V87- Sakrebailu
V88- Kigodi
V89- Kallumane
V90- Talale
V91- Matikar
V92- Gommanahalli
V93- Kararmakki
V94- Totadakoppa
V95- Kudugalumanc
V96- Tundasara
V97- Kudiram
V98- Sedagar
V99- Melina Arasi
V100- Kullundi
V101- Kehgina Arasi
V102- Sankapura
V103- Bennebisa
V104- Totakalabhavi
V105- Halesuvala
V106- Addagudde
V107- Sinduvadi
V108- Halaga
V109- Irivati
V110- Muvalli
V111- Halagadde
V112- Hemmakki
V113- Gurugisara
V114- Karigalakoppa
V115- Mardagodde
V116- Addamane
V117- Sorinagadde
V118- Chura Settihalli
V119- Settihalli
V120- Keranalli
V121- Hanigeri
V122- Siranalli
V123- Melina Kunaje
V124- Balekoppa
V125- Kallugadde
V126- Basavanogadde
V127- Basavanagadde
V128- Alose
V129- Mantanagadde
V130- Sonkiapura
V131- Konbinakai
V132- Hogara
V133- Bukkivare
V134- Dobailu
V135- Maskiani
V136- Chanbail
V137- Harikere
V138- Belur
V139- Matikoppa
V140- Dodda Teddu
V141- Haronahalli
V142- Kagachi
V143- Kurumbolli
V144- Vadahosahalli
V145- Poselikoppa
V146- Kallur
V147- Sabariga
V148- Huligadde
V149- Gandarvalli
V150- Mandli
V151- Bidarahalli
V152- Kammachchi
V153- Avuka
V154- Kesare
V155- Kaggundi
V156- Kumbarakoppa
V157- Huttahatti
V158- Karakodlu
V159- Hosakappa
V160- Alur
V161- Chik Mattiga
V162- Dod Moddiga
V163- Belaginamane
V164- Torebail
V165- Siddapurd
V166- Haramballi
V167- Vatigar
V168- Badi
V169- Hire Kollahalli
V170- Sanamane
V171- Sina
V172- Chik Kallahalli
V173- Chippina Koppa
V174- Melina kadkod
V175- Kadkodu
V176- Hosa Koppa
V177- Dod Manehara
V178- Kodimakki
V179- Agasarakspa
V180- Karikahalli
V181- Bidaramanda
V182- Hullatti
V183- Kelagina Hodigally
V184- Sannikoppa
V185- Bdemala
V186- Balagar
V187- Hithalusara
V188- Kittandur
V189- Kambadagadde
V190- Akkalapura
V191- Hasiyur
V192- Mallimakki
V193- Amrata
V194- Kammachi
V195- Tiriga
V196- Amrata Aka
V197- Jalapur
V198- Maniyur
V199- Bilukoppe
V200- Voddihara
V201- Minumanpkoppa
V202- Hadigallu
V203- Halaavanahalli
V204- Halavanahalli



SOMESHWARA WILDLIFE SANCTUARY

Named after the presiding deity of the area, Someshwara, this sanctuary is in two unconnected sections, and comprises of the semi-evergreen and evergreen forests that characterise the Western Ghats. A rich diversity of flora and fauna has been reported from this high-rainfall area. There are several temples inside the sanctuary. To its south, Someshwara is connected to Kudremukh National Park by a forest corridor.

LEGAL STATUS: Declared a sanctuary vide notification AFD 51 FWL 74 dated June 5, 1974 [notif]. All legal procedures are reported to have been completed, though it is also reported that cultivation rights of villagers continue inside the sanctuary. This discrepancy remains unresolved. In 1994 (precise date unclear), final notification was issued [Appayya, Pers. Comm. 1994].

AREA AND ZONING: 8,840 ha (88.40 sq km), of which 2,849 ha. are in the Core Zone, and 1,551 ha. in the Buffer Zone. There is also a tourist zone, in two parts, with an area of 4,440 ha.

LOCATION: *District* Dakshina Kannada (South Kanara); *Latitudinal range* 13°27'54" to 13°30'54" N* and 13°28'06" to 13°36'45" N* [tp]; *Longitudinal range* 74°56'09" to 74°59'45" E and 74°58'42" to 75°05'18" E[tp]; *Nearest town* Hebri-adjoins the western section of the sanctuary [tp]; *Nearest railhead* Mangalore (85 km) [tp]; *Nearest airport* Mangalore (85 km) [tp].

APPROACHES: From Bangalore to Birur (214.75 km) via Tumkur (70 km), on to Tarikere (23.75 km), Bhadravati (20 km) and Shimoga (20 km) [tp]. From Shimoga to sanctuary (95 km) via Tirthahalli and Agumbe [tp]. Alternatively, from Mangalore to Mudbidri (37.5 km), to Karkal (15 km), and on to Hebri (32.5 km) [tp].

TOPOGRAPHY AND CLIMATE: *Altitude* 75 m [q1] to 870 m, the highest point being located in the north-eastern edge of the sanctuary [tp]; *Temperatures* 20°C to 37°C; *Mean annual rainfall* 4000 mm [qa].

FLORA: According to Landsat imagery, much of the sanctuary has a crown cover density of 40% and above, as does the area adjoining it to the east [Landsat 1986]. To the west, however, adjoining areas are devoid of forest cover. The forest types include West Coast Tropical Evergreen Forests 1A/C4, West Coast Semi-evergreen Forests 2A/C2, Southern Secondary Moist Mixed Deciduous Forests 3B/C2/2S1, and Dry Grasslands 5/DS4 [mp]. The weed, Eupatorium *Chromolaena odorata*, has become quite a problem, spreading to the open areas and reducing the area available for grazing [mp]. Between 1979–80 and 1982–83, 128.5 ha were put under plantations**of which 40.4 ha were for fuelwood (now fully harvested), 30.1 ha for commercial timber, 30 ha. for wildlife habitat and 28 ha. for an unspecified purpose. Mixed plantations consist of the following species: *Bombax ceiba*, *Sterculia* spp., *Acacia auriculiformis*, *Swietenia mahogani*, *Ailanthus excelsa* and *Acrocarpus fraxinifolius*, and monoculture plantations of Cashew *Anacardium occidentale* and *Casuarina equisetifolia* [q1]. There are also plantations of Teak *Tectona grandis* and *Eucalyptus* in the sanctuary, the exact extent of which is not known [tp].

Trees and ***Other Plants***: see Appendix A.

FAUNA:

Mammals [q1, dir, cn, mp, qa]

- Bear, Sloth
- Boar, Indian Wild
- Cat, Jungle
- Deer, Barking
- Deer, Mouse
- Deer, Spotted
- Dog, Indian Wild
- Fox, Indian

* Two sets of coordinates correspond to the two separate sections of the sanctuary.

** The location of these plantations could not be ascertained.

Gaur
Hare, Indian
Hyena, Striped
Jackal
Leopard
Macaque, Bonnet
Macaque, Lion tailed
Pangolin, Indian
Porcupine, Indian
Sambar
Squirrel, Indian Giant
Tiger

Reptiles [q1, qa]
Cobra, Common
Cobra, King
Krait, Common
Lizard, Common Garden
Python, Indian
Tortoise, Starred
Viper, Russell's

Amphibians [qa]
Frog, Bull
Frog, Indian Water Skipper
Frog, Ornate Narrowmouthed

Fish [qa]
Aorichthys aor
Channa eucopunctata (Murrel or Snakehead)
Channa gaucha
Clarias batrachus (Magur)
Labeo kontius
Labeo boga
Mastocembalus armatus (Spiny Eel)
Mystus keletius
Mystus vittatus
Ophicephalus punctatus
Pintus neilli
Punitus sarana spilurus
Pseudotropius atheronoides
Scorpaenopsis rosea (Scorpion fish)
Trachynotus ovatus (Pampano, Butter fish)
Wallago attu (Mulley)

Birds: see Appendix B.
No information on other fauna is available. About 200 salt licks have been provided for the animals.

OCCURRENCE AND CONTROL OF DISEASE: No disease or epidemics have occurred amongst wildlife. However, amidst reports of sporadic incidence of Rinderpest and Anthrax among cattle [mp], a vaccination programme is undertaken for livestock from sanctuary villages and those in surrounding areas, with between 80 and 90 percent of livestock being inoculated. Livestock passing through the sanctuary are occasionally checked for vaccination. In addition, the Kyasanur Forest Disease (Encephalitis) prevails in the area, and the Health Department is reported to have taken control measures [mp]. The nearest veterinarian is situated at Hebri, adjacent to the western section.

OTHER FACTORS AFFECTING HABITAT: Villagers sometimes deliberately cause fires to take advantage of the subsequent new growth of grass, though the extent of the damage is minor [mp].

WATER RESOURCES: One major perennial river, the Seetha Nadi, bisects the smaller section of the sanctuary and flows along the southern boundary of the larger section [tp]. There are two other perennial streams, several seasonal ones, two seasonal lakes [tp], 11 waterholes (9 perennial) [map] and 20 tanks [mp].

BUDGET: Budgetary expenditure incurred during 1987–88 was Rs. 1.25 lakhs and during 1988–89, Rs. 4.59 lakhs.

MANAGEMENT PLAN: A management plan for 1990–95 has been prepared by the ACF, Sahyadri Wildlife Subdivision, Shimoga, and has been sent for approval.

PERSONNEL: One Range Wildlife Warden (holding charge for Mookambika Sanctuary as well) [mp], one Forester, and six daily watchers [q1, qa]. The sanctuary is in the overall charge of the DCF (WL), Shimoga.

EQUIPMENT: One jeep and one rifle [mp]

RESEARCH AND MONITORING: None.

COMMUNITY INTERACTION PROGRAMMES: None.

HUMAN PRESENCE:

Rights and Leases: Villagers, both from sanctuary villages and those in adjoining areas, are allowed to graze their livestock [mp], free of charge, throughout the sanctuary. Rights to cultivation exist inside the sanctuary [qa '91].

Fodder extraction is permitted by actual users, throughout the sanctuary, and with no restrictions on quantity. Extraction of fuelwood is also permitted [mp]. Villagers also have the right to religious yatra, over an area of 0.25 ha.

Habitation: There are 13 villages inside the sanctuary* (five in the Core Zone) , with a total population of 11,045 (245 in the Core Zone). There are 40 villages in the surrounding areas with a population of about 50,000.

Grazing: About 20,000 head of livestock graze inside the sanctuary [mp].

Offences and Illegal Activities: Between 1979–80 and 1983–84, two cases of illegal hunting (both in 1982–83) and 718 cases of destruction of habitat were registered. 300 ha. of the sanctuary, in scattered blocks, are being illegally encroached for agriculture. Firewood smuggling by people from Hebri and Someshwara has been reported, as have been instances of poaching by students of colleges from Manipal [mp].

Tourism: No records are kept. However, tourism is reported to be negligible.

Use by Other Government Agencies: Other government agencies using the sanctuary are the PWD for roads (100ha), and the KSEB for transmission lines (25 ha). The Revenue Department has 25 ha under housing. The Territorial Wing of the Forest Department removes dry fuelwood from the sanctuary, and has raised firewood plantations [mp].

Miscellaneous: Five cases of livestock lifting were accepted for compensation between 1982–83 and 1983–84. Further, crops are reportedly damaged by Gaur, and Wild boar.

INFORMATION FOR VISITORS: Entry is prohibited between 6 pm and 6 am. The Buffer Zone is open to tourists on foot and in motor vehicles. The sanctuary is best visited between November and April, which are the dry months.

There are several temples inside the sanctuary and in the surrounding areas which may be visited. These include the Sametwara temple, the Madamakkiveerabhadra temple, the Hebri-Anantapadmanba temple, the Belie-Shankarnarayan temple, the Belarje temple, the Albadi-Mahalingeswara temple and the Shadinuare temple.

Accommodation is available for visitors in resthouses on the outskirts of the sanctuary. There are plans to improve tourist facilities, build more resthouses, hides, and watchtowers, and acquire vehicles and wireless sets.

NGOs/INDIVIDUALS ASSOCIATED: Shri B. Jaganatha Shetty (IFS), former ACCF (WL), is the Honorary Wildlife Warden (for address see Appendix 8) [qa].

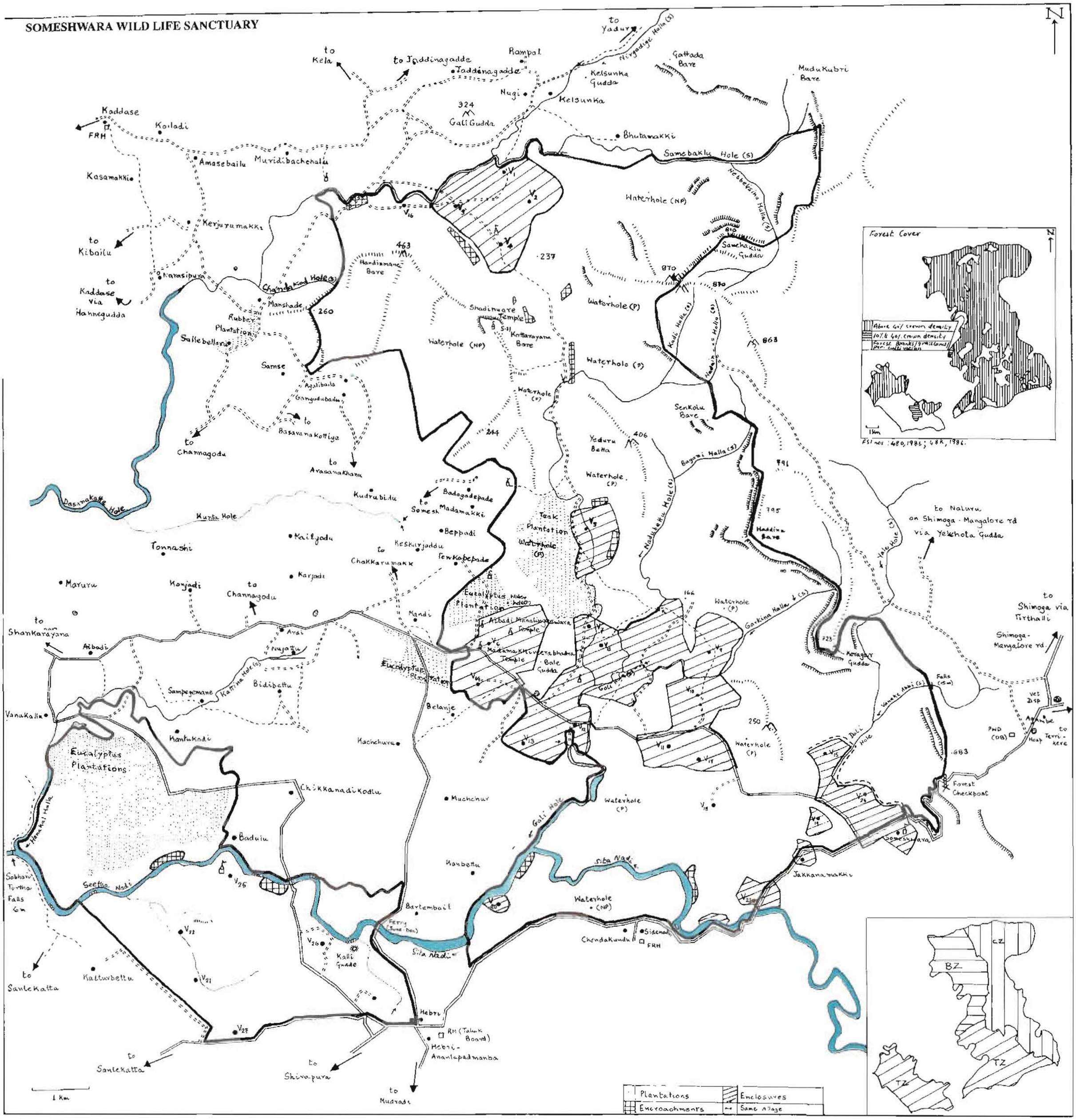
* There are 27 villages inside the sanctuary according to Survey of India toposheets. The discrepancy could be not resolved.

CONTACT ADDRESSES:

1) Deputy Conservator of Forests
Wildlife Division Karkal
Karkal - 574104
Dakshina Kannada Dist.
Karnataka

2) Local In-charge :
Range Wildlife Warden (RFO)
Mookambika-Someshwara Sanctuaries
Kollur - 576220
Dakshina Kannada Dist.
Karnataka

SOMESHWARA WILD LIFE SANCTUARY



Habitation in the sanctuary

V1-	Heggadebettu	V10-	Kabbirale	V19-	Dulli
V2-	Sameshemane	V11-	Murise	V20-	Lkkodlu
V3-	Kelajambe	V12-	Madamakki	V21-	Kattadi
V4-	Ballimane	V13-	Kochachuru	V22-	Handi
V5-	Hanja	V14-	Gundukallu	V23-	Bandimate
V6-	Shirangur	V15-	Arasinamane	V24-	Hakkarekejeddu
V7-	Kuntamakki	V16-	Ballimane	V25-	Basti
V8-	Murise	V17-	Nodpal	V26-	Gulpadi
V9-	Nodubettu	V18-	Hote Someshwar	V27-	Mandadileddu

APPENDIX A

Trees [q1, qa, mp, Pascal 1982]

Acacia auriculiformis
Acacia catechu
Acacia ferruginea
Acacia polycantha
Acrocarpus fraxinifolius
Aegle marmelos
Ailanthus excelsa
Ailanthus triphysa
Albizia amara
Albizia chinensis
Albizia lebbeck
Albizia odoratissima
Albizia procera
Albizia spp
Alseodaphne semecarpifolia
Alstonia scholaris
Anacardium occidentale
Anthocephalus chinensis
Antiaris toxicaria
Aporosa lindleyana
Arenga wightii
Artocarpus gomezianus
Artocarpus heterophyllus
Artocarpus hirsutus
Artocarpus spp.
Atalantia monophylla
Azadirachta indica
Bauhinia racemosa
Bischofia javanica
Bombax ceiba
Butea monosperma
Butea superba
Calophyllum apetalum
Calophyllum elatum
Calophyllum spp.
Canarium strictum
Carallia brachiata
Carallia lucida
Careya arborea
Carissa spp.
Caryota urens
Cassia fistula
Casuarina equisetifolia
Chukrasia tabularis
Cinnamomum iners
Cinnamomum spp.
Cinnamomum zeylanicum
Crateva magna
Cycas spp.
Dalbergia latifolia
Dalbergia paniculata
Dillenia pentagyna
Dillenia spp.
Diospyros ebenum
Diospyros montana
Dipterocarpus indicus
Elaeocarpus serratus
Elaeocarpus spp.
Elaeocarpus tuberculatus
Emblica officinalis
Ervatamia heyneana
Erythrina variegata
Eucalyptus spp.
Evodia lunu-ankenda
Ficus amplissima
Ficus benghalensis
Ficus callosa
Ficus drupacea
Ficus hispida
Ficus religiosa
Ficus virens
Garcinia gummi-gutta
Garcinia indica
Garcinia morella
Garuga pinnata
Glochidion zeylanicum
Gmelina arborea
Grewia tiliifolia
Haldina cordifolia
Holigarna arnottiana
Holigarna spp.
Hopea glabra
Hopea parviflora
Hopea wightiana
Humboldtia brunonis
Hydnocarpus laurifolia
Kydia calycina
Lagerstroemia microcarpa
Lagerstroemia parviflora
Lagerstroemia speciosa
Lannea coromandelica
Lophopetalum wightianum
Macaranga indica
Macaranga peltata

Machilus spp.
Mallotus philippensis
Mammea suriga
Mangifera indica
Mastixia arborea
Melia dubia
Memecylon spp.
Mesua ferrea
Mesua spp.
Michelia spp.
Mimusops elengi
Mitragyna parvifolia
Myristica dactyloides
Myristica malabarica
Myristica spp.
Naringi crenulata
Nothapodytes foetida
Olea diocia
Palaquium ellipticum
Persea macrantha
Phoenix sylvestris
Pinanga dicksonii
Poeciloneuron indicum
Pterocarpus marsupium
Pterocymbium tinctorium
Sapindus emarginatus
Sapindus spp.
Saraca asoca
Schleichera oleosa
Scolopia crenata
Semecarpus anacardium
Shorea spp.
Spondias pinnata
Sterculia guttata
Sterculia spp.
Sterculia urens
Sterculia villosa
Strychnos nux-vomica
Swietenia mahogani
Swietenia spp.
Symplocos cochinchinensis
Syzygium caryophyllatum
Santalum album
Syzygium cumini
Syzygium gardneri
Syzygium hemisphericum
Syzygium zeylanicum
Tectona grandis
Terminalia alata
Terminalia arjuna
Terminalia bellirica
Terminalia chebula
Terminalia paniculata
Terminalia spp.
Toona ciliata
Trema orientalis
Trewia nudiflora
Vateria indica
Viburnum punctatum
Vitex altissima
Vitex leucoxylon
Vitex negundo
Xeromphis spinosa
Xylia xylocarpa
Zanthoxylum rhetsa
Ziziphus spp.
Ziziphus xylopyrus

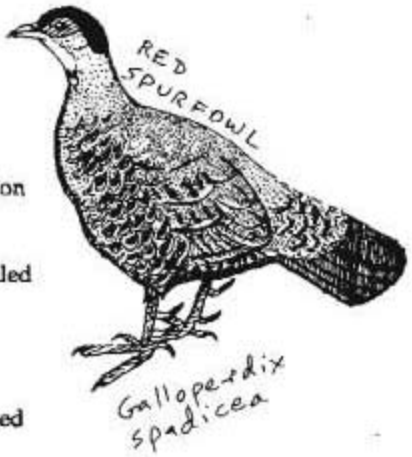
Other Plants [q1, qa mp, Pascal 1982]*

Abrus precatorius
Acacia caesia
Acacia sinuata
Artabotrys zeylanicus
Bauhinia vahlii
Calamus pseudo-tenuis
Calamus spp.
Calamus travancoricus
Calycopteris floribunda
Clematis gouriana
Clerodendrum viscosum
Cordia dichotoma
Elaeagnus conferta
Elaeagnus kologa
Ensete superbum
Entada phaseoloides
Flemingia strobilifera
Gnetum ula
Helicteres isora
Hemidesmus indicus
Holarrhena antidysenterica
Ichnocarpus frutescens
Leea indica
Memecylon angustifolium

* Excludes crop plants cultivated by villagers inside the sanctuary.

Ochlandra scriptoria
Ochlandra travancorica
Phoenix humilis
Psychotria nigra
Securinega leucopyrus
Spatholobus parviflorus
Strobilanthes spp.
Thottea siliquosa
Ziziphus oenoplia
Ziziphus spp.

APPENDIX B



Birds [qa, mp]

Adjutant, Lesser
Babbler, Jungle
Babbler, Rufousbellied
Barbet, Green
Bulbul, Redvented
Bulbul, Redwhiskered
Bulbul, Whitebrowed
Bulbul, Whitecheeked
Cormorant, Little
Crow, Jungle
Crow-pheasant
Cuckoo, Indian
Darter
Dove, Red-Turtle
Dove, Spotted
Drongo, Black
Drongo, Greater Racket-tailed
Duck, Comb
Egret, Cattle
Egret, Large
Egret, Little
Egret, Smaller
Flycatcher, Paradise
Flycatcher, Tickell's Blue
Hoopoe
Hornbill, Common Grey
Hornbill, Great Pied
Hornbill, Malabar Pied
Ibis, White
Jacana, Pheasant-tailed
Junglefowl, Grey
Kingfisher, Common
Kite, Brahminy
Kite, Pariah
Lapwing, Redwattled
Lorikeet, Indian
Magpie-Robin
Minivet, Scarlet
Moorhen, Purple
Munia, Whitebacked
Myna, Common
Myna, Jungle
Oriole, Golden
Parakeet, Roseringed
Partridge, Grey
Peafowl, Common
Pigeon, Blue Rock
Pigeon, Green
Robin, Indian
Shikra
Shrike, Common Wood
Shrike, Grey
Spurfowl, Red
Stork, Whitenecked
Sunbird, Purple
Swallow-shrike, Ashy
Tailorbird
Teal, Common
Teal, Lesser/Large? Whistling
Tree-pie, Southern
Wagtail, White
Woodpecker, Yellowfronted Pied

TALAKAVERI WILDLIFE SANCTUARY

This sanctuary has been named after the place where the Cauvery river originates (Tala means head)*, which is just outside its eastern boundary. This point is also a pilgrimage centre. The sanctuary comprises of hill ranges and valleys, mostly covered with tropical evergreen forests [mp].

LEGAL STATUS: Declared a sanctuary vide notification no. AHFF 173 FWL 87(I), dated 31 August/1 September, 1987 [notif].

AREA & ZONING: 10,559 ha. (105.59 sq. km) [notif]. There is no zoning.

LOCATION: *District* Kodagu (Coorg); *Latitudinal range* 12°17'14" to 12°26'38" N [tp]; *Longitudinal range* 75°25'23" to 75°33'15" E [tp]; *Nearest town* Bhagamandala (8 km) [tp]; *Nearest railhead* Madikeri (38km); *Nearest airport* Mangalore (123 km) [SOI 1981].

APPROACH: From Bangalore to Mysore (142 km), Mysore to Madikeri (110 km) and then 30km to Bhagamandala [SOI 1981]. Alternatively, from Mangalore to Bhagamandala (115 km) via Puttur, Sulya and Madikeri. Bhagamandala is 8km from Tale Kaveri, which is on the edge of the sanctuary [SOI 1981].

TOPOGRAPHY AND CLIMATE: *Altitude* 63 m to 1659 m, the highest point being located in the south-east [tp]; *Temperature* 15°C to 35°C [qa]; *Mean annual rainfall* 2000 mm. [qa].

FLORA: Most of the sanctuary contains closed forest, with a crown density of 40% and above [Landsat 1986]. To the north-east, the sanctuary is bounded by coffee/cardamom plantations. The sanctuary contains tropical wet evergreen forest (6826 ha), tropical semi-evergreen forest (1050 ha) and grasslands (2625 ha)** [qa]. It is not clear what forest types (in Champion and Seth's [1968] classification) these refer to.

Trees [mp]

Acacia spp.
Acrocarpus fraxinifolius
Aglaia anamallayana
Ailanthus triphysa
Albizia lebbeck
Artocarpus gomezianus
Artocarpus heterophyllus
Artocarpus hirsutus
Bauhinia racemosa
Canarium strictum
Carallia brachiata
Cassia fistula
Casuarina equisetifolia
Cinnamomum verum
Derris indica
Diospyros ebenum
Diospyros melanoxylon
Dipterocarpus indicus
Elaeocarpus tuberculatus
Emblica officinalis
Eucalyptus spp.
Hardwickia binata
Kydia calycina
Mangifera indica
Mesua ferrea
Naringi crenulata
Palaquium ellipticum
Pandanus fascicularis
Polyalthia fragrans
apindus emarginatus
emecarpus anacardium
Tamarindus indica
Tectona grandis
Terminalia bellirica
Terminalia chebula
Toona ciliata

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* Spelt Tale Kaveri on the SOI toposheet.
** Neither the SOI toposheet nor the wildlife map show these grasslands. This discrepancy could not be resolved.

Vateria indica
Vitex negundo
Xanthophyllum flavescens
Xeromphis spinosa

Other Plants [mp]
Acacia sinuata
Calamus spp.
Curcuma spp.
Elettaria cardamomum
Leea indica
Ochlandra scriptoria
Ochlandra travancorica
Strobilanthes spp.
Tarenna asiatica
Zingiber spp.

Acacia sp. and *Casuarina equisetifolia* have been introduced to the area, in plantations covering 105 ha., from 1981 to 1984 [qa]. Plantations of *Elettaria cardamomum, Eucalyptus* and Teak are also present in the sanctuary.

FAUNA:

Mammals [mp]
Boar, Indian Wild
Deer, Spotted
Elephant, Indian
Leopard
Macaque, Liontailed
Sambar

Reptiles [mp]
Cobra, Common
Keelback, Green
Python, Indian
Snake, Rat

No listing of other fauna is available.

OCCURRENCE AND CONTROL OF DISEASE: No disease amongst flora and fauna has been reported. The nearest veterinarian is located at Bhagamandala (8 km) [qa].

OTHER FACTORS AFFECTING HABITAT: Fires are reported to occur in the grasslands [mp]. Firelines and watchtowers are proposed as counter-measures [mp].

WATER RESOURCES: Large perennial streams Nadmale Hole, Betemale Hole and Kume Kolli, tributaries of the Perambatte Puzha, form a part of the western and southern boundaries of the sanctuary. The perennial stream Mundra Hole marks the southern limit. There are several more perennial and seasonal streams.

BUDGET: A sum of Rs. 45.59 lakhs has been proposed for the VIII Five Year Plan period (1990–95) [qa]. Actual budgetary expenditure for 1989–90 and 1990–91 was Rs. 2.00 lakhs in each year [qa '91].

MANAGEMENT PLAN: A plan was prepared in December 1989 by the DCF (WL), Mysore, covering the period 1990–1995 [mp]. It is pending approval.

PERSONNEL: One ACF, one RFO, two Foresters and seven Forest Guards are in charge of this sanctuary.

EQUIPMENT: None. Purchase of vehicles, wireless sets, weapons and other equipment is proposed [mp].

RESEARCH AND MONITORING: None [qa].

COMMUNITY INTERACTION PROGRAMMES: None. Nature camps for school children are proposed [mp].

HUMAN PRESENCE:

Rights and Leases: Extraction of NWFP is permitted to the LAMP Society [mp]. There are cardamom/coffee plantations * leased out in enclosures, which are under legal dispute [qa].

Habitation: There are eleven enclosures and one village within the sanctuary [map, tp]. Enclosures consist of cardamom/coffee plantations* [tp, map], and are inhabited by a total of 3,500 people [qa]. There are a number of villages surrounding the sanctuary. No information is available on population in these villages.

Grazing: Carried out illegally [mp]. No other information is available.

Offences and Illegal Activities: None recorded, except grazing [qa].

Tourism: Tourists visit the sanctuary but no records are kept [qa].

Use by Other Government Agencies: None [qa].

Miscellaneous: Damage to paddy is reported to be caused by Elephants, in areas adjacent to the sanctuary [qa]. Compensation is payable in such cases [qa].

INFORMATION FOR VISITORS: There are two FRHs adjoining the sanctuary [qa, tp]. The area where the Tale Kaveri temple is situated adjoining the eastern boundary is known to be the source of the Cauvery river.

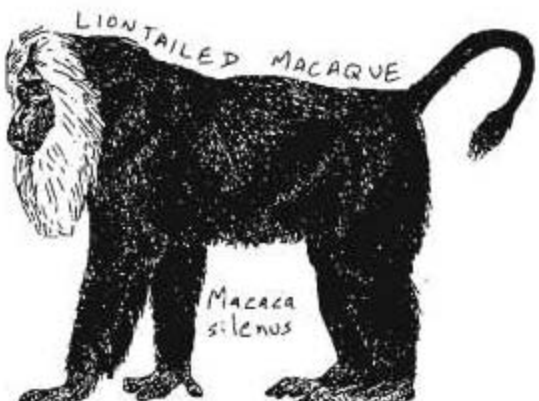
This is a place of historical and cultural interest. May to June and October to January are considered to be the best times to visit the Sanctuary, the former because vegetation is fresh after pre-monsoon and monsoon showers, the latter because the north-east monsoon generates lush vegetative growth. There are plans to have trekking routes and camping grounds for tourists [qa].

NGO's/INDIVIDUALS ASSOCIATED: None [qa].

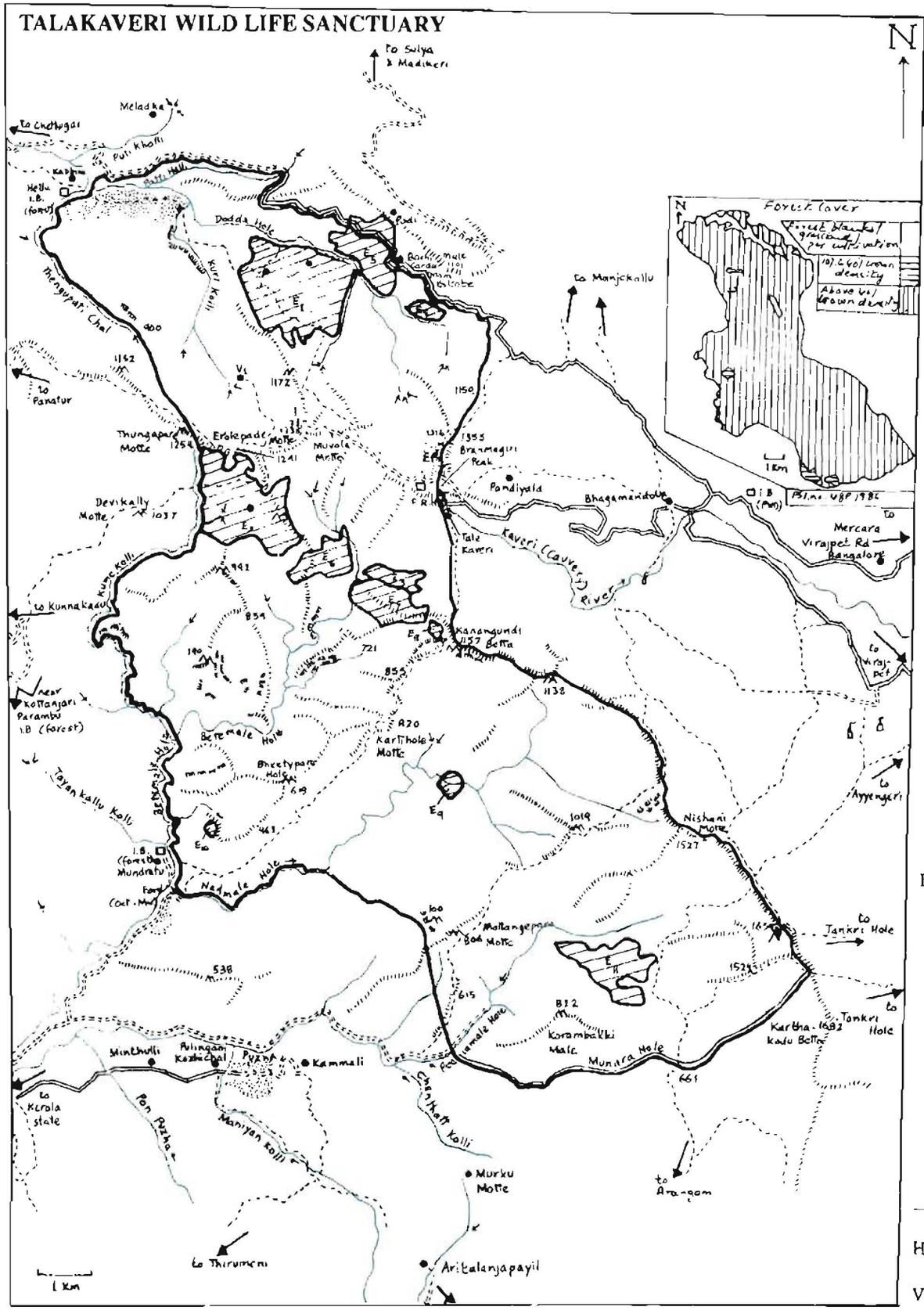
CONTACT ADDRESS:

1) Asst. Conservator of Forests
Wildlife Sub Division,
Madekeri P.O.-571201
Karnataka

2) Local in-charge :
Range Forest Officer
Wildlife
Madekeri P.O.-571201
Karnataka



* Information about the number of enclosures has been obtained from the map sent by the wildlife authorities and from toposheets. However the map sent by the wildlife authorities has 'coffee plantations' marked against the enclosures, whereas the SOI toposheet marks enclosures as cardamom estates. This discrepancy is as yet unresolved. Also it is not clear which of these enclosures are legally excluded from the sanctuary, because the notification specifies only the area and not the specific locations of the enclosures which it excludes.



Enclosures inside the Sanctuary

- E1- Puduvalatha Male cardamon Estate
- E2- Kodangi Male Cardamon Estate
- E3- Bete Male Estate
- E4- Kote Male cardamon Estate
- E5- Bachi male cardamon Estate
- E6- Shown acc. to wl map
- E7- Overlaps E.3.
- E 7. is according to the WL map.
- E8- Shown acc. to WL map
- E9- Shown acc. to WL map
- E10- Shown acc. to WL map
- E11- Boundary shown as per the WL map and tp

Habitation inside the Sanctuary

V1- Belathumale

Footnote:-

The status and the numbers of enclosures is unclear. The SOI toposheet shows five and the wild life map shows eight. Only two of those in the toposheet and WL map (E1 and E2) overlap. All are shown here and it is not known which of these are referred to in the notification, because the notification specifies only size and not specific enclosures or their exact location.

APPENDICES

APPENDIX 1

SCIENTIFIC, COMMON, VERNACULAR, AND FAMILY NAMES OF TREES REPORTED FROM NATIONAL PARKS AND SANCTUARIES IN KARNATAKA*

LATIN NAME	COMMON NAME	VERNACULAR NAME	FAMILY
Acacia auriculiformis			Mimosaceae
Acacia catechu[1]	Cutch Tree	Khair, Kaggali, Katchu, Kadri	Mimosaceae
Acacia decurrens	Green Wattle, Common Wattle		Mimosaceae
Acacia ferruginea		Banni	Mimosaceae
Acacia latronum		Anagobli, Naigobbali, Oteiala	Mimosaceae
Acacia leucophloea	White Babool, White Barked Acacia	Bilijali, Naibela	Mimosaceae
Acacia nilotica[2]	Indian Gum Arabic, Babul	Karijali, Gobli, Jaali	Mimosaceae
Acacia polycantha[2]	White Cutch	Mugli, Muluvara, Bilijali	Mimosaceae
Acacia spp.			Mimosaceae
Acrocarpus fraxinifolius	Mundani, Acrocarpus	Balanji, Hantige, Havulagi	Caesalpiniaceae
Actinodaphne angustifolia[2]	Pisa	Kanboorga, Tudgensu, Amberi, Kagoodgimara, Ambastala, Hoggodgimara	Lauraceae
Actinodaphne spp.			Lauraceae
Aegle marmelos	Bael Tree, Bengal Quince, Vilva	Bilpathre	Rutaceae
Aglaia anamallayana		Choolimara	Meliaceae
Ailanthus excelsa	Tree-of-Heaven, Maharukh	Dodda mara, Halmaddi, Hebbevu	Simaroubaceae
Ailanthus triphysa[2]		Halmaddi, Guggul-Dhup, Maddi-Dhupa, Gugguladhupa	Simaroubaceae
Alangium salvifolium[2]		Ankole	Alangiaceae
Albizia amara	Oil Cake Tree	Chigare, Tugli, Chujjalu, Sujjalu, Ghujjalu	Mimosaceae
Albizia chinensis[2]		Hotbage, Kalbage	Mimosaceae
Albizia lebbeck[1]	Siris Tree, East Indian Walnut	Bage, Sirsi, Kallbage	Mimosaceae
Albizia odoratissima[1]	Black Siris, Kala Siris	Bilwara	Mimosaceae
Albizia procera[1]	White Siris, Tall-tongue Pod	Bellatte, Bilibage	Mimosaceae
Albizia spp.			Mimosaceae
Alseodaphne semecarpifolia		Mase, Mahse, Phudgus, Nelthare	Lauraceae
Alstonia scholaris	Dita Bark, Scholar's Tree, Devil's Tree	Maddale	Apocynaceae
Anacardium occidentale	Cashew Nut Tree, Ceylon Mango, Goa Almond	Geru, Godambi, Kaju	Anacardiaceae
Annona squamosa	Custard Apple, Sweet Sop, Sugar Apple of the West Indies	Seethaphala	Annonaceae
Anogeissus latifolia	Axle-wood Tree	Dindiga, Dindlu	Combretaceae
Anogeissus spp.			Combretaceae
Anthocephalus chinensis[2]	Kadam	Kadwal, Neerubale	Rubiaceae
Antiaris toxicaria	Upas Tree, The Upas Tree of Java	Ajjanapatte, Chiladamara	Moraceae
Aphanamixis polystachya[3]	Rohituka, Pitraj	Mullu munthala	Meliaceae
Aporusa lindleyana		Challe, Salle, Sali, Sulla	Euphorbiaceae
Arenga wightii		Dadasalu	Arecaceae

LATIN NAME	COMMO		
Artocarpus gomezianus[2]	Monkey Jack, Lakuch	Pulinchekke, Wonte, Wotemba, Wote, Vatehuli	Moraceae
Artocarpus heterophyllus[2]	Jack Tree	Halasu, Alasa	Moraceae
Artocarpus hirsutus	Aini, Wild Jack	Aini, Hebbalasu	Moraceae
Artocarpus spp.		Kadu nimbe	Moraceae
Atalantia monophylla	Wild Lime	Kad-kanchi, kad-limbu	Rutaceae
Atalantia racemosa		Bevu, Kadbevu	Rutaceae
Azadirachta indica	Neem Tree, Margosa Tree	Basavana pada, Madara,	Meliaceae
Bauhinia malabarica[3]	Malabar Mountain Ebony, Camel's Foot Tree	Kadugalu Basavanapada, Kanchivala, Sarul	Caesalpiniaceae
Bauhinia purpurea	Purple Bauhinia, Bauhinia, Camel's Foot Tree	Banne, Achiga, Basavanapada,	Caesalpiniaceae
Bauhinia racemosa	Bauhinia, Camel's Foot Tree, White Bauhinia	Achilu, Arelu	Caesalpiniaceae
Bauhinia spp.			Caesalpiniaceae
Beilschmeidia spp.		Neeruli, Beke, Neela,	Lauraceae
Bischofia javanica	Bishopwood	Gobbaraneralu, Kadaksalle	Euphorbiaceae
Bombax ceiba[2]	Malabar Semul, Silk Cotton Tree, Red Silk Cotton Tree	Kempu buruga, Bural, Simal, Buruga, Mullelava, Mullubooruga	Bombacaceae
Bombax spp.		Talemara	Bombacaceae
Borassus flabellifer[2]	Palmyra Palm	Sambrani, Salai, Bilidhupa,	Arecaceae
Boswellia serrata	Indian Olibanum Tree	Maddi, Chitta Musse, Badamara, Goje	Burseraceae
Bridelia crenulata[3]	Kasi		Euphorbiaceae
Bridelia spp.		Remurkalu, Mardippu	Euphorbiaceae
Buchanania axillaris[2]	Buchnan's Mango, Cuddapah Almond	Marukalu, Murke, Nurkal, Chir	Anacardiaceae
Buchanania lanzan[3]	Almondette Tree, Cheronjee		Anacardiaceae
Buchanania spp.		Muthuga, Muthugadamara	Anacardiaceae
Butea monosperma[2]	Flame of the Forest		Fabaceae
Butea spp.		Mutthugadaballi, Palasinabilu	Fabaceae
Butea superba		Kenjaga	Fabaceae
Caesalpinia mimosoides		Bobby, Irai, Hole-honne	Caesalpiniaceae
Calophyllum apetalum[2]	Poonspar of Travancore	Surahonne, Sirihonne, Kuve,	Clusiaceae
Calophyllum elatum[2]	Poonspar Tree	Bobbi Surhonne, Poon	Clusiaceae
Calophyllum polyanthum			Clusiaceae
Calophyllum spp.		Kai-Dhupa, Dhupada mara,	Clusiaceae
Canarium strictum	Black Dammar Tree, Black Dhup, Indian White Mahogany	Raldhupa, Kaldhupa, Mandadhupa, Pandepaini, Tendalake, Halemaddu Heddarane, Hatteranike	Burseraceae
Canthium dicoccum[2]		Thuttala	Rubiaceae
Capparis divaricata[3]		Kathrinambu, Torate, Revapi	Capparaceae
Capparis grandis		Bangana, Andipenaru,	Capparaceae
Carallia brachiata[3]	Carallia Wood	Andamuriya, Andagarcha	Rhizophoraceae
Carallia lucida		Doddal, Kavalu mara, Gowla	Rhizophoraceae
Careya arborea	Ceylon Oak, Kumbi		Lecythidaceae

LATIN NAME	COMMON NAME	VERNACULAR NAME	FAMILY
Carissa spp.			Apocynaceae
Caryota urens	Fish Tail Palm, Sago, Toddy Palm, Kittul Palm	Bagani, Baini	Arecaceae
Casearia elliptica[2]		Hesare, Konje	Flacourtiaceae
Cassia fistula	Indian Laburnum, Purging Fistula, Monkey-stick Tree, Pudding Pipe Tree	Kakke gida, Baya	Caesalpiniaceae
Cassia siamea[2]	Siam Cassia, Siamese Tree Senna	Karethangadi, Seemethangadi, Simatangedu	Caesalpiniaceae
Cassine glauca[3]		Mukarthi	Celastraceae
Casuarina equisetifolia	Casuarina, Beefwood, The Swamp Oak, Cassie	Calimara, Kesaribe, Survey. Chambakumara, Kesalike	Casuarinaceae
Chloroxylon swietenia	East Indian Satinwood	Bittula, Hurihuli, Masula, Huragalu	Rutaceae
Chukrasia tabularis	Chittagong Wood, Chikrassy	Dalmara, Kalgarige, Urulu	Meliaceae
Chukrasia velutina			Meliaceae
Cinnamomum camphora	Camphor Tree	Karpura	Lauraceae
Cinnamomum iners		Adavi lavangapatte, Kankutala, Kankula	Lauraceae
Cinnamomum spp.		Kankutla	Lauraceae
Cinnamomum verum[2]	Cinnamon	Nisini, Dalchini, Kankutla	Lauraceae
Cinnamomum zeylanicum	Cinnamon, Ceylon Cinnamon	Dalchini, Lavangpatti, Karapumara	Lauraceae
Cochlospermum religiosum[2]	Yellow Silk Cotton Tree, Silk Cotton Tree	Adaviburaga, Arasinaburaga, Bettadabare,	Cochlospermaceae
Commiphora caudata[3]	Hill Mango	Kodamavu, Kondamavu	Burseraceae
Cordia spp.			Cordiaceae
Crateva magna[2]	Crateva, Three-leaved Caper	Bilipatri, Bitusi, Nervala, Voolemara	Capparidaceae
Cullenia exarillata[2]		Karani	Bombacaceae
Cupressus spp.			Pinaceae
Cycas circinalis	Crozier Cycas	Mundicalu, Goddu iichala	Cycadaceae
Cycas spp.			Cycadaceae
Dalbergia lanceolaria	Bastard Rosewood	Hasarugani, Bili beete, Belaga, Kanaga	Fabaceae
Dalbergia latifolia	Rosewood, Indian Rosewood, East Indian Rosewood, Bombay Blackwood	Beete mara, Shisham, Todagatti	Fabaceae
Dalbergia paniculata		Pachale, Belaga, Nayibeete	Fabaceae
Dalbergia sissoo	Sissoo, Shisham	Biradi, Sissoo	Fabaceae
Delonix regia[1]	Gulmohur, Flamboyant Flame Tree, Gul Mohr, Gold Mohur	Doddaratnagandhi	Caesalpiniaceae
Derris indica[3]	Pongam Oil Tree, Indian Beech, Ponga Oil Tree, Karanj, Papar	Honne, Hulagal, Hongemara, Torangaru	Fabaceae
Dillenia indica	Dillenia	Bettakanagalu, Muchiru	Dilleniaceae
Dillenia pentagyna	Dillenia	Kaltega, Kamagalu, Karambal, Kadu kanigala, Madathega, Kadutega, Kanagal	Dilleniaceae
Dillenia spp.			Dilleniaceae
Dimocarpus longan[3]		Sannele, Kendala	Sapindaceae

LATIN NAME	COMMON NAME	VERNACULAR NAME	FAMILY
Diospyros candolleana		Kare mara	Ebenaceae
Diospyros ebenum	Ceylon Ebony, Ebony Persimmon, True Ebony Tree	Karimara, Balemara	Ebenaceae
Diospyros melanoxylon[2]	Coromandel Ebony Persimmon, Beedi Leaf Ebony, Tendu	Tendu, Abanasi, Tumari, Thupra, Bidiele	Ebenaceae
Diospyros montana	Mountain Persimmon	Jagalaganti, Balagunike	Ebenaceae
Diospyros oocarpa	Andaman Marble Wood Persimmon, Andaman Marble Wood, Zebrawood		Ebenaceae
Diospyros spp.			Ebenaceae
Dipterocarpus indicus		Guga, Dhuma, Kalpaini, Banasampa, Kallenne, Yennemara	Dipterocarpaceae
Drypetes oblongifolia			Euphorbiaceae
Drypetes spp.			Euphorbiaceae
Dysoxylum malabaricum	White Cedar	Agil, Bilidevadar, Bilibudlige	Meliaceae
Elaeocarpus oblongus		Henalatade	Elaeocarpaceae
Elaeocarpus serratus		Kynsette, Kyasatte, Marate, Maite, Perinkara	Elaeocarpaceae
Elaeocarpus spp.		Sattaga, Kadamoada	Elaeocarpaceae
Elaeocarpus tuberculatus	Deccan Olive, Rudraksh	Bhutali, Dandele mara, Sattaga, Rudrakshi, Karicpannu	Elaeocarpaceae
Elaeodendron glaucum		Mukarthi, Thamaroja	Celastraceae
Emblica officinalis[3]	Emblic Myrobalan, Indian Gooseberry	Nelli, Amla, Amalaka	Euphorbiaceae
Emblica spp.			Euphorbiaceae
Ervatamia heyneana[1]		Naagarkuda, Madarasa, Madlemara, Maddarsa, Halmeti, Bilikodasalu	Apocynaceae
Ervatamia spp.[1]			Apocynaceae
Erythrina suberosa		Mullu-muthga, Parivala, Pangra, Mulluharivana, Kaduparivala	Fabaceae
Erythrina variegata[3]	Indian Coral Tree	Harivana, Hongarike, Mullu-mutala, Haluvana, Varjipe	Fabaceae
Eucalyptus camaldulensis[3]	Eucalypt	Nilagiri	Myrtaceae
Eucalyptus citriodora	Lemon-scented Eucalypt	Nilagiri	Myrtaceae
Eucalyptus globulus	Blue Gum Eucalypt	Nilagiri	Myrtaceae
Eucalyptus hybrid	Eucalypt	Nilagiri	Myrtaceae
Eucalyptus spp.	Eucalypt	Nilagiri	Myrtaceae
Eucalyptus tereticornis	Eucalypt, The Australian Forest Red Gum, Flooded Gum	Nilagiri	Myrtaceae
Euodia lunu-ankenda[3]		Makali, Magali	Rutaceae
Ficus amplissima[2]		Easari (Bili), Bilibasuri	Moraceae
Ficus benghalensis	Banyan Tree	Aladamara, Ala, Goli,	Moraceae
Ficus callosa		Thaudugoli	Moraceae
Ficus drupacea[2]		Golimara, Gonimara, Goni, Bili goli, Chungoli	Moraceae
Ficus exasperata[2]		Gargatti, Kalkathi, Kanathi, Kharwatti	Moraceae

LATIN NAME	COMMON NAME	VERNACULAR NAME	FAMILY
Ficus hispida	Swamp Fig Tree	Kadathi, Adavi atti	Moraceae
Ficus nervosa[2]		Kadpara, Nayatte	Moraceae
Ficus racemosa[2]	The Cluster Fig Tree	Rumadi, Atthimara	Moraceae
Ficus religiosa	Peepul	Ashwatha, Arali, Kallarali	Moraceae
Ficus spp.			Moraceae
Ficus tsjahela		Bilibasuri, Boviyamara, Bilibasari	Moraceae
Ficus virens[2]	Pakar	Karibasri, Basarimara	Moraceae
Flacourtia indica[2]		Gejjalike, Mulluthare, Sannagejjalikey, Heggajalikey	Flacourtiaceae
Flacourtia montana		Hennu sampige, Gudda, Hansampige, Sampi, Vanasampige	Flacourtiaceae
Garcinia gummi-gutta[2]	Malabar Gamboge	Opangi, Kadagulu-muruga, Kudgelmurga, Simai hunase	Clusiaceae
Garcinia indica[1]	Indian Gamboge, Kokam Butter Tree, Mangosteen Oil Tree, Brindonia Tallow Tree	Murukalgurgi, Murugal, Bhirand, Murgina hulimara, Kanjeera, Muriya, Arasinagurgi	Clusiaceae Clusiaceae
Garcinia morella[2]	Ceylon Gamboge	Devanahuli, Panpuli, Arsingurge, Arsingunge, Muriyanahulli	Clusiaceae
Garcinia spp.		Kanjeera	Clusiaceae
Garcinia xanthochymus[2]	Mysore Gamboge	Devajarige, Jeerakanmara	Clusiaceae
Gardenia spp.			Rubiaceae
Gardenia gummifera		Kalkambi, Bikke, Bhicky, Cittubikke, Kambimena, Dikkemalli	Rubiaceae
Gardenia latifolia	Boxwood Gardenia	Rebbikke, Kalkambi, Adavibikke	Rubiaceae
Gardenia spp.			Rubiaceae
Gardenia turgida		Bangori, Budigare, Bengeri, Bootbangari	Rubiaceae
Garuga pinnata	Garuga	Godda, Halabalagi, Arnelli	Burseraceae
Garuga spp.			Burseraceae
Givotia rottleriformis		Betta, Bhotale, Bilitale, Pumki, Pulkeer	Euphorbiaceae
Glochidion neilgherrense		Salle, Banavara	Euphorbiaceae
Glochidion zeylanicum		Banda, Nirsalle, Savregidda	Euphorbiaceae
Glycosmis mauritiana[2]		Gurodagida, Manikyan	Rutaceae
Gmelina arborea	Gumhar, Gamari	Shivane, Gamhar, Kasmiri-mara, Kulimara	Verbenaceae
Gmelina asiatica		Roboli, Heggula, Guludu, Kalshivani	Verbenaceae
Gordonia obtusa		Nagetta, Mallanga	Theaceae
Gordonia spp.			Theaceae
Grevillea robusta	Silver Oak, Silky Oak		Proteaceae
Grewia spp.			Tiliaceae
Grewia tiliaefolia[2]	Grewia, Phalsa, Dhaman	Dhaman, Toda, Tadasalu, Butale	Tiliaceae

LATIN NAME	COMMON NAME	VERNACULAR NAME	FAMILY
Haldina cordifolia[1]	Haldu	Yethiga, Arsintega, Ahnau, Heddi, Jellaga, Karam, Kurmi	Rubiaceae
Hardwickia binata	Anjan, Harpharori	Kammara, Karachi, Acca, Chonapaini, Karachu	Caesalpiniaceae
Hevea brasiliensis	Caoutchouc Tree, Para Rubber Tree, Rubber Tree		Euphorbiaceae
Holigarna arnottiana		Malegeru, Holigeri, Sannale, Holegara, Katugeri, Chara, Holageru, Hoolgeri	Anacardiaceae
Holigarna grahamii[2]		Doddaholigeri, Holigeri, Kankanagalu, Dodda-yele-holagara	Anacardiaceae
Holigarna spp.			Anacardiaceae
Holoptelea integrifolia	Jungle Cork Tree, Indian Elm, Kanju	Thapasi, Rasbija, Kaladri, Nilavahi	Ulmaceae
Hopea glabra		Hirbogi, Malehegge	Dipterocarpaceae
Hopea parviflora	Hopea, Iron Wood of Malabar	Kiralbhogi, Bhogi, Bovumara, Sannele bogi, Tirupu, Bovige, Hirbogi	Dipterocarpaceae
Hopea spp.			Dipterocarpaceae
Hopea wightiana		Kabri, Haiga, Malchaiga, Nai Irupu, Kalbovu, Hiribovige, Unni, Karimara	Dipterocarpaceae
Humboldtia brunonis		Hasige mara	Fabaceae
Humboldtia spp.			Fabaceae
Hydnocarpus laurifolia[2]		Neeruhandi, Neerunandi, Neeruhanchi, Narhambu, Surity, Suity, Toratti, Suranti	Flacourtiaceae
Hymenodictyon excelsum	Kuthan	Doddakoppe, Dodda thoppe, Bandarayanni, Vilari	Rubiaceae
Hymenodictyon obovatum		Bhoga, Gandale, Hiremara, Bogi	Rubiaceae
Hymenodictyon spp.			Rubiaceae
Jacaranda acutifolia	Jacaranda		Bignoniaceae
Juniperus spp.	Cedar		Pinaceae
Kingiodendron pinnatum[3]	Malabar Mahogany, Piney	Enne mara, Enne	Fabaceae
Knema attenuata[1]	Jathika	Raktamara, Hedoggal, Kaimara	Myristicaceae
Kydia calycina[2]	Pula	Bhende, Bhendy, Bellaka, Nayibende, Kadu Bende	Malvaceae
Lagerstroemia microcarpa[2]	Benteak, Nana	Nandi, Nana, Benteak, Bili-nandi, Bolundur	Lythraceae
Lagerstroemia parviflora	Lendia, Nandi Tree	Channangi, Venkatu, Jalle, Bakli, Bodga, Lendia	Lythraceae
Lagerstroemia speciosa[2]	Queen Crepe Myrtle, Queen's Flower Tree, Jarul	Holedasal, Holedasavala, Holenandi	Lythraceae
Lagerstroemia spp.			Lythraceae
Lannea coromandelica[2,3]	Wodier Tree, Jhingan	Arenalli, Gogal, Ajasringi, Kuratige, Gojal, Goddamte, Gopal	Anacardiaceae
Lannea spp.			Anacardiaceae
Leea spp.			Leeaceae

LATIN NAME	COMMON NAME	VERNACULAR NAME	FAMILY
Leucaena leucocephala[2]	White Popinac Lead Tree		Fabaceae
Linociera malabarica		Akkarkal, Hariyage, Madle	Oleaceae
Lophopetalum wightianum	Banati, Balpale	Bilihalasu, Bilihebbalasu, Banate, Balpale, Sattale, Hottale, Karihali	Celastraceae
Macaranga indica			Euphorbiaceae
Macaranga peltata[1]		Batluchandrika, Chandbal, Chandoda, Battad, Chendulka, Chandakanne	Euphorbiaceae
Machilus spp.			Lauraceae
Maclura cochinchinensis[1]		Bidigudamullu	Moraceae
Madhuca longifolia[1,2]	South Indian Mahua, Mowra Butter Tree	Mahua, Kadippe, Ippe, Hcippe, Sannaippe, Uli	Sapotaceae
Madhuca spp.			Sapotaceae
Mallotus philippensis	Kum Kum Tree, Kamala Tree	Kapilarangu, Kunkum, Kulokum	Euphorbiaceae
Mammea suriga[3]		Gardundi, Suragi, Wundi	Clusiaceae
Mangifera indica	Mango	Mavu	Anacardiaceae
Manilkara spp.			Sapotaceae
Mastixia arborea		Gulle	Cornaceae
Melia dubia[2]	Malabar Nim Wood	Huenbevu, Hebbevu, Karibevan	Meliaceae
Meliosma pinnata[2]	Honey Sweet Tree	Massivala	Sabiaceae
Meliosma spp.			Sabiaceae
Memecylon spp.			Melastomataceae
Memecylon umbellatum[2]	Iron Wood Tree	Archote, Adcheri, Adachatti, Harcharilakhonde	Melastomataceae
Mesua ferrea	Mesua	Nagasampige, Nagakesara, Atna	Clusiaceae
Mesua spp.			Clusiaceae
Meyna laxiflora[3]		Mullakare, Gobergally, Gundkare	Rubiaceae
Michelia champaca	Champak	Sampige, Kola-sampige	Magnoliaceae
Michelia spp.			Magnoliaceae
Miliusa tomentosa[1]		Hesara, Ubalu, Wumb	Annonaceae
Mimusops elengi	Bulletwood, Elengi, The Indian Medlar Tree	Bagalu, Nanja, Rangja, Bakul, Wovali, Pagadimara, Ranjal, Henja	Sapotaceae
Mitragyna parvifolia[1]	Kaim, Phaldu	Kadambolu, Kadabu, Kalamb, Kadaval, Kadaga, Kongu	Rubiaceae
Morinda tomentosa[3]		Maddi	Rubiaceae
Murraya koenigii	Curry Leaf Tree	Kadi, Karibevu, Karibevn	Rutaceae
Myristica dactyloides		Netra, Kaambli	Myristicaceae
Myristica fatua		Rampatre, Kambi	Myristicaceae
Myristica malabarica	False Nutmeg, Bombay Mace Tree	Kanage, Doddajajikai, Rumanadike	Myristicaceae
Myristica spp.			Myristicaceae
Naringi crenulata[3]	Wood Apple	Bela, Naibela, Kadubela, Kadhorange	Rutaceae
Nothapodytes foetida[3]		Hethari, Kodsa, Hedare	Icacinaceae
Olea dioica		Hajeakerkal, Akki, Aksalle	Oleaceae
Ougeinia oojeinensis[2]	Sandan	Kari honne, Kurimutal	Fabaceae

LATIN NAME	COMMON NAME	VERNACULAR NAME	FAMILY
Palaquium ellipticum[3]	Indian Gutta Percha	Nadasalle, Panchotemara, Natigattapercha, Hadasale, Pali, Halganne	Sapotaceae
Palaquium spp.			Sapotaceae
Pandanus fascicularis[2]		Mundachekke	Pandanaceae
Pandanus spp.	Pandanus		Pandanaceae
Pavetta indica	White Pavetta	Pavsatte, Pavati, Pappadi, Pavatte	Rubiaceae
Peltophorum pterocarpum[3]	Copper Pod, Rusty Shield Bearer, The Rusty Braziletto Wood		Caesalpiniaceae
Persea macrantha[1,3]		Gulmavu, Kurma, Kawadi	Lauraceae
Phoebe spp.			Lauraceae
Phoenix sylvestris	Date Sugar Palm, Wild Date Palm	Echalu	Arecaceae
Pinanga dicksonii[1]		Jonjarige, Kaduadike, Jandarige	Arecaceae
Pinus spp.			Pinaceae
Pithecellobium dulce[3]	Quamachil, Madras Thorn, Manila Tamarind	Kaduhunse, Seemehunse, Kottampuli	Mimosaceae
Plumeria rubra[2]	Temple Tree, Pagoda Tree	Kangalu, Deva ganigile, Kadu sampage	Apocynaceae
Poeciloneuron indicum	Ballagi, Bahera, Bakura	Ballagi, Kirballi	Clusiaceae
Poeciloneuron spp.			Clusiaceae
Polyalthia fragrans[1]		Gowrimara, Kakechapuga	Annonaceae
Psidium guajava	Guava, Commom Guava	Seebe, Jama phala, Sebehannu	Myrtaceae
Pterocarpus indicus	Malay Padauk, Narra	Badabakka	Fabaceae
Pterocarpus marsupium	Kino Tree, Indian Kino Tree, Malabar Kino Tree, Bijasal	Asana, Kino, Bijasal, Honne, Honni, Volle honne, Bange, Raktahonne	Fabaceae
Pterocarpus spp.			Fabaceae
Pterocymbium tinctorium[3]	Papita		Sterculiaceae
Pterospermum spp.			Sterculiaceae
Punica granatum	Pomegranate	Dalimba	Punicaceae
Radermachera xylocarpa[1,3]	Padri Tree	Koonanakoombumura, Udeva	Bignoniaceae
Salix spp.			Salicaceae
Salix tetrasperma	South Indian Willow, Indian Willow	Niravanji, Bariche	Salicaceae
Salvadora persica	Toothbrush Tree, Mustard Tree	Gonimara	Salvadoraceae
Samanea saman[1]	Rain Tree		Mimosaceae
Santalum album	Sandal Tree	Srigandha, Santal, Gandha, Gandhadamara, Chandan, Bhandrasri, Bavanna, Agarugandha	Santalaceae Sapindaceae
Sapindus emarginatus[2]	Soapnut Tree of South India	Antuvala	Sapindaceae
Sapindus spp.			Sapindaceae
Sapium insigne		Karud-nandi, Kuruda, Kannupade, Nanaka	Euphorbiaceae
Saraca asoca[2]	Ashoka	Ashokadamara, Ashoka, Kusge, Aksunkar, Kenkali, Anchange	Caesalpiniaceae
Schefflera spp.			Araliaceae

LATIN NAME	COMMON NAME	VERNACULAR NAME	FAMILY
Schleichera oleosa[1]	Lac Tree, Macassar Oil Tree, Ceylon Oak, Kusum	Kusum, Kodlimarka, Sagade, Kendala, Chakota, Chendala, Jendala, Chagate, Chakatte, Chakota, Chendala, Jendala	Sapindaceae
Schleichera spp.			Sapindaceae
Schrebera swietenioides	Weaver's - Beam Tree, Mokha	Bula, Gante, Kalgante, Mogalingamara, Magganti	Oleaceae
Scolopia crenata		Chapte, Japle, Doddajaapaalajaple, Adikejaple, Kodalimara, Kokkari	Flacourtiaceae
Semecarpus anacardium	Marking Nut tree, Oriental Cashew, Dhoby Nut Tree	Geru, Kadgeru, Karigeru, Goddugeru	Anacardiaceae
Shorea roxburghii[2]	Taloora Lac Tree	Jalari, Zhal, Bhallari, Jhallmara, Jaluda, Jhallanda, Jalla	Dipterocarpaceae
Shorea spp.			Dipterocarpaceae
Soymida febrifuga	Indian Redwood, Bastard-Cedar	Sombi, Some, Suami	Meliaceae
Spondias acuminata		Ambate, Kadamte, Kadambada, Marahunsie, Vrykshamla	Anacardiaceae
Spondias pinnata[3]	Wild Mango, Hog-Plum	Amate, Goddamae, Amte, Amatekaye, Ambattemara, Poondi, Kaadamate, Marahunsie, Vrykshamla	Anacardiaceae
Sterculia guttata		Hullmara, Jenu kathala, Hulithordu, Nayiwate, Happusavaga	Sterculiaceae
Sterculia spp.			Sterculiaceae
Sterculia urens	Karaya, Kadaya, Katira Gum Tree	Bhurali, Happusavage, Hulithordu, Kempudale	Sterculiaceae
Sterculia villosa	Udal	Bilidale, Shavige, Savaya, Chauri	Sterculiaceae
Stereospermum personatum[2]	Trumpet-Flower, Yellow Snake Tree	Kalludi bondh, Vala, Kaala-adri, Vaadari, Badnirulli, Kadunugge	Bignoniaceae
Stereospermum spp.			Bignoniaceae
Stereospermum suaveolens	Padri Tree	Kaladri, Padri, Hanse, Hudaybilla, Kavi, Vulunantrimarada	Bignoniaceae
Streblus asper	Siamese Rough-Bush	Mitli, Mittemara, Mitligade, Ponalige, Punje, Mitle	Moraceae
Strychnos nux-vomica	Snake-wood, Nux-Vomica, Strychnine Tree	Kajra, Ittemajura, Kasga, Nanjinmara, Kasarka,Nanjankordu, Etti, Kasan, Ittangi, Kanjira, Hemmush	Loganiaceae
Strychnos potatorum	Clearing-nut Tree, Nirmali	Chilla, Chilu, Chilladabeeja	Loganiaceae
Swietenia mahogani	Mahogany, Spanish, Cuban, Puerto Rico, or Jamaica Mahogany Tree, True Mahogany		Meliaceae
Swietenia spp.			Meliaceae
Symplocos cochinchinensis[3]		Chunga, Gunga, Kunneralu	Symplocaceae
Symplocos spp.			Symplocaceae

LATIN NAME	COMMON NAME	VERNACULAR NAME	FAMILY
Syzygium caryophyllatum[3]		Kunti-neeral	Myrtaceae
Syzygium cumini[2]	Jaman, Jambolan, Black Plum, Java Plum	Neralu, Jambul, Jamun, Nerale	Myrtaceae
Syzygium gardneri[1]		Hodike neralu, Bilithirpu, Meenangi	Myrtaceae
Syzygium hemisphericum[3]		Banneralu	Myrtaceae
Syzygium spp.			Myrtaceae
Syzygium zeylanicum[3]		Chunginamara, Nerkal	Myrtaceae
Tamarindus indica	Tamarind Tree	Hunase mara, Imli, Huli, Amli	Caesalpiniaceae
Tectona grandis	Teak	Sagavani, Tega, Jadi, Tyagadamara	Verbenaceae
Terminalia alata[2]	Laurel	Mathi, Banapu, Sadada	Combretaceae
Terminalia arjuna	Arjun	Holemathi, Torematti, Bilimatti, Maddi	Combretaceae
Terminalia bellirica	Belliric Myrobalan, Bahera	Ghoting, Shanti, Tate, Tare	Combretaceae
Terminalia catappa	Indian Almond Tree, Bengal Almond, Olive Bark Tree, Fijian Almond Tree	Badami	Combretaceae
Terminalia chebula	Gallnut, Chebulic Myrobalan, Myrobalan	Alale, Harda, Anale	Combretaceae
Terminalia paniculata	Flowering Murdah, Kindal	Kindalhongalu, Hunalu, Hulube, Marwa, Hunagalu	Combretaceae
Terminalia spp.			Combretaceae
Tetrameles nudiflora[2]	Baing Tree, Maina-Tree	Bondalo, Kadbende, Velahimi, Jermala, Erimalu, Bolur, Ernal	Datiscaceae
Thespesia populnea	Portia Tree, Umbrella Tree, Indian Tulip Tree, False Rosewood	Huvarsi, Bugarimara, Amrutaballi, Ane-bule, Paltbilu, Kandarola, Adavi-bendi, Jogiyarale	Malvaceae
Toona ciliata[3]	Toon, Red Cedar, Moulmein Cedar	Gandhagarige, Mandurike, Noga	Meliaceae
Trema orientalis	Oriental Nettle, Charcoal Tree, Indian Nettle Tree	Kiruhale, Gerakalumara, Gorkalu, Budikeri, Neerbende	Ulmaceae
Trewia nudiflora	False White Teak, Getul	Katkumbla, Kadukanji	Euphorbiaceae
Vateria indica[2]	Piney Varnish Tree, Indian Copal Tree, White Dammar	Munda-dhupa, Saldhupa, Maddidhupa, Looguludhupa, Dhupadamara, Saldhup, Vellapayin, Hoogadamara, Bilaguggala, Biladaamara, Dhupa	Dipterocarpaceae
Vepris bilocularis[1]		Dodthuppe	Rutaceae
Viburnum punctatum[2]		Yalesandi	Caprifoliaceae
Vitex altissima	Milla	Balgay, Myrole, Balge, Bharange, Bailad, Naviladi, Tornukki	Verbenaceae
Vitex leucoxylon		Holelakki	Verbenaceae
Vitex negundo		Lakki, Wekky, Nakkilu, Nekki	Verbenaceae
Vitex spp.			Verbenaceae
Wendlandia spp.		Pettigadurgigia	Rubiaceae

LATIN NAME	COMMON NAME	VERNACULAR NAME	FAMILY
Wendlandia thyrsoidea[2]		Kadusuragi, Channangi, Kammagaggare, Beltada	Rubiaceae
Wrightia spp.			Apocynaceae
Wrightia tinctoria	Pala Indigo-Plant, Wrightia	Kadunurka, Hala, Makab, Bepalle, Kodesige	Apocynaceae
Xanthophyllum flavescens		Karivokkichalace, Maddinasoppu,Maralumathangi	Xanthophyllaceae
Xantolis tomentosa[2]		Hudiguilu, Kampale, Kabbinadamara	Sapotaceae
Xeromphis spinosa	Common Emetic Nut	Kare, Upkare, Mangar	Rubiaceae
Xeromphis uliginosa[1,3]			Rubiaceae
Xylia xylocarpa[2]	Burma Iron Wood	Jambe, Jamba, Tirawa, Shilpe, Aravutakku, Betada-varike, Hommavarika, Takku	Rubiaceae
Zanthoxylum rhetsa[3]	Camp Cot Wood	Junima, Triphal, Jununina, Jimni-mara, Kawate	Rutaceae
Ziziphus mauritiana[2]	Indian Jujube, Common Jujube, Chinese Date, Baer	Yalachi, Elanji, Elechi	Rhamnaceae
Ziziphus spp.			Rhamnaceae
Ziziphus xylopyrus[1]		Chotte, Chitte, Challe, Gotti, Mullukare	Rhamnaceae

KEY

1: Species whose generic name has changed (see List 1 below)[@]
2: Species whose specific name has changed (see List 2 below)[@]
3: Species whose generic and specific names have changed (see List 3 below)[@]

@ Sources for Name Changes: Chandra and Gaur, 1988; Pant, 1986; Saldanha, 1984; Saldanha and Nicolson, 1976; Santapau and Henry 1984; Sharma *et al*, 1984

*** Sources for Common and Vernacular Names:** CSIR, 1986; Hawkins, 1986; Israel and Sinclair, 1987; MP; Parkinson, 1923; Puttarudriah 1983; QA; Saldanha, 1984; Venkataramany *et al*, 1981; Venkatesh, 1976

LIST 1

Acacia catechu	Mimosa catechu
Albizia lebbeck	Acacia lebbeck
Albizia odoratissima	Mimosa odoratissima
Albizia procera	Mimosa procera
Delonix regia	Poinciana regia
Ervatamia heyneana	Tabernaemontana heyneana
Ervatamia spp.	Tabernaemontana spp.
Garcinia indica	Brindonia indica
Haldina cordifolia	Adina cordifolia
Knema attenuata	Myristica attenuata
Macaranga peltata	Mappa peltata
Madhuca longifolia	Bassia longifolia
Mitragyna parvifolia	Stephegyne parvifolia
Persea macrantha	Machilus macrantha
Pinanga dicksonii	Areca dicksonii
Polyalthia fragrans	Guatteria fragrans
Radermachera xylocarpa	Bignonia xylocarpa
Samanea saman	Enterolobium saman
Syzygium gardneri	Eugenia gardneri
Vepris bilocularis	Toddalia bilocularis
Ziziphus xylopyrus	Rhamnus xylopyrus

LIST 2

Acacia nilotica	Acacia arabica
Acacia polycantha	Acacia suma
Actinodaphne angustifolia	Actinodaphne hookeri
Ailanthus triphysa	Ailanthus malabarica
Alangium salvifolium	Alangium lamarckii
Albizia chinensis	Albizia stipulata, Albizia marginata
Anthocephalus chinensis	Anthocephalus indicus
Anthocephalus chinensis	Anthocephalus cadamba
Artocarpus gomezianus	Artocarpus lakoocha
Artocarpus heterophyllus	Artocarpus integrifolius
Bombax ceiba	Bombax malabaricum
Bombax ceiba	Salmalia malabarica
Borassus flabellifer	Borassus aethiopum
Bridelia crenulata	Bridelia retusa
Buchanania axillaris	Buchanania angustifolia
Buchanania lanzan	Buchanania latifolia
Butea monosperma	Butea frondosa
Callophyllum elatum	Calophyllum tomentosum
Calophyllum apetalum	Calophyllum decipiens
Calophyllum apetalum	Calophyllum wightianum
Canthium dicoccum	Canthium didymum
Capparis divaricata	Capparis stylosa
Carallia brachiata	Carallia integerrima
Cassia siamea	Cassia florida
Cinnamomum verum	Cinnamomum zeylanicum

Cochlospermum religiosum	Cochlospermum gossypium
Crateva magna	Crateva nurvala
Crateva magna	Crateva religiosa
Cullenia exarillata	Cullenia excelsa
Diospyros ebenum	Diospyros assimilis
Diospyros melanoxylon	Diospyros tupru
Erythrina variegata	Erythrina indica
Eucalyptus camaldulensis	Eucalyptus rostrata
Evodia lunu-ankenda	Evodia roxburghiana
Ficus amplissima	Ficus tsjela
Ficus drupacea	Ficus mysorensis
Ficus exasperata	Ficus asperrima
Ficus nervosa	Ficus angustifolia
Ficus racemosa	Ficus glomerata
Ficus virens	Ficus infectoria
Ficus virens	Ficus lacor
Flacourtia indica	Flacourtia ramontchi, Flacourtia sepiaria
Garcinia gummi-gutta	Garcinia cambogia
Garcinia morella	Garcinia pictoria
Garcinia xanthochymus	Garcinia tinctoria
Glycosmis mauritiana	Glycosmis triphylla
Grewia tiliifolia	Grewia tiliifolia var. leptopetala
Holigarna grahamii	Holigarna wightii
Hydnocarpus laurifolia	Hydnocarpus wightiana
Kydia calycina	Kydia roxburghiana
Lagerstroemia microcarpa	Lagerstroemia thomsonii, Lagerstroemia lanceolata
Lagerstroemia speciosa	Lagerstroemia flos-reginae
Lannea coromandelica	Lannea grandis
Leucaena leucocephala	Leucaena glauca
Madhuca longifolia	Madhuca india
Mastixia arborea	Mastixia meziana
Melia dubia	Melia composita
Meliosma pinnata	Meliosma arnottiana
Memecylon umbellatum	Memecylon edule
Morinda tomentosa	Morinda tinctoria
Myristica dactyloides	Myristica contorta, Myristica beddomei
Myristica fatua	Myristica magnifica
Ougeinia oojeinensis	Ougeinia dalbergiodes
Pandanus fascicularis	Pandanus tectorium
Plumeria rubra	Plumeria acutifolia
Sapindus emarginatus	Sapindus laurifolia
Sapindus emarginatus	Sapindus trifoliatus
Saraca asoca	Saraca indica
Schleichera oleosa	Schleichera trijuga
Shorea roxburghii	Shorea talura
Spondias pinnata	Spondias mangifera
Spondias pinnata	Spondias acuminata
Stereospermum personatum	Stereospermum chelonoides
Symplocos cochinchinensis	Symplocos spicata
Syzygium cumini	Syzygium jambolanum
Terminalia alata	Terminalia tomentosa
Tetrameles nudiflora	Tetrameles grahamiana
Vateria indica	Vateria malabarica

Viburnum punctatum	Viburnum acuminatum
Wendlandia thyrsoidea	Wendlandia notoniana
Xylia xylocarpa	Xylia dolabriformis
Ziziphus mauritiana	Ziziphus jujuba

LIST 3

Aglaia anamallayana	Lansium anamallayanum
Aphanamixis polystachya	Amoora rohituka
Bauhinia malabarica	Piliostigma malabaricum
Casearia elliptica	Casearia tomentosa
Cassine glauca	Elaeodendron glaucum
Commiphora caudata	Protium caudatum
Derris indica	Pongamia pinnata, Pongamia glabra
Dimocarpus longan	Nephelium longana
Emblica officinalis	Phyllanthus emblica
Kingiodendron pinnatum	Hardwickia pinnata
Lannea coromandelica	Odina wodier
Maclura cochinchinensis	Cudrania javanensis, Cudrania cochinchinense
Mammea suriga	Ochrocarpus longifolius
Meyna laxiflora	Vangueria spinosa
Miliusa tomentosa	Saccopetalum tomentosum
Naringi crenulata	Feronia elephantum, Limonea acidissima
Nothapodytes foetida	Mappia tomentosa
Palaquium ellipticum	Dichopsis elliptica
Peltophorum pterocarpum	Inga pterocarpa
Persea macrantha	Machilus glaucescens
Pithecellobium dulce	Inga dulcis
Pterocymbium tinctorium	Sterculia campanulata
Radermachera xylocarpa	Stereospermum xylocarpum
Syzygium caryophyllatum	Myrtus caryophyllatus
Syzygium hemisphericum	Eugenia hemispherica
Syzygium zeylanicum	Eugenia spirata
Toona ciliata	Cedrela toona
Xantolis tomentosa	Sideroxylon tomentosum
Xeromphis spinosa	Randia brandisii, Randia dumetorum
Zanthoxylum rhetsa	Fagara budrunga

APPENDIX 2

SCIENTIFIC, COMMON, VERNACULAR, AND FAMILY NAMES OF PLANTS (OTHER THAN TREES) REPORTED FROM NATIONAL PARKS AND SANCTUARIES IN KARNATAKA*

LATIN NAME	COMMON NAME	VERNACULAR NAME	FAMILY
Abrus precatorius	Indian Liquorice, Jequirty	Gulganji, Guragangi	Fabaceae
Abutilon indicum[1]	Country Mallow	Mudregida, Hetutti, Thumbegida, Thutthi, Pattigida	Malvaceae
Acacia caesia[1]	Black Catechu	Kadu seege, Antarike	Mimosaceae
Acacia pennata	Rusty Mimosa	Kadu seege, Shembi, Shembetti	Mimosaceae
Acacia sinuata[1]	Washing Pod Tree, Soapnut Acacia	Seege, Sigekai, Seegeballi	Mimosaceae
Acacia spp.			Mimosaceae
Adhatoda zeylanica[1]		Adsale, Adusoge	Acanthaceae
Agave americana	Century Plant, American Aloe	Kathale, Bhuttale, Kalanaru	Agavaceae
Agave sisalana	Sisal, The Sisal Hemp of America	Kathale (Sissal)	Agavaceae
Agave spp.			Agavaceae
Allophylus cobbe[1]		Lavate-pannu, Kasa-bally, Murelebhendy, Togaratti, Sidisale	Sapindaceae
Arachis hypogea	Groundnut, Peanut, Monkey Nut	Nela-gadale	Fabaceae
Ardisia solanacea		Halad, Havalad, Chitmitlnunegida	Myrsinaceae
Argyreia cuneata		Kallanamele	Convolvulaceae
Argyreia cymosa		Uganibambu	Convolvulaceae
Argyreia thomsonii[2]		Uganihambu	Convolvulaceae
Aristolochia indica	The Indian Birthwort	Tarasingagida, Eswari beru	Aristolochiaceae
Artabotrys zeylanicus			Annonaceae
Artemisia spp.			Asteraceae
Asparagus racemosus		Satwari, Majjigegida	Liliaceae
Azima tetracantha		Uppagachi	Salvadoraceae
Baliospermum montanum[1]		Danti, Jumalgota	Euphorbiaceae
Bambusa arundinacea[1]	Thorny bamboo	Bombu, Hebbidiru, Douga, Biduru	Poaceae
Bambusa spp.			Poaceae
Barleria spp.			Acanthaceae
Bauhinia vahlii	Vahl's Bauhinia	Chambuli, Chambil, Basavanapadaballi	Caesalpiniaceae
Bridelia spp.			Euphorbiaceae
Caesalpinia bonduc[1]	Bonduc nut, The Fever Nut	Gujiga, Heggejjuga, Gejjiga	Caesalpiniaceae
Caesalpinia mimosoides		Kenjaga	Caesalpiniaceae
Calamus pseudo-tenuis		Betta, Sannabetta, Halbetta, Jaddubetta, Handibetta	Arecaceae
Calamus rheedii			Arecaceae
Calamus rotang	Cane	Sannabetta, Handibetta, Betta, Nagbetta	Arecaceae
Calamus spp.	Cane	Sannabetta, Handibetta, Betta	Arecaceae
Calamus travancoricus		Nayibetta	Arecaceae

LATIN NAME	COMMON NAME	VERNACULAR NAME	FAMILY
Callicarpa tomentosa[1]		Tagdatti, Towdatti, Mardi, Ardri	Verbenaceae
Calotropis gigantea		Yukka, Arkagida	Asclepiadaceae
Calycopteris floribunda		Billi-yaai, Marasadaboli, Kubsaballi, Neeraballi	Combretaceae
Canthium parviflorum[1]		Kare	Rubiaceae
Capparis divaricata		Hunasadlimulla	Capparaceae
Capparis spp.			Capparaceae
Capparis zeylanica[1]		Anthundikai, Kathrihambu, Tottulla	Capparaceae
Carallia brachiata			Rhizophoraceae
Carallia lucida		Naihalasu	Rhizophoraceae
Carissa carandas	Karaunda	Karekai, Kaval-balli, Kabli, Kawli, Carchinakai	Apocynaceae
Cassia auriculata	Eared Senna, Tanner's Cassia, Avaram	Avarike, Olle thangadi, Tangedu	Caesalpiniaceae
Cassia tora	Foetid cassia	Chagache, Tagate	Caesalpiniaceae
Celastrus paniculatus	The Black Oil Plant, Oleum Nigrum Plant	Gengugeballi, Kariganne	Celastraceae
Celastrus spp.			Celastraceae
Chromolaena odorata[1]	Eupatorium		Asteraceae
Cipadessa baccifera[1]		Chittunde, Chittumbe, Sidugoli	Meliaceae
Cissus spp.			Vitaceae
Clematis gouriana		Arkanambu, Arikeballi	Ranunculaceae
Clematis spp.			Ranunculaceae
Clerodendrum viscosum[1]		Bhat, Bhandira, Kahi, Basavanapada, Taggi, Ibbare	Verbenaceae
Coffea spp.	Coffee	Coffee	Rubiaceae
Combretum latifolium[1]		Zaloosey, Madbel	Combretaceae
Cordia dichotoma[1]		Challe, Polle, Chelle, Chikkachalle	Boraginaceae
Cordia macleodii		Hadaga,Bilichalle, Doddachelle	Boraginaceae
Cordia spp.			Boraginaceae
Costus speciosus		Chengalvakoshtu	Costaceae
Crotalaria spp.			Fabaceae
Croton spp.			Euphorbiaceae
Cryptolepis buchananii		Kurbuntun-balli, Haluballi	Asclepiadaceae
Curcuma aromatica	Wild Turmeric, Yellow Zedoary	Kad-arishina, Kasturi-arishina	Zingiberaceae
Curcuma longa	Turmeric	Arasina, Harasina	Zingiberaceae
Curcuma spp.		Ran haldi, Sulli	Zingiberaceae
Cymbopogon citratus	Lemon grass	Majjigehullu	Poaceae
Cymbopogon flexuosus	East Indian Lemongrass, Malabar or Cochin Lemongrass		Poaceae
Cymbopogon spp.			Poaceae
Dalbergia volubilis			Fabaceae
Datura stramonium	Jimson Weed, Mad Apple, Stink Wood, Stramonium, Thorn Apple	Ummatta	Solanaceae
Dendrocalamus strictus	Male bamboo, Solid bamboo	Kiribidiru, Medar	Poaceae
Dendrophthoe falcata[1]		Badamike, Jiddu, Bandhulu	Loranthaceae

LATIN NAME	COMMON NAME	VERNACULAR NAME	FAMILY
Desmodium spp.			Fabaceae
Dioscorea spp.		Kadu-karand	Dioscoreaceae
Diploclisia glaucescens[3]			Menispermaceae
Dodonaea viscosa	Dodonaea	Bundurgi, Rangarike, Bandarike, Kanagalu, Angaru, Badanakie	Sapindaceae
Dolichos biflorus	Horsegram	Hurali	Fabaceae
Elaeagnus conferta[1]			Elaeagnaceae
Elaeagnus kologa			Elaeagnaceae
Elettaria cardamomum	Cardamom, Lesser Cardamom	Yellaki	Zingiberaceae
Eleusine coracana	Ragi, Finger Millet, African Millet	Ragi	Poaceae
Elsholtzia fruticosa[3]		Tuggigida, Falia	Lamiaceae
Ensete superbum[3]			Musaceae
Entada phaseoloides[1]	The Sword-bean of India, West Indian Cacoon	Ane-balli, Gare, Ganpeballi, Ganape-hambu, Anebathi	Mimosaceae
Erythroxylum monogynum[1]	Bastard Sandal, Red Cedar	Devadari	Erythroxylaceae
Erythroxylum spp.			Erythroxylaceae
Euphorbia antiquorum		Bonthekalli	Euphorbiaceae
Euphorbia tirucalli	Milk Bush, Indian Tree Spurge	Kalli, Kelgalli	Euphorbiaceae
Flemingia spp.			Fabaceae
Flemingia strobilifera[1,2]		Kanpoothi, K malu, Kumbilteri	Fabaceae
Globba spp.			Zingiberaceae
Gloriosa superba	Malabar Glory Lily	Agnisikhe, Akkatangaballi, Kolikalu, Kardikannina-gadde, Kolikaliana-balli	Liliaceae
Glycosmis mauritiana[1]		Manikyan, Gurodagida	Rutaceae
Gnetum ula[1]		Navurukatte, Kodkamballi	Gnetaceae
Gnidia glauca[3]		Mukkadaka, Enujariga, Mukute	Thymelaeaceae
Grewia damine[1]		Ulpi, Udippe	Tiliaceae
Grewia hirsuta		Cikkudippe, Jana	Tiliaceae
Hackelochloa granularis[2]		Kadu sanna harka hullu	Poaceae
Helicteres isora	East Indian Screw Tree	Kauargi, Yedamuri, Balmuri, Kowry, Kempukowri	Sterculiaceae
Hemidesmus indicus	Indian Sarsaparilla	Sogadeberu, Namadaberu, Karibandha	Periplocaceae
Heteropogon contortus	Spear Grass, Bellary Grass	Kari vunugada hullu, Sunkari hullu	Poaceae
Heteropogon spp.			Poaceae
Holarrhena antidysenterica	Conessia Holarrhena	Beppale, Kodamurdi, Kuda, Koodsalu, Korchu, Kodachiga, Kodasa	Apocynaceae
Ichnocarpus frutescens		Gorwiballi, Narihambu, Karihambu	Apocynaceae
Imperata cylindrica[1]	Elephant grass, Thatch grass	Sanna dabbai hullu	Poaceae
Indigofera atropurpurea[1]		Neeli	Fabaceae
Indigofera spp.			Fabaceae
Ipomoea spp.			Convolvulaceae
Ixora arborea[1]	Torchwood Ixora	Goravi, Karji, Gurga, Korgi, Kansuragi	Rubiaceae

LATIN NAME	COMMON NAME	VERNACULAR NAME	FAMILY
Ixora brachiata		Gurani, Gerble	Rubiaceae
Ixora spp.			Rubiaceae
Jasminum arborescens	Jasmine, Tree Jasmine	Mallige	Oleaceae
Jasminum spp.			Oleaceae
Jatropha curcas	Physic Nut, Purging Nut	Turkkuharalu, Marala	Euphorbiaceae
Lantana camara	Lantana, Wild Sage	Rojagida, Ghaneri, Chadurang	Verbenaceae
Lantana spp.	Lantana	Ghaneri, Chadurang, Rojagida	Verbenaceae
Leea crispa[1]			Leeaceae
Leea indica[1]		Totmudki, Nurche, Jini, Midichi, Andilu, Karotai	Leeaceae
Leucas aspera		Thumbe gida	Lamiaceae
Loranthus spp.[4]		Badanike	Loranthaceae
Maytenus emarginata[3]		Thandarasi	Celastraceae
Maytenus spp.		Kadugandha	Celastraceae
Memecylon angustifolium		Belavakana	Melastomataceae
Millettia racemosa			Fabaceae
Mimosa pudica	Touch-me-not, Sensitive Plant	Muttidare muni, Hadergitte	Mimosaceae
Mimosa rubicaulis		Rasne, Uriseege	Mimosaceae
Murraya paniculata[1]	Orange Jessamine	Pandry, Angarakana gida	Rutaceae
Nephrodium spp.[4]	Tree Ferns		Thelypteridaceae
Nicotiana tabacum	Tobacco	Hoge soppu	Solanaceae
Ochlandra scriptoria[1]			Poaceae
Ochlandra spp.			Poaceae
Ochlandra talbotii		Wate, Wante-nulge	Poaceae
Ochlandra travancorica		Wate, Garte	Poaceae
Ochna obtusata[1]		Athraganchi	Ochnaceae
Ocimum sanctum	Holy basil, Sacred Basil	Sritulasi, Tulasi, Vishnututasi, Karitulasi	Lamiaceae
Opuntia dillenii[1]	Prickly Pear, Slipper Thorn	Papaskalli	Cactaceae
Opuntia elatior[2]		Papaskalli	Cactaceae
Oryza sativa	Rice, Paddy	Akki, Bhatta, Nellu	Poaceae
Oxytenanthera monostigma		Chiwa, Shib, Chova, Garte	Poaceae
Oxytenanthera spp.			Poaceae
Parthenium hysterophorus	Parthenium, Congress Grass		Asteraceae
Pennisetum glaucum[1]	Pearl Millet, Bulrush Millet, Spiked Millet	Sajje, Cumbe	Poaceae
Phoenix acaulis			Arecaceae
Phoenix humilis	Dwarf Date Palm, Hill Date Palm	Kirichalu	Arecaceae
Phoenix spp.			Arecaceae
Pistia spp.			Araceae
Premna tomentosa	Bastard Teak	Ije	Verbenaceae
Prosopis juliflora	Mesquite	Ballari jali	Fabaceae
Prosopis spp.			Fabaceae
Psychotria nigra[1]			Rubiaceae
Psychotria spp.			Rubiaceae
Pterolobium hexapetalum[1]	White Brasiletto Climber	Badubakka, Badabakka	Caesalpiniaceae
Randia rugulosa			Rubiaceae
Rauvolfia serpentina	Rauvolfia Root, Serpantine or Serpantina Root	Sarpagandhi, Garudapatala, Shivanabhiballi, Sutranavi, Patalagandhi	Apocynaceae

LATIN NAME	COMMON NAME	VERNACULAR NAME	FAMILY
Salvadora spp.			Salvadoraceae
Scutia circumscissa[1]		Kuradi	Rhamnaceae
Securinega leucopyrus[2,3]		Bilihuli, Huligida, Uli, Hooli, Sodi, Bilehuli, Gudahale	Euphorbiaceae
Securinega spp.			Euphorbiaceae
Sida rhombifolia		Jungly-methbala, Binnegarugagida, Bolamgadale, Gobetade-gida, Kallangadale	Malvaceae
Sida spp.			Malvaceae
Smilax spp.			Smilacaceae
Smilax zeylanica[1]		Ghotvel	Smilacaceae
Solanum giganteum		Kutri, Chunna	Solanaceae
Solanum spp.			Solanaceae
Solanum stramoniifolium[1]		Gulabadane	Solanaceae
Solanum violaceum[1]		Sonde	Solanaceae
Sorghum bicolor[3]	Sorghum, Jowar	Jola	Poaceae
Sorghum nitidum[3]		Darbehullu	Poaceae
Spatholobus parviflorus[1,3]		Mukkate balli, Kadavarasihambu, Muttannabilu	Fabaceae
Strobilanthes spp.[4]		Gurgi, Karvi, Kurunegi, Biligurgi	Acanthaceae
Stylosanthes spp.			Fabaceae
Tarenna asiatica			Rubiaceae
Thea sinensis	Tea	Tea	Theaceae
Themeda cymbaria		Balai hullu	Poaceae
Themeda spp.			Poaceae
Themeda triandra[1]	Rooi Grass, Red Grass	Bhimana-hanchi, Bettanchi hullu, Thodda anji hullu, Gondamanchi hullu	Poaceae
Thottea siliquosa[3]		Chakranike	Aristolochiaceae
Tinospora cordifolia		Amrutaballi, Ane-bule, Paltbilu	Menispermaceae
Urena lobata[1]		Van-bhendi, Otte	Malvaceae
Ventilago denticulata[1]		Gapsandiballi, Harugasuratichekka, Kuriyadi	Rhamnaceae
Ventilago madraspatana		Popplichakke, Pupli, Papudi	Rhamnaceae
Ventilago spp.			Rhamnaceae
Vernonia spp.			Asteraceae
Vitis spp.[4]			Vitaceae
Wagatea spicata		Hoogliganje, Kadunche, Gaijigaballi	Caesalpiniaceae
Wattakaka volubilis[3]		Akesoppu, Dugdhike	Asclepiadaceae
Woodfordia fruticosa[1]	Fire Flame Bush, Shiranjitea	Tamrapushpi	Lythraceae
Xeromphis uliginosa[2]		Kare	Rubiaceae
Zea mays	Maize, Corn, Indian Corn	Mekkejola, Musukojola, Goinjol	Poaceae
Zingiber officinale	Ginger	Shunti, Hasisunti	Zingiberaceae
Zingiber spp.			Zingiberaceae
Ziziphus glabrata[1]		Chotte, Karkunti	Rhamnaceae
Ziziphus oenoplia	Jackal Jujube	Paragi, Sodli, Soorimullu, Barige, Challe, Hurasurah, Karisurimullu	Rhamnaceae

LATIN NAME	COMMON NAME	VERNACULAR NAME	FAMILY
Ziziphus rugosa		Semmarlu, Bemmarlu	Rhamnaceae
Ziziphus spp.			Rhamnaceae

KEY

1: Species whose specific name has changed (see List 1 below)*
2: Species whose generic name has changed (see List 2 below)*
3: Species whose generic and specific names have changed (see List 3 below)*
4: Species whose genus is now obsolete, and split into several genera*

@ **Sources for Name Changes:** Chandra and Gaur, 1988; Pant, 1986; Saldanha, 1984; Saldanha and Nicolson, 1976; Santapau and Henry, 1984 Sharma *et al*, 1984

* **Sources for Common and Vernacular Names:** CSIR, 1986; Hawkins, 1986; Israel and Sinclair, 1987; MP; Parkinson, 1923; Puttarudri 1983; QA; Saldanha, 1984; Venkataramany *et al*, 1981; Venkatesh, 1976

LIST 1

Abutilon indicum	Abutilon asiaticum
Acacia sinuata	Acacia rugata
Acacia sinuata	Acacia concinna
Acacia caesia	Acacia columnaris
Acacia caesia	Acacia intsia
Adhatoda zeylanica	Adhatoda vasica
Allophylus cobbe	Allophylus rheedii
Baliospermum montanum	Baliospermum axillare
Bambusa arundinacea	Bambusa bambos
Caesalpinia bonduc	Caesalpinia bonducella
Callicarpa tomentosa	Callicarpa lanata
Capparis zeylanica	Capparis horrida
Cipadessa baccifera	Cipadessa fruticosa
Clerodendrum viscosum	Clerodendrum infortunatum
Combretum latifolium	Combretum extensum
Cordia dichotoma	Cordia obliqua, Cordia myxa
Elaeagnus conferta	Elaeagnus latifolia
Entada phaseoloides	Entada scandens
Erythroxylum monogynum	Erythroxylum indicum
Flemingia strobilifera	Flemingia bracteata
Glycosmis mauritiana	Glycosmis pentaphylla
Gnetum ula	Gnetum scandens
Grewia damine	Grewia salvifolia
Imperata cylindrica	Imperata arundinacea
Indigofera atropurpurea	Indigofera cassioides
Indigofera atropurpurea	Indigofera pulchella
Ixora arborea	Ixora parviflora
Leea crispa	Leea edgeworthii
Leea indica	Leea sambucina

Maytenus emarginata	Gymnosporia montana
Murraya paniculata	Murraya exotica
Ochlandra scriptoria	Ochlandra rheedii
Ochna obtusata	Ochna squarrosa
Opuntia stricta	Opuntia dillenii
Pennisetum glaucum	Pennisetum typhoides
Psychotria nigra	Psychotria thwaitesii
Pterolobium hexapetalum	Pterolobium indicum
Scutia circumscissa	Scutia indica
Scutia circumscissa	Scutia myrtina
Securinega leucopyrus	Securinega virosa
Smilax zeylanica	Smilax macrophylla
Solanum stramoniifolium	Solanum ferox
Solanum violaceum	Solanum indicum
Spatholobus parviflorus	Butea parviflora
Spatholobus parviflorus	Spatholobus roxburghii
Themeda triandra	Themeda imberbis
Urena lobata	Urena sinuata
Ventilago denticulata	Ventilago calyculata
Woodfordia fruticosa	Woodfordia floribunda
Ziziphus glabrata	Ziziphus trinervia

LIST 2

Argyreia thomsonii	Lettsomia thomsonii
Flemingia strobilifera	Maughania strobilifera
Hackelochloa granularis	Manisuris granularis
Opuntia elatior	Catus elatior
Securinega leucopyrus	Flueggea leucopyrus
Thottea siliquosa	Apama siliquosa
Wattakaka volubilis	Dregia volubilis
Wattakaka volubilis	Marsdenia volubilis
Xeromphis spinosa	Randia dumetorum
Xeromphis spinosa	Randia longispina
Xeromphis uliginosa	Randia uliginosa

LIST 3

Canthium parviflorum	Plectronia parviflora
Chromolaena odorata	Eupatorium odoratum
Dendrophthoe falcata	Loranthus falcatus
Diploclisia glaucescens	Cocculus macrocarpus
Elsholtzia fruticosa	Colebrookia oppositifolia
Ensete superbum	Musa superba
Securinega leucopyrus	Flueggea microcarpa
Sorghum bicolor	Andropogon sorghum
Sorghum nitidum	Andropogon serratus
Spatholobus parviflorus	Butea parviflora
Tarenna asiatica	Webera corymbosa
Thottea siliquosa	Bragantia wallichii

APPENDIX 3

THREATENED[1] PLANTS OF KARNATAKA

[The names and status of these plants have been verified from: Nayar and Sastry (1987, 1988, 1990).]

PLANT	FAMILY	STATUS[1]
Adspiopterys canarensis	Malpighiaceae	Rare. Endemic
Aglaia talbotii	Meliaceae	Vulnerable. Endemic
Acacia campbellii	Fabaceae	Rare. Endemic
Alysicarpus gamblei	Fabaceae	Rare. Endemic
Bhidea burnsiana	Poaceae	Rare
Bulbophyllum elegantulum	Orchidaceae	Vulnerable. Endemic
Calamus nagbettai	Arecaceae	Vulnerable. Endemic
Ceropegia attenuata	Asclepiadaceae	Rare. Endemic
Ceropegia fimbriifera	Asclepiadaceae	Vulnerable. Endemic
Ceropegia metziana	Asclepiadaceae	Rare
Ceropegia spiralis	Asclepiadaceae	Vulnerable. Endemic
Commelina indehiscens	Commelinaceae	Rare. Endemic
Crotalaria digitata	Fabaceae	Rare. Endemic
Crotalaria globosa	Fabaceae	Rare. Endemic
Crotalaria lutescens	Fabaceae	Rare. Endemic
Crotalaria priestleyoides	Fabaceae	Rare. Endemic
Crotalaria rigida	Fabaceae	Rare. Endemic
Crotalaria sandoorensis	Fabaceae	End. Endemic
Cryptocoryne cognatoides	Araceae	Vulnerable. Endemic
Cyathocline lutea	Asteraceae	Rare. Endemic
Cynometra bourdillonii	Fabaceae	Vulnerable. Endemic
Cynometra travancorica	Fabaceae	Rare. Endemic
Dalechampia stenoloba	Euphorbiaceae	Rare
Decaschistia trilobata	Malvaceae	Rare. Endemic
Dimeria woodrowii	Poaceae	Rare. Endemic
Elaeocarpus munronii	Elaeocarpaceae	Rare. Endemic
Eleiotis trifoliolata	Fabaceae	Rare. Endemic
Eria albiflora	Orchidaceae	Rare. Endemic
Erinocarpus nimmonii	Tiliaceae	Rare. Endemic
Euonymus angulatus	Celastraceae	End. Endemic
Flemingia gracilis	Fabaceae	Rare. Endemic
Glyphochloa divergens	Poaceae	Rare. Endemic
Hedyotis cyanantha	Rubiaceae	Rare
Hopea jacobi	Dipterocarpaceae	Rare. Endemic
Hugonia belli	Linaceae	Rare?[2]. Endemic
Impatiens talbotii	Balsaminaceae	Rare. Endemic
Indigofera constricta	Fabaceae	Rare. Endemic
Iphigenia magnifica	Liliaceae	Vulnerable. Endemic
Iphigenia sahyadrica	Liliaceae	Endangered
Isachne lisboae	Poaceae	Not known. Endemic

PLANT	FAMILY	STATUS[1]
Isachne mysorensis	Poaceae	Rare. Endemic
Isonandra stocksii	Sapotaceae	Vulnerable. Endemic
Kingiodendron pinnatum	Fabaceae	Rare. Endemic
Lepidagathis diffusa	Acanthaceae	Indeterminate. Endemic
Leucas angustissima	Lamiaceae	Rare. Endemic
Madhuca insignis	Sapotaceae	Possibly extinct[3]. Endemic
Mackenziea caudata	Acanthaceae	Rare. Endemic
Marsdenia raziana	Asclepiadaceae	Rare. Endemic
Neanotis carnosa	Rubiaceae	Indeterminate. Endemic
Neanotis prainiana	Rubiaceae	Vulnerable. Endemic
Nanothamnus sericeus	Asteraceae	Rare. Endemic
Nogra dalzellii	Fabaceae	Vulnerable. Endemic
Ophiorrhiza brunonis	Rubiaceae	Presumed extinct[4]. Endemic
Ochreinaucleae missionis	Rubiaceae	Vulnerable. Endemic
Orophea uniflora	Annonaceae	Rare. Endemic
Phyllanthus talbotii	Euphorbiaceae	Rare. Endemic
Paracautleya bhatii	Zingiberaceae	Vulnerable. Endemic
Polyzygus tuberosus	Apiaceae	Rare. Endemic
Pterospermum reticulatum	Sterculiaceae	Rare. Endemic
Rotala ritchiei	Lythraceae	Vulnerable. Endemic
Salacia malabarica	Celastraceae	Endangered. Endemic
Senecio mayurii	Asteraceae	Rare. Endemic
Schizachyrium paranjpyeanum	Poaceae	Rare. Endemic
Thalictrum dalzellii	Ranunculaceae	Indeterminate. Endemic?[5]
Theriophonum dalzellii	Araceae	Rare. Endemic
Viscum mysorense	Loranthaceae	Indeterminate. Endemic

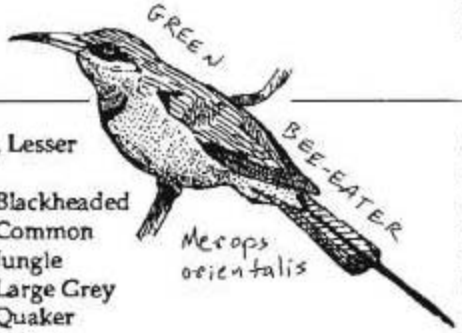
1. The term 'threatened' has been used here in accordance with the internationally accepted usage coined by the World Conservation Union (formerly the International Union for Conservation of Nature and Natural Resources). This term is used for species which fall into one of the following categories [Jain and Sastry 1980]:
Endangered: Species/taxa in danger of extinction and whose survival is unlikely if factors threatening them continue to operate.
Vulnerable: Species/taxa likely to move into the endangereed category in the near future if threatening factors continue to operate.
Rare: Species/taxa with small world populations that are not at present endangered or vulnerable, but are at risk of becoming so.
'Endemic' here means endemic to India.
2. Mentioned as occuring "sporadically in its range", and "known to occur only from a few localities after the type locality" [Nayar and Sastry 1990].
3. A tree known from only two collections, both from the Mangalore area of Dakshina Kannada District, made in the last century. Not located in this century despite explorations. Type locality is now badly deforested, due to urbanisation and other developmental activities [Nayar and Sastry 1990].
4. No collections since 1952, though its known habitat has been "well explored" [Nayar and Sastry 1987].
5. Mentioned as "localised in distribution" [Nayar and Sastry 1990].

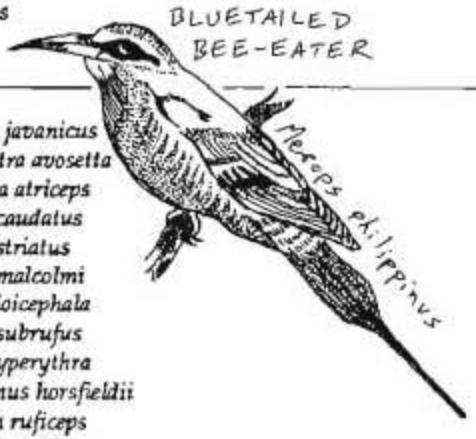
APPENDIX 4

MAMMALS, BIRDS, REPTILES, AND AMPHIBIANS REPORTED FROM NATIONAL PARKS AND SANCTUARIES IN KARNATAKA

Common Name	*Scientific Name*
MAMMALS[1]	
Antelope, Indian or Blackbuck	*Antilope cervicapra*
Antelope, Fourhorned or Chowsingha	*Tetracerus quadricornis*
Bear, Sloth	*Melursus ursinus*
Boar, Indian Wild	*Sus scrofa*
Cat, Jungle	*Felis chaus*
Cat, Rustyspotted	*Felis rubiginosa*
Civet, Brown Palm	*Paradoxurus jerdoni*
Civet, Common Palm or Toddy Cat	*Paradoxurus hermaphroditus*
Civet, Small Indian	*Viverricula indica*
Deer, Barking or Muntjac	*Muntiacus muntjak*
Deer, Mouse	*Tragulus meminna*
Deer, Spotted or Chital	*Axis axis*
Dog, Indian Wild or Dhole	*Cuon alpinus*
Elephant, Indian	*Elephas maximus*
Flying Fox	*Pteropus giganteus*
Fox, Indian	*Vulpes bengalensis*
Gaur	*Bos gaurus*
Gerbille, Indian	*Tatera indica*
Hare, Indian	*Lepus nigricollis*
Hyena, Striped	*Hyaena hyaena*
Jackal	*Canis aureus*
Langur, Common, or Hanuman Monkey	*Presbytis entellus*
Langur, Nilgiri	*Presbytis johni*
Leopard, or Panther	*Panthera pardus*
Leopard-cat	*Felis bengalensis*
Loris, Slender	*Loris tardigradus*
Macaque, Bonnet	*Macaca radiata*
Macaque, Liontailed	*Macaca silenus*
Mongoose, Brown	*Herpestes fuscus*
Mongoose, Common	*Herpestes edwardsi*
Mongoose, Ruddy	*Herpestes smithi*
Mongoose, Stripednecked	*Herpestes vitticollis*
Otter, Clawless	*Aonyx cinerea*
Otter, Common	*Lutra lutra*
Otter, Smooth Indian	*Lutra perspicillata*
Pangolin, Indian	*Manis crassicaudata*
Porcupine, Indian	*Hystrix indica*
Rat, Indian Bush	*Golunda ellioti*
Rat, Whitetailed Wood	*Rattus blanfordi*

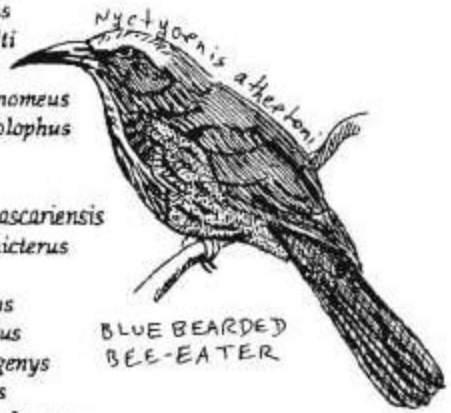
Sambar	*Cervus unicolor*
Shrew, Grey Musk or House Shrew	*Suncus murinus*
Squirrel, Common Giant Flying	*Petaurista petaurista*
Squirrel, Grizzled Giant	*Ratufa macroura*
Squirrel, Indian Giant	*Ratufa indica*
Squirrel, Threestriped Palm	*Funambulus palmarum*
Tiger	*Panthera tigris*
Wolf	*Canis lupus*





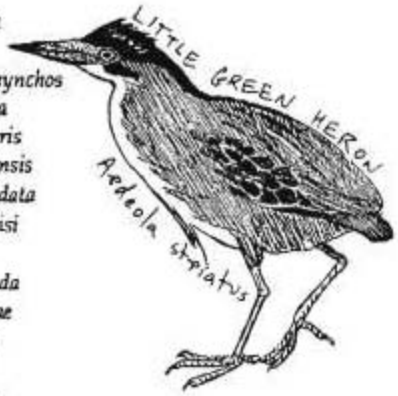
BIRDS[3]

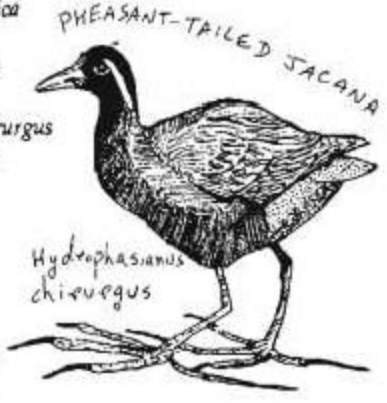
Adjutant, Lesser	*Leptoptilos javanicus*
Avocet	*Recurvirostra avosetta*
Babbler, Blackheaded	*Rhopocichla atriceps*
Babbler, Common	*Turdoides caudatus*
Babbler, Jungle	*Turdoides striatus*
Babbler, Large Grey	*Turdoides malcolmi*
Babbler, Quaker	*Alcippe poioicephala*
Babbler, Rufous	*Turdoides subrufus*
Babbler, Rufousbellied	*Dumetia hyperythra*
Babbler, Slatyheaded Scimitar	*Pomatorhinus horsfieldii*
Babbler, Spotted	*Pellorneum ruficeps*
Babbler, Whiteheaded	*Turdoides affinis*
Babbler, Yelloweyed	*Chrysomma sinense*
Barbet, Crimsonbreasted	*Megalaima haemacephala*
Barbet, Crimsonthroated	*Megalaima rubricapilla*
Barbet, Green	*Megalaima zeylanica*
Barbet, Small Green	*Megalaima viridis*
Baya	*Ploceus philippinus*
Bee-eater, Bluebearded	*Nyctyornis athertoni*
Bee-eater, Bluecheeked	*Merops superciliosus*
Bee-eater, Bluetailed	*Merops philippinus*
Bee-eater, Chesnutheaded	*Merops leschenaulti*
Bee-eater, Green	*Merops orientalis*
Bittern, Chestnut	*Ixobrychus cinnamomeus*
Bittern, Tiger	*Gorsachius melanolophus*
Blackbird	*Turdus merula*
Bluebird, Fairy	*Irena puella*
Bulbul, Black	*Hypsipetes madagascariensis*
Bulbul, Blackheaded Yellow	*Pycnonotus melanicterus*
Bulbul, Redvented	*Pycnonotus cafer*
Bulbul, Redwhiskered	*Pycnonotus jocosus*
Bulbul, Whitebrowed	*Pycnonotus luteolus*
Bulbul, Whitecheeked	*Pycnonotus leucogenys*
Bulbul, Yellowbrowed	*Hypsipetes indicus*
Bulbul, Yellowthroated	*Pycnonotus xantholaemus*
Bunting, Blackheaded	*Emberiza melanocephala*
Bunting, Redheaded	*Emberiza bruniceps*
Bustard, Great Indian	*Choriotis nigriceps*
Bustard-quail, Common	*Turnix suscitator*



Buzzard, Honey	*Pernis ptilorhyncus*
Buzzard-eagle, White-eyed	*Butastur teesa*
Chat, Pied Bush	*Saxicola caprata*
Chat, Stone	*Saxicola torquata*
Chloropsis, Goldfronted	*Chloropsis aurifrons*
Chloropsis, Goldmantled	*Chloropsis cochinchinensis*
Coot	*Fulica atra*
Cormorant	*Phalacrocorax carbo*
Cormorant, Little	*Phalacrocorax niger*
Crake, Brown	*Amaurornis akool*
Crane, Demoiselle	*Anthropoides virgo*
Crow, House	*Corvus splendens*
Crow, Jungle	*Corvus macrorhynchos*
Crow-pheasant	*Centropust sinensis*
Cuckoo, Indian	*Cuculus micropterus*
Cuckoo, Indian Plaintive	*Cacomantis passerinus*
Cuckoo, Pied Crested	*Clamator jacobinus*
Cuckoo, Rufousbellied Plaintive	*Cacomantis merulinus*
Cuckoo, Sirkeer	*Taccocua leschenaultii*
Cuckoo-shrike, Blackheaded	*Coracina melanoptera*
Cuckoo-shrike, Large	*Coracina novaehollandiae*
Curlew, Stone	*Burhinus oedicnemus*
Darter	*Anhinga rufa*
Dove, Emerald	*Chalcophaps indica*
Dove, Indian Ring	*Streptopelia decaocto*
Dove, Little Brown	*Streptopelia senegalensis*
Dove, Red Turtle	*Streptopelia tranquebarica*
Dove, Spotted	*Streptopelia chinesis*
Dove, Turtle	*Streptopelia turtur*
Drongo, Ashy	*Dicrurus leucophaeus*
Drongo, Black	*Dicrurus adsimilis*
Drongo, Bronzed	*Dicrurus aeneus*
Drongo, Greater Racket-tailed	*Dicrurus paradiseus*
Drongo, Lesser Racket-tailed	*Dicrurus remifer*
Drongo, Whitebellied	*Dicrurus caerulescens*
Duck, Comb	*Sarkidiornis melanotos*
Duck, Spotbill	*Anas poecilorhyncha*
Eagle, Black	*Ictinaetus malayensis*
Eagle, Crested Serpent	*Spilornis cheela*
Eagle, Greyheaded Fishing	*Ichthyophaga ichthyaetus*
Eagle, Pallas's Fishing	*Haliaeetus leucoryphus*
Eagle, Short-toed	*Circaetus gallicus*
Eagle, Tawny	*Aquila rapax*
Eagle-owl, Forest	*Bubo nipalensis*
Egret, Cattle	*Bubulcus ibis*
Egret, Large	*Ardea alba*
Egret, Little	*Egretta garzetta*
Egret, Smaller	*Egretta intermedia*
Falcon, Lanner/Lagger	*Falco biarmicus*
Falcon, Peregrine	*Falco peregrinus*

Finch-lark, Ashycrowned	*Eremopterix grisea*
Flowerpecker, Thickbilled	*Dicaeum agile*
Flowerpecker, Tickell's	*Dicaeum erythrorhynchos*
Flycatcher, Blacknaped	*Hypothymis azurea*
Flycatcher, Brown	*Muscicapa latirostris*
Flycatcher, Greyheaded	*Culicicapa ceylonensis*
Flycatcher, Nilgiri	*Muscicapa albicaudata*
Flycatcher, Paradise	*Terpsiphone paradisi*
Flycatcher, Redbreasted	*Muscicapa parva*
Flycatcher, Rufoustailed	*Muscicapa ruficauda*
Flycatcher, Tickell's Blue	*Muscicapa tickelliae*
Flycatcher, Whitebrowed Fantail	*Rhipidura aureola*
Flycatcher-shrike, Pied	*Hemipus picatus*
Garganey	*Anas querquedula*
Grebe, Little	*Podiceps ruficollis*
Gull, Brownheaded	*Larus brunnicephalus*
Harrier, Marsh	*Circus aeruginosus*
Harrier, Montagu's	*Circus pygargus*
Harrier, Pale	*Circus macrourus*
Hawk-cuckoo, Common	*Cuculus varius*
Hawk-eagle, Booted	*Hieraaetus pennatus*
Hawk-eagle, Crested	*Spizaetus cirrhatus*
Hawk-owl, Brown	*Ninox scutulata*
Heron, Grey	*Ardea cinerea*
Heron, Little Green	*Ardeola striatus*
Heron, Night	*Nycticorax nycticorax*
Heron, Pond	*Ardeola grayii*
Heron, Purple	*Ardea purpurea*
Hobby	*Falco subbuteo*
Hoopoe	*Upupa epops*
Hornbill, Common Grey	*Tockus birostris*
Hornbill, Great Pied	*Buceros bicornis*
Hornbill, Malabar Grey	*Tockus griseus*
Hornbill, Malabar Pied	*Anthracoceros coronatus*
Ibis, Black	*Pseudibis papillosa*
Ibis, White	*Threskiornis aethiopica*
Iora, Common	*Aegithina tiphia*
Iora, Marshall's	*Aegithina nigrolutea*
Jacana, Bronzewinged	*Metopidius indicus*
Jacana, Pheasant-tailed	*Hydrophasianus chirurgus*
Jay	*Garrulus glandarius*
Junglefowl, Grey	*Gallus sonneratii*
Junglefowl, Red	*Gallus gallus*
Kestrel	*Falco tinnunculus*
Kingfisher, Blue-eared	*Alcedo meninting*
Kingfisher, Common	*Alcedo atthis*
Kingfisher, Lesser Pied	*Ceryle rudis*
Kingfisher, Storkbilled	*Pelargopsis capensis*
Kingfisher, Whitebreasted	*Halcyon smyrnesis*
Kite, Blackwinged	*Elanus caeruleus*





Kite, Brahminy	*Haliastur indus*
Kite, Pariah	*Milvus migrans*
Koel	*Eudynamys scolopacea*
Lapwing, Redwattled	*Vanellus indicus*
Lapwing, Yellow-wattled	*Vanellus malabaricus*
Lark, Bush	*Mirafra assamica*
Lark, Crested	*Galerida cristata*
Lark, Malabar Crested	*Galerida malabarica*
Lark, Redwinged Bush	*Mirafra erythroptera*
Lark, Sand	*Calandrella raytal*
Lorikeet, Indian	*Loriculus vernalis*
Magpie-Robin	*Copsychus saularis*
Malkoha, Small Greenbilled	*Rhopodytes viridirostris*
Martin, Crag	*Hirundo rupestris*
Martin, Dusky Crag	*Hirundo concolor*
Merlin	*Falco columbarius*
Minivet, Scarlet	*Pericrocotus flammeus*
Minivet, Small	*Pericrocotus cinnamomeus*
Moorhen	*Gallinula chloropus*
Moorhen, Purple	*Porphyrio porphyrio*
Munia, Blackheaded	*Lonchura malacca*
Munia, Red or Avadavat	*Estrilda amandava*
Munia, Spotted	*Lonchura punctulata*
Munia, Whitebacked	*Lonchura striata*
Munia, Whitethroated	*Lonchura malabarica*
Myna, Brahminy	*Sturnus pagodarum*
Myna, Common	*Acridotheres tristis*
Myna, Greyheaded	*Sturnus malabaricus*
Myna, Hill	*Gracula religiosa*
Myna, Jungle	*Acridotheres fuscus*
Myna, Whiteheaded	*Sturnus erythropygius*
Nightjar, Common Indian	*Caprimulgus asiaticus*
Nightjar, Indian Jungle	*Caprimulgus indicus*
Nuthatch, Chestnutbellied	*Sitta castanea*
Nuthatch, Velvetfronted	*Sitta frontalis*
Oriole, Blackheaded	*Oriolus xanthornus*
Oriole, Blacknaped	*Oriolus chinesis*
Oriole, Golden	*Oriolus oriolus*
Osprey	*Pandion haliaetus*
Owl, Barn	*Tyto alba*
Owl, Brown Fish	*Bubo zeylonensis*
Owl, Collared Scops	*Otus bakkamoena*
Owl, Great Horned or Eagle-owl	*Bubo bubo*
Owl, Mottled Wood	*Strix ocellata*
Owl, Scops	*Otus scops*
Owlet, Jungle	*Glaucidium radiatum*
Parakeet, Alexandrine	*Psittacula eupatria*
Parakeet, Blossomheaded	*Psittacula cyanocephala*
Parakeet, Bluewinged	*Psittacula columboides*
Parakeet, Roseringed	*Psittacula krameri*

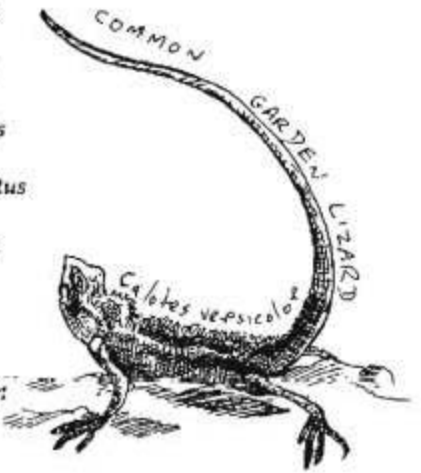
Partridge, Grey	*Francolinus pondicerianus*
Pastor, Rosy	*Sturnus roseus*
Peafowl, Common	*Pavo cristatus*
Pelican, Rosy	*Pelecanus onocrotalus*
Piculet, Speckled	*Picumnus innominatus*
Pigeon, Blue Rock	*Columba livia*
Pigeon, Green	*Treron phoenicoptera*
Pigeon, Green Imperial	*Ducula aenea*
Pigeon, Imperial	*Ducula badia*
Pintail	*Anas acuta*
Pipit, Indian Tree	*Anthus hodgsoni*
Pipit, Nilgiri	*Authus nilghiriensis*
Pipit, Paddyfield	*Anthus novaeseelandiae*
Pitta, Indian	*Pitta brachyura*
Plover, Great Stone	*Esacus magnirostris*
Plover, Little Ringed	*Charadrius dubius*
Pochard, White-eyed	*Aythya nyroca*
Pratincole, Small Indian	*Glareola lactea*
Quail, Common	*Coturnix coturnix*
Quail, Jungle Bush	*Perdicula asiatica*
Quail, Painted Bush	*Perdicula erythrorhyncha*
Redstart	*Phoenicurus phoenicurus*
Redstart, Black	*Phoenicurus ochruros*
Robin, Indian	*Saxicoloides fulicata*
Roller, Indian	*Coracias benghalensis*
Rosefinch, Common	*Carpodacus erythrinus*
Sandpiper, Common	*Tringa hypoleucos*
Sandpiper, Green	*Tringa ochropus*
Sandpiper, Wood	*Tringa glareola*
Shag, Indian	*Phalacrocorax fuscicollis*
Shama	*Copsychus malabaricus*
Shelduck, Ruddy	*Tadorna ferruginea*
Shikra	*Accipiter badius*
Shoveller	*Anas clypeata*
Shrike, Baybacked	*Lanius vittatus*
Shrike, Brown	*Lanius cristatus*
Shrike, Common Wood	*Tephrodornis pondicerianus*
Shrike, Grey	*Lanius excubitor*
Shrike, Large Wood	*Tephrodornis virgatus*
Shrike, Rufousbacked	*Lanius schach*
Skylark	*Alauda arvensis*
Skylark, Eastern	*Alauda gulgula*
Snipe, Fantail	*Gallinago gallinago*
Sparrow, House	*Passer domesticus*
Sparrow, Yellowthroated	*Petronia xanthocollis*
Sparrow-hawk	*Accipiter nisus*
Spinetail, Whiterumped	*Chaetura sylvatica*
Spoonbill	*Platalea leucorodia*
Spurfowl, Red	*Galloperdix spadicea*
Stilt, Blackwinged	*Himantopus himantopus*

Stint, Little	*Calidris minuta*
Stork, Blacknecked	*Ephippiorhynchus asiaticus*
Stork, Openbill	*Anastomus oscitans*
Stork, Painted	*Mycteria leucocephala*
Stork, Whitenecked	*Ciconia episcopus*
Sunbird, Purple	*Nectarinia asiatica*
Sunbird, Purplerumped	*Nectarinia zeylonica*
Sunbird, Yellowbacked	*Aethopyga siparaja*
Swallow	*Hirundo rustica*
Swallow, House	*Hirundo tahitica*
Swallow, Indian Cliff	*Hirundo fluvicola*
Swallow, Redrumped	*Hirundo daurica*
Swallow, Wiretailed	*Hirundo smithii*
Swallow-shrike, Ashy	*Artamus fuscus*
Swift, Alpine	*Apus melba*
Swift, Crested	*Hemiprocne longipennis*
Swift, House	*Apus affinis*
Swift, Large Brownthroated Spinetail	*Chaetura gigantea*
Swift, Palm	*Cypsiurus parvus*
Tailorbird	*Orthotomus sutorius*
Teal, Common	*Anas crecca*
Teal, Cotton	*Nettapus coromandelianus*
Teal, Large Whistling	*Dendrocygna bicolor*
Teal, Lesser Whistling	*Dendrocygna javanica*
Tern, Blackbellied	*Sterna acuticauda*
Tern, Indian River	*Sterna aurantia*
Thrush, Blue Rock	*Monticola solitarius*
Thrush, Malabar Whistling	*Myiophonus horsfieldii*
Thrush, Orangeheaded Ground	*Zoothera citrina*
Tit, Grey	*Parus major*
Tit, Yellowcheeked	*Parus xanthogenys*
Tree Pie, Indian	*Dendrocitta vagabunda*
Tree Pie, Southern	*Dendrocitta leucogastra*
Trogon, Malabar	*Harpactes fasciatus*
Vulture, Black	*Aegypius monachus*
Vulture, Egyptian	*Neophron percnopterus*
Vulture, Indian Black	*Sarcogyps calvus*
Vulture, Indian Longbilled	*Gyps indicus*
Vulture, Indian Whitebacked	*Gyps bengalensis*
Wagtail, Forest	*Motacilla indica*
Wagtail, Grey	*Motacilla cinerea*
Wagtail, Large Pied	*Motacilla maderaspatensis*
Wagtail, White	*Motacilla alba*
Wagtail, Yellow	*Motacilla flava*
Wagtail, Yellowheaded	*Motacilla citreola*
Warbler, Broadtailed Grass	*Schoenicola platyura*
Warbler, Fantail	*Cisticola exilis*
Warbler, Greenish Leaf	*Phylloscopus trochiloides*
Warbler, Indian Great Reed	*Acrocephalus stentoreus*
Warbler, Large Crowned Leaf	*Phylloscopus occipitalis*

Warbler, Paddyfield	*Acrocephalus agricola*
Warbler, Blyth's Reed	*Acrocephalus dumetorum*
Warbler, Streaked Fantail	*Cisticola juncidis*
Warbler, Tickell's	*Phylloscopus affinis*
Warbler, Tytler's Leaf	*Phylloscopus tytleri*
Waterhen, Whitebreasted	*Amaurornis phoenicurus*
Weaver Bird, Blackthroated	*Ploceus benghalensis*
Weaver Bird, Streaked	*Ploceus manyar*
White-eye	*Zosterops palpebrosa*
Woodpecker, Blackbacked	*Chrysocolaptes festivus*
Woodpecker, Heartspotted	*Hemicircus canente*
Woodpecker, Indian Goldenbacked Threetoed	*Dinopium javanense*
Woodpecker, Indian Great Black	*Dryocopus javensis*
Woodpecker, Lesser Goldenbacked	*Dinopium benghalense*
Woodpecker, Little Scalybellied Green	*Picus myrmecophoneus*
Woodpecker, Pigmy	*Picoides nanus*
Woodpecker, Rufous	*Micropternus brachyurus*
Woodpecker, Small Yellownaped	*Picus chlorolophus*
Woodpecker, Yellowfronted Pied	*Picoides maharattensis*
Wren-warbler, Ashy	*Prinia socialis*
Wren-warbler, Franklin's	*Prinia hodgsonii*
Wren-warbler, Plain	*Prinia subflava*

REPTILES[3]

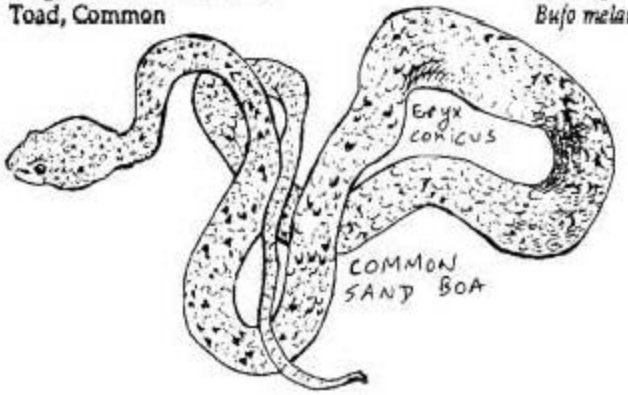
Boa, Common Sand	*Eryx conicus*
Chameleon, Indian	*Chamaeleon zeylanicus*
Cobra, Common	*Naja naja*
Cobra, King	*Ophiophagus hannah*
Crocodile, Long-snouted or Gharial	*Gavialis gangeticus*
Crocodile, Marsh or Mugger	*Crocodylus palustris*
Gecko, Brook's	*Hemidactylus brooki*
Gecko,Southern House	*Hemidactylus frenatus*
Keelback, Green	*Macropisthodon plumbicolor*
Krait, Banded	*Bungarus fasciatus*
Krait, Common	*Bungarus caeruleus*
Lizard, Common Garden or Bloodsucker	*Calotes versicolor*
Lizard, Fan-throated	*Sitana ponticeriana*
Lizard, Flying or Draco	*Draco dussumieri*
Monitor, Common Indian	*Varanus bangalensis*
Python, Indian	*Python molurus*
Racer, Banded	*Argyrogena fasciolatus*
Skink, Snake	*Riopa punctata*
Snake, Common Bronzeback Tree	*Dendrelaphis tristis*
Snake, Common Cat	*Boiga trigonata*
Snake, Common Vine	*Ahaetulla nasutus*
Snake, Common Wolf	*Lycodon aulicus*
Snake, Green	*Opheodrys doriae*
Snake, Olive Keelback	*Atretium schistosum*

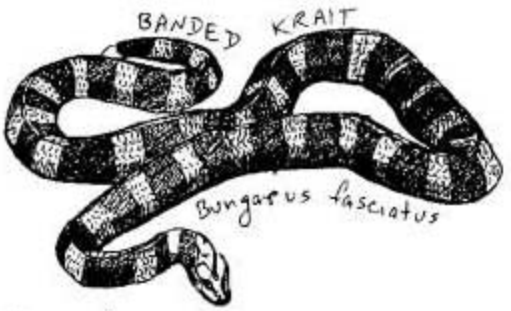


Snake, Rat or Dhaman	*Ptyas mucosus*
Snake, Russells Kukri	*Oligodon taeniolatus*
Snake, Travancore Wolf	*Lycodon travancoricus*
Tortoise, Starred	*Geochelone elegans*
Viper, Bamboo Pit	*Trimeresurus gramineus*
Viper, Russell's	*Vipera russellii*
Viper, Saw-scaled	*Echis carinatus*

AMPHIBIANS[4]

Frog, (no common name available)	*Micrixalus spp.*
Frog, Green	*Rana hexadactyla*
Frog, Bull	*Rana tigerina*
Frog, Bicoloured	*Rana curtipes*
Frog, Common Tree	*Rhacophorus maculatus*
Frog, Cricket	*Rana limnocharis*
Frog, Indian Water Skipper	*Rana cyanophylyctis*
Frog (no common name available)	*Rana malabarica*
Frog (no common name available)	*Rana verricosa*
Frog, Malay Bull, or Painted	*Kaloula pulchra*
Frog, Ornate Narrowmouthed	*Microhyla ornata*
Frog, Red Narrowmouthed	*Microhyla rubra*
Toad, Common	*Bufo melanostictus*





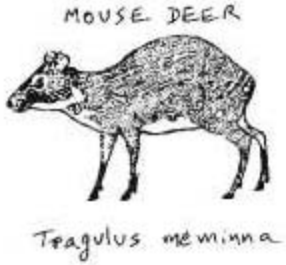
1 Common names have been standardised from Prater (1980).
2 Common names have been standardised from Ripley (1982).
3 Common names for snakes have been standardised from Whitaker (1978), and for other reptiles, from Daniel (1983).
4 Common names have been standardised from Hawkins (1986) and ZSI (1992)

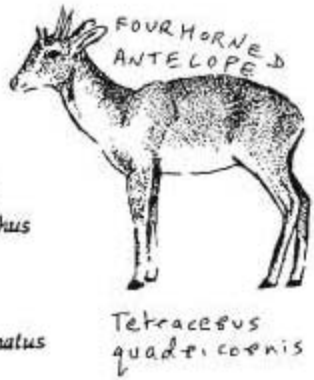
APPENDIX 5

THREATENED[1] ANIMALS REPORTED FROM NATIONAL PARKS AND SANCTUARIES IN KARNATAKA

[Note: This lists only mammals, birds, and reptiles, as relevant details about other fauna are not available. In addition, complete state lists of fauna are not available, hence only threatened animals reported from national parks and sanctuaries are listed here. This will undoubtedly have left out other threatened species found in the state.]

Common Name	*Scientific Name*
MAMMALS[2]	
Antelope, Indian or Blackbuck	*Antilope cervicapra*
Antelope, Fourhorned or Chowsingha	*Tetracerus quadricornis*
Bear, Sloth	*Melursus ursinus*
Cat, Rustyspotted	*Felis rubiginosa*
Deer, Mouse	*Tragulus meminna*
Elephant, Indian	*Elephas maximus*
Langur, Nilgiri	*Presbytis johni*
Leopard, or Panther	*Panthera pardus*
Leopard-cat	*Felis bengalensis*
Loris, Slender	*Loris tardigradus*
Macaque, Liontailed	*Macaca silenus*
Pangolin, Indian	*Manis crassicaudata*
Squirrel, Common Giant Flying	*Petaurista petaurista*
Squirrel, Grizzled Giant	*Ratufa macroura*
Tiger	*Panthera tigris*
Wolf	*Canis lupus*
BIRDS[3]	
Adjutant	*Leptoptilos dubius*
Bustard, Great Indian	*Choriotis nigriceps*
Eagle, Pallas's Fishing	*Haliaeetus leucoryphus*
Falcon, Lanner/Lagger	*Falco biarmicus*
Falcon, Peregrine	*Falco peregrinus*
Hornbill, Great	*Buceros bicornis*
Hornbill, Malabar Pied	*Anthracoceros coronatus*
Osprey	*Pandion haliaetus*
Owl, Great Horned or Eagle-owl	*Bubo bubo*
Peafowl, Common[4]	*Pavo cristatus*
Spoonbill	*Platalea leucorodia*
Teal, Large Whistling	*Dendrocygna bicolor*
Vulture, Black	*Aegypius monachus*

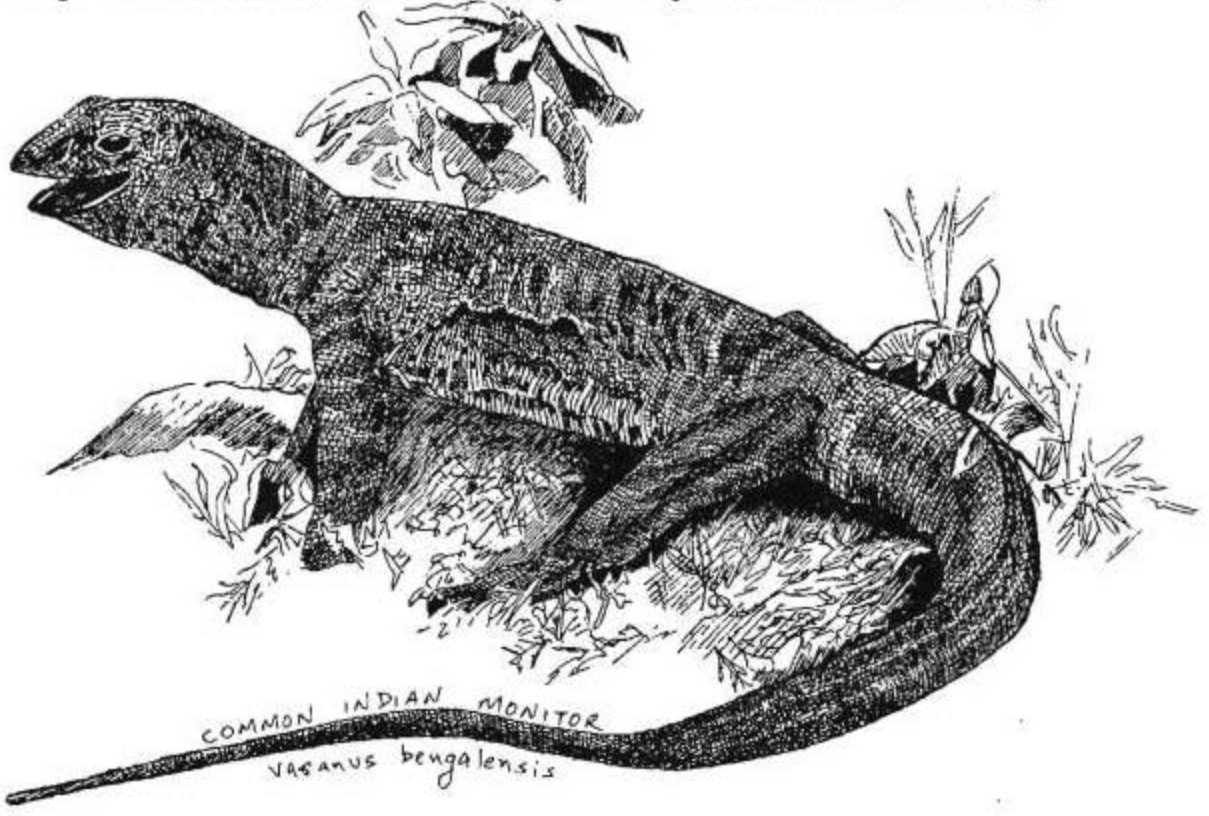




REPTILES[5]

Cobra, King[6]	*Ophiophagus hannah*
Crocodile, Long-snouted or Gharial	*Gavialis gangeticus*
Crocodile, Marsh or Mugger	*Crocodylus palustris*
Monitor, Common Indian	*Varanus bengalensis*
Python, Indian	*Python molurus*

1. The term 'threatened' has been used here in accordance with the internationally accepted usage coined by the World Conservation Union (formerly the International Union for Conservation of Nature and Natural Resources). This term is used for species which fall into one of the following categories [Jain and Sastry 1980]:
Endangered: Species/taxa in danger of extinction and whose survival is unlikely if factors threatening them continue to operate.
Vulnerable: Species/taxa likely to move into the endangereed category in the near future if threatering factors continue to operate.
Rare: Species/taxa with small world populations that are not at present endangered or vulnerable, but are at risk of becoming so.
2. Listed in Schedule 1 of the Wild Life (Protection) Act of 1972 (as amended upto 1980), and presumed threatened in India as a whole.
3. Listed in Schedule 1 of the Wild Life (Protection) Act of 1972 (as amended upto 1980), the IUCN Red Data Book (as modified in the International Council of Bird Preservation's *Birds to Watch*, 1988), and B.K. Tikader's *Threatened Animals of India*, Zoological Survey of India, 1983.
4. Appears on Schedule 1 of the Wild Life (Protection) Act more in its capacity as India's national bird than because it is considered threatened.
5. Listed in Schedule 1 of the Wild Life (Protection) Act of 1972 (as amended upto 1980).
6. Though not listed in Schedule 1, considered threatened by wildlife experts (see, for instance, Whitaker 1978).



APPENDIX 6

THE NILGIRI BIOSPHERE RESERVE

In 1986 the Government of India declared the country's first Biosphere Reserve in the Nilgiri tract of southern India. This followed the setting up of a national biosphere programme in 1978, on the lines of the Man and Biosphere Programme of UNESCO, aimed at reconciling genetic diversity conservation with human interests in areas of exceptional biological value.

Straddling the three states of Karnataka, Kerala, and Tamil Nadu, the Nilgiri Biosphere Reserve (NBR) is spread over an area of 5,52,000 ha. (5520 sq.km.). At the time of declaration, a considerable portion of the area was already given legal protection under various national parks, sanctuaries, and reserve forests. The management and conservation of these and other areas is now under active consideration by an inter- state committee (see below for details), though the issues of tackling various kinds of human pressures (especially commercial ones like plantations), and affording some level of legal protection to areas not already covered by the protected area network, remain knotty and unresolved.

The Karnataka portion of the NBR covers an area of 1,52,740 ha. (1527.40 sq.km.), which includes the Bandipur and Rajiv Gandhi National Parks. Major features of the NBR as a whole, and of the Karnataka portion specifically, are given below.

Editorial note: The two extracts given below have been faithfully reproduced from their original sources. Our editorial comments are given in footnotes. Apart from these sources, readers may also refer to the Indian National Man and Biosphere Committee's Project Document I: *The Nilgiri Biosphere Reserve* [MAB 1980], for further details.

NILGIRI BIOSPHERE RESERVE: FACTS AT A GLANCE [Government of India 1989]

1. **Date of setting up:** 1.9.86
2. **Order No.:** J.22010/6/86-CSC
3. **Project document prepared by:** Dr. Madhav Gadgil, IISc, Bangalore
4. **Realm:** Indo-Malayan realm
5. **Biome:** Tropical dry or deciduous forests[1]
6. **Biogeographic province:** Malabar rain forest[2]
7. **Location:** Located in the states of Tamil Nadu, Karnataka and Kerala. The NBR embraces the sanctuary[3] complex of Wynad, Nagarahole, Bandipur and Mudumalai; the entire forested hill slopes of Nilambur and Nilgiri; the upper Nilgiri plateau, the Silent Valley and Siruvani hills.
   Latitude: 76° to 76°45' E
   Longitude: 11°15' to 12°15' N
8. **Total area:** 5520 sq. km. (5,52,000 ha.)
9. **Core area:** 1240 sq. km (1,24,000 ha.)
10. **Buffer area:** 4280 sq.km. (4,28,000 ha.)
11. **Whether it includes a National Park/Wild life Sanctuary/Tiger Reserve:** It includes the Bandipur Tiger Reserve and the sanctuaries of Wynad, Nagarahole and Mudumalai[4].
12. **Climate:** Average annual rainfall ranges from 500mm—7000 mm. Temperature also shows a wide range of variation. It is 40°C or more in summer in rainshadow zone, while there is regular frost in winters in higher grassy meadows.
13. **Major physiographic features:** Mountains: Nilgiris, Nilambur, Siruvani hills. Rivers: All major rivers of south India—Krishna, Godavari, Kaveri and their tributaries like Bhima, Tungabhadra, Kabini, Bhavani—originate in Western Ghats. Elevation: Ranges from 300 m.-2700 m above mean sea level.

Vegetation: Ranges from thorn scrub through dry and most deciduous wet evergreen, montane (sholas) to grassy downs and swamps.

14. **Flora:** The tract is very rich in plant diversity and harbours a number of species of flowering plants restricted to this area alone, e.g. *Adenoon, Frerea, Baeolepis, Calacanthus, Jerdonia, Octotropis, Poeciloneuron* and *Wagatea.*
15. **Fauna:** More than 100 spp. of mammals, 550 of birds, 30 of reptiles and amphibians have been reported. The region includes the largest known Indian populations of two endangered species, the Nilgiri tahr, and the Liontailed macaque, and probably the largest south Indian populations of Elephant, Tiger, Gaur, Sambar and Chital. Freshwater fishes of genera *Horabagrus, Bhavania* and *Travancoria* are restricted to Western Ghats, as are also 4 genera of primitive amphibians, a family Uropeltidae of snakes, Schoenicola amongst birds and Platycanthomys amongst mammals.
16. **Cultivation:** The entire diversity of cultivated plants covering from the millets of very dry spectrum to paddy and plantation crops of very humid tracts are grown here. Also: arecanut, ginger, turmeric, cardamom, pepper, mango, jack fruit, plantain, paddy, ragi, and *Calophyllum*—its timber is valued for ship masts.
17. **Tribals:** It is the habitat of several fascinating tribal groups including the only surviving hunter-gatherers of Indian subcontinent—the Cholanaikas in the new Amarambalam of Nilgiris. Also the Toda—a well-known pastoral group, and a large variety of other tribals in Attapady valley such as Pariyans, Kurichiyans, Mullukur-beans, Adiyans, Kurumba, Irula, Alars, Paniyans, etc.
18. **Organisational set up**
    - 18.1 Nodal/Contact Officer and Deptt.: 1. Chief Conservator of Forests, Govt. of Karnataka. 2. Chief Conservator of Forests (Wildlife), Govt. of Kerala. 3. Principal Chief Conservator of Forests, Govt. of Tamil Nadu.
    - 18.2 Co-ordination Committee Directors, NBR, from states on rotation basis: 1. Shri V.R. Chitrapu, CF, Uthagamandalam, Tamil Nadu. 2. Shri B. Natarajan, Field Director, Project Tiger, Mysore. 3. Shri Kharbanda, IFS, Kerala.
    - 18.3 Co-ordination Committee: Dr. Madhav Gadgil, Indian Institute of Science, Bangalore.
    - 18.4 Chairman, Management Council: Designation not indicated. A representative of the Ministry of Environment and Forests.
19. **Research Projects**
    - 19.1 Studies on human ecology and eco-restoration of Attapady Valley: Director, KFRI, Peechi
    - 19.2 Ecological studies and long term monitoring of biological processes in Silent Valley National Park: Director, KFRI, Peechi
    - 19.3 Studies on hydrological process and their impact on NBR using remote sensing techniques: Dr. E.J. James, CWRDM, Calicut
    - 19.4 Bio-ecological studies on the aquatic insects of Nilgiri Biosphere: Dr. M. Salvanayagam, Loyola College, Madras.
    - 19.5 Interaction of atmospheric chemistry with the Nilgiri Biosphere Reserve: Dr. D.R. Sikka, Indian Institute of Tropical Meteorology, Pune
20. **Financial Sanction:** Amounts released so far (Rupees in Lakhs)

Year	Kerala	Karnataka	Tamil Nadu	Total
1986–87	6.00	3.50	6.50	16.00
1987–88	17.00	20.60	19.00	56.60
1988–89	11.00	7.50	25.00	43.50
1990–91[5]	37.50	34.00	0.00	71.50
1991–92	24.00	18.00	13.55	55.55
1992–93	26.34	23.27	15.70	65.31

ACTION PLAN FOR NILGIRI BIOSPHERE RESERVE (KARNATAKA PORTION) [Wesley 1987]

The Man and the Biosphere (MAB) programme launched in 1971, is a programme of international scientific co-operation dealing with people- environment interaction in the whole range of bioclimatic and geographic situations of the biosphere. The International Co-ordinating Council of UNESCO, which supervises the MAB programme, has as one of its themes "conservation of natural areas and the genetic material they contain'. Under this theme was introduced, the concept of the biosphere reserve, which was intended to be a series of protected areas, linked through a co-ordinated international network, which would demonstrate the value of conservation and its relationship with development.

The first biosphere reserve was designated in 1976 and subsequently the network has grown steadily, and it now contains a total of 243 in 65 countries.

In India, the biosphere reserve programme constitutes the newest component in our country's effort to conserve its heritage of biological diversity. The Government of India established a Core Advisory Group on biosphere reserves in 1978 and this group identified thirteen potential biosphere reserves in India of which the Nilgiri Biosphere Reserve is one.

Documentation work on the Nilgiri Biosphere Reserve has been in progress since 1980 by a team from the Indian Institute of Science in consultation with various Government departments. This document gives a broad picture of the various areas, their classification into zones and recommendations on management. Based on the limited information thus documented, additional information is now collected for purposes of the 'Action Plan' and the Management Plan.

TRACT DEALT WITH

Location: The Karnataka component of the Nilgiri Biosphere Reserve is located in Mysore and Coorg Revenue districts.The Forest Divisions over which the area is spread out are Mysore, Chamarajanagar and Hunsur Divisions. The total area of the Karnataka portion of the Nilgiri Biosphere Reserve is 1527.4 sq. km. The entire area is located between 11°36' to 12°15'N, and 76° to 77°15'E. The status of the land is Reserved Forest in which certain rights and privileges are granted to the local people.

Climate: Three seasons can be recognized—the dry, wet and the cold. The cold season starts in November and lasts up to mid-February; later the hot season starts and lasts up to middle of June. The coolest months are December and January and the hottest months are March and April. The wet season (south-west monsoon) starts in early June, though heavy pre-monsoon showers occur in April and May. The wet season lasts up to September. There is generally a break in the rains in September and thereafter during October and up to middle of November. The Southern portions of the Nilgiri Biosphere Reserve gets some showers from the north-east monsoon.

The bulk of the rainfall is got from south-west monsoons between June and August. Rainfall varies considerably even within the area included in the Nilgiri Biosphere Reserve. The Southern parts adjoining Moyar River get less rainfall. Rainfall gradually improves as we proceed north-west into Coorg district. The average rainfall in Bandipur is 900 mm, and at Nagarahole it is 1778 mm.

Meteorological stations, where climate data is recorded are at Nagarahole and Bandipur in Karnataka State. The temperature varies from 30°C to 18°C in the Bandipur and from 32°C to 12°C in the Nagarahole National Park[6].

Topography: The area included in the biosphere reserve extends from east of Brahmagiri hill range in the north and across the River Kabini to include the Bandipur Tiger Reserve. The terrain can be divided into three zones, i.e. Coorg, Mysore North, and Mysore South. The Coorg area consists of Nalikeri, Arkeri and Hathghat Reserve forests. A characteristic of this area is the presence of swamps locally known as nadlus. South of this, right up to the River Kabini is the North Mysore plateau. The forest areas included are Kakankote R.F., Metikuppe R.F., Veeranhosalli R.F. and Kachuyananhalli R.F. Blocks I To III. The areas north of Moyar Gorge up to southern bank of the Kabini River is the Mysore South plateau, where the areas included are Moyar S.F., Bandipur S.F., Katwal

S.F., Alaganchi S.F., Naganapura S.F., Beerambadi S.F., Ainur Marigudi S.F., Begur S.F., and Beerambadi S.F. North and East extensions.

The terrain over the major portion of the area is gently undulating interspersed with hill ranges in some places. The main hill ranges are Gopalswamy betta, Karadi betta and Markandeya betta. The average elevation is round about 800 m. The altitude of some of the mountain peaks are as under:

Gopalaswamy Betta	1538 m.
Karadi Betta	1261 m.
Kalkere Betta	1144 m.

Kabini, Nugu and Moyar are the river systems in the region.

Land use: Two main systems of land use are forestry and agriculture. Agriculture is mainly confined to a few small pockets of tribal settlements.

Forest types: The forest types included in the Nilgiri Biosphere Reserve are varied according to rainfall. In South-east portion lies the scrub forests of Moyar. Proceeding towards north-west the vegetation gradually changes to dry deciduous and in the extreme north-west to moist deciduous. General information regarding their structure, physiography and species composition are available.

Population density: Within the Nilgiri Biosphere Reserve, there are a few settlements of tribals. The details of population are being compiled. But the population of tribal settlements is very sparse and the agricultural practices of these people are of a very primitive nature. The tribal population found in the Nilgiri Biosphere Reserve represents what is left of the original human population of these forest areas. They depend upon natural resources and form an important part of the ecosystem. The tribal population is divided into two groups called Yeravas and Kurubas. Among these area again sub-divisions like Kadu Kurubas and Jenu Kurubas, etc.

Their agricultural practices are most primitive. They depend mainly on employment in the Forest Department for earning their livelihood. They have intimate and detailed knowledge of the forest areas where they live and are experts in tracking animals by spoors and sounds. Their services can be used to great advantage in managing the biosphere reserve.

Land management: The entire 1527.4 sq.km. of area included in the Nilgiri Biosphere Reserve is under regular forest management according to sanctioned working plans. All working was stopped in the forest areas included in Bandipur Tiger Reserve from the year 1973.

The major objectives of forest management have been:-

- Timber and fuel production
- Protection of the environment
- Protection of wildlife.

MANAGEMENT PRACTICES

The management practices vary according to emphasis placed on any one of the above objectives.

Management for Wood Production: Wood production, both timber and fuel, is achieved by the practice of selection fellings, clear felling and plantings and by adopting coppice or coppice with standards systems. There was also a system of licensing people to bring dead and fallen wood for firewood purposes by issue of prepaid licenses. This system is now stopped. In the area included in the Bandipur Tiger Reserve, as already mentioned, all fellings were stopped since the year 1973. In the areas included in the Mysore North and Coorg region, the forests are worked under a modified selection system which restricts the fellings to dead and dying trees only. Clear felling for raising plantations of pure teak or Eucalyptus or of any other species has been totally suspended over the entire area—in Begur S.F., Kakankote S.F. and in the forests occurring in Coorg district. Extensive plantations of pure Teak occur throughout. These are among the finest teak plantations in the south and need

to be managed scientifically to derive the maximum advantage. The extent of Eucalyptus plantations is very limited. The total area under Teak plantations is considerable.

Protection of the environment: No conscious efforts have been made to achieve the objective of conservation of genetic forestry (sic), protection of soil, regulation of hydrology, etc. Working Plans generally identify a Protection Working Circle. But these were mostly inaccessible areas as on the dates the Working Plans were prepared. In the recent years, with the introduction of improved extraction methods, most of these areas have become accessible and hence brought under working. Thus the extent of protection areas has dwindled depending upon accessibility of commercially important species. There are hardly any inaccessible areas in the Karnataka part of the Nilgiri Biosphere Reserve.

Wildlife Management: The proposed Nilgiri Biosphere Reserve includes two well known National Parks, namely; (1) Bandipur National Park, and (2) Nagarahole National Park. Bandipur National Park was initially constituted in the year 1931 and subsequently the area was enlarged and brought under the Venugopal Wildlife Park in the year 1941. This Wildlife Park forms a major portion of the present Bandipur National Park. It stretches right from the Moyar river in the South to Gopalaswamy hills in the North which is part of Beerambadi S.F. The Bandipur National Park was constituted in the year 1973 and extends over 689.52 sq. km[7]. Since the start of the Tiger project all forest working in the area has been stopped. Grazing in the core area has been prohibited and increased protection to both animals and plants have been given. Simultaneously, efforts have been made to repair and rehabilitate areas which have been destroyed by man's over-use or abuse of the resources. The method employed for repair to destruction has been mostly in the nature of giving total protection from use by man. The area abounds in wildlife, the most spectacular of these being elephant, gaur, sambar, cheetal, tiger and panther. During recent years, due to high prices obtained for ivory, the killing of male elephants has been on the increase. Hence, protection measures have been increased and the staff have been provided with firearms, wireless communication network and vehicles for transport. Poaching still remains a major problem. Attempts have been made to provide total fire protection by employing protection and detection methods. In spite of these efforts fire protection is still a problem that sometimes becomes uncontrollable. More effective methods will have to be devised.

The Nagarahole Wildlife Sanctuary was established in the year 1955. The sanctuary included parts of Arkeri, Hathaghat and Nalkeri Reserve Forests and extended over an area of 284.2 sq. km. The sanctuary was extended in the year 1975 and now covers an area of 571.55 sq.km[8]. These forests have been worked until recently on selection and clearfelling systems. The forests are very rich and are among some of finest timber forests in the State. The area is also rich in fauna which bears similarities with the fauna found in the Bandipur Tiger Reserve.

The forests on either side of the Kabini River, which are now parts of the Bandipur National Park and Nagarahole National Park, were the scene of many famous khedda operations for capturing wild elephants since the year 1890. The last khedda was in the year 1971.

Though as indicated above, efforts have been made to protect and rehabilitate forests and wildlife, much remains to be done. Habitat management techniques to manipulate the population levels of important species are yet to be adopted in a systematic manner.

Critical analysis: Forest management in the past has not generally taken into consideration the welfare and preservation of the ecosystem. Attempts have been made to create facilities for wild animals especially vertebrates in selected areas. Many of these were half-hearted because the needs of the people and considerations of revenue earning had priority. Ecosystems have been destroyed in the zeal to convert mixed forests into pure plantations. Teak to a large extent, and Eucalyptus to a lesser extent, occupy areas originally covered with mixed forest growth. This, in turn, has brought in exotic weeds like Lantana and Eupatorium[9] which have taken a stronghold of many areas.

The rising population and increased demand for fuel and timber has resulted in indiscriminate hacking of forest growth. The incidence of cattle grazing in the forest is so high that in many areas the forests have become degraded in quality. This is mainly due to destruction of regeneration and recurring fires. Fire protection has, in spite of earnest efforts, been unsatisfactory. Fires are mostly man-made.

The management practices in the past have neither been able to preserve the natural ecosystem nor has it been possible to meet the demands of the people. It is now clear that the ever increasing needs of the people for firewood cannot be met from the forests. Thus it is necessary to evolve a system of management which aims at :-

1. Creation of a biosphere reserve to preserve undisturbed ecosystem.
2. To restore the degraded forest areas and to bring them to maximum production under scientific management so that it remains complementary and compatible to biosphere reserve.
3. To meet the requirements of local people for fuel and timber to the extent possible.

Agriculture: Within the area included in the Nilgiri Biosphere Reserve, there is no settled cultivation. But the surrounding area is thickly populated and cultivation is both intensive and extensive. Paddy, ragi, cardamom, pepper, orange and coffee are the principal agricultural and plantation crops. Paddy is grown both under rainfed and irrigated conditions. Ragi and jowar are grown in drier parts where rainfall is scanty. In the Coorg area coffee is an important plantation crop. It is grown both as a pure crop and in combination with orange.

Settled cultivation is seen both in wet and dry tracts. The main problems facing agriculture are:

- Soil erosion from unscientific agricultural practices and consequent soil degradation.
- Existence of severe drought conditions during summer months largely stemming from disrupted hydrological cycle.
- Gradual depletion and degradation of the forests due to unsystematic exploitation to meet the ever increasing needs of the people for fuel, grazing and timber.

Thus it is evident that forests and agriculture have evolved as mutually incompatible alternatives and their complimentary role is ignored. This is largely the outcome of sector oriented approach in which each department competes with the other to get a larger chunk of resources. If biosphere reserve management has to fulfill its objectives, a more integrated approach has to be adopted.

The regulation of agricultural methods to conserve soil and moisture is all the more important in this area because a large part of these agricultural lands adjoining the biosphere reserve form part of the catchment area of the Kabini River, across which a large multipurpose dam has been constructed and unless soil erosion is checked effectively the lake will soon get silted up.

BIOSPHERE RESERVE : AN OVERVIEW

General objectives: Biosphere reserves aim to conserve large units of landscape containing both natural and man-made ecosystems. They form laboratories for evolving an alternative model of development in which resources are used sustainably, and irrevocable changes like depletion of genetic resources and soil degradation are not brought about. Biosphere reserves permit long term studies in natural ecosystems and to monitor the effects of human activities. The preservation of genetic diversity is both a matter of insurance and investment necessary to sustain and improve agricultural and forest production, and to keep open our future options as a buffer against harmful environmental changes and as raw material for scientific and industrial innovation.

Objectives of management of Nilgiri Biosphere Reserve:

- To protect the undisturbed forest ecosystem and to conserve the floral and faunal diversity.
- To provide benchmark data on natural ecosystem.
- To monitor the functional changes effected in man-modified ecosystems in order to compare it with the functioning of natural ecosystem.
- To implement sustainable practices of forestry in the areas designated as manipulation zone (forestry) so that it remains compatible and complementary to the larger objectives of biosphere reserve.
- To restore the degraded ecosystem in the restoration zone by adopting suitable soil and water conservation methods and to regenerate such areas with appropriate vegetative cover by developing technology for ecosystem restoration and maintenance of biological diversity.

- To involve the local people in the implementation of conservation and development programmes so that a balanced relationship is developed between Man and Nature.
- To meet the needs of local people in their requirement of fuel and fodder to the extent possible, without sacrificing the main objectives of biosphere reserve.
- To maintain and develop, to the extent necessary, the tourism zones for the enjoyment and education of the public to whom these will serve as show windows of what is being done.

To achieve the above objectives, the Nilgiri Biosphere Reserve area of Karnataka has been divided into 4 zones.

i)	Core zone	701.8 sq.km.
ii)	Forestry (Manipulation)	212.2 sq.km.
iii)	Restoration zone	344.2 sq.km.
iv)	Tourism zone	269.2 sq.km
	Total	1527.4 sq.km.

MANAGEMENT OF CORE ZONE

Area proposed for inclusion: The total area included in core zone is 701.8 sq.km. This area is distributed over the forest areas of the Mysore and Hunsur divisions. The core zone occurs in 2 blocks situated on either side of the Kabini river. The Reserve Forest-wise details of core area are as follows:-

Mysore Division	1. Beerambadi R.F.
	2. Aniur Marigudi R.F
	3. Begur R.F.
	4. Kakankote R.F.
	5. Metikuppe R.F.
Hunsur Division:	1. Hathghat R.F.
	2. Arkeri R.F.

Though the core area occurs in two separate blocks, forestwise it is a continuous area. That bit of forest, which is not included in the core zone lies on either side of the Kabini River and is already developed as a tourism zone. Thus, though the core area is found in two separate blocks, they are in fact inter-connected by good forest growth.

Objectives of Management:

1. Conservation of natural ecosystems.
2. Base line ecological monitoring.

Proposals:

- Strengthening of the protection measures to prevent poaching and collection of forest produce from the area.
- Augmenting the fire protection measures to prevent the out break of fire and consequent retrogression.
- Establishing a network of monitoring stations to find out long term changes. This will involve continuous monitoring of climatic parameters like temperature, rainfall, humidity, etc. In addition, a series of sample plots will be established to study the growth and development of forests.
- Preparing a detailed inventory of flora and fauna in representative areas to identify endemic species and to list out the rare, threatened and endangered species.
- Educating the people residing in the surrounding villages regarding the need to leave this area (core) in the near pristine conditions.

MANAGEMENT OF MANIPULATION (FORESTRY) ZONE

The total area included is 212.2 sq.km. This area is again distributed over the Mysore and Hunsur divisions. The entire area is located to the left side of the River Kabini.

Objectives:

- To manage these forest areas on a sustained yield basis giving high priority to meet the needs of local people.
- Maintenance of essential ecological processes and life support systems by rational planning and allocation of uses.
- Utilization of ecosystems and species under scientific management so that the productive capacities of these resources are not utilized beyond their capacities.
- Monitoring the effects of various management practices to obtain reliable data on production of timber and other forest produce.
- Involving the local people in the management so that they play an active and intelligent role in the formulation and implementation of management plans.

Proposals

- Estimating the local demand for forest products especially fuel, small timber, fodder, green manure, etc.
- Critical evaluation of existing management practices (systems), particularly selection fellings and clear felling and incorporating necessary changes to ensure their sustainability in the long run.
- Intensive regeneration of felled areas and regulation of tending and thinning to ensure the survival and growth of desired species.
- Adoption of suitably long felling cycles in selection felling areas.
- Adoption of suitable thinning regimes in Teak plantations so as to cause minimum disturbance to the environment. Regulating thinning to promote naturally occurring non-Teak species so that eventually the mixed nature of the vegetation is partly established.
- Augmenting the production of bamboos with the specific objective of enhancing supply to local people.
- Establishment of monitoring station to evaluate long term changes occurring as a result of changes in management practices.

MANAGEMENT OF MANIPULATION (AGRICULTURE) ZONE

Area proposed for inclusion: No specific areas are included in this zone. But there are extensive stretches of agricultural land on the banks of River Kabini, across which a dam has been constructed resulting in a very large reservoir. It is essential that the agricultural lands in the catchment areas of this reservoir are managed under strict soil and water conservation methods.

If soil and vegetation are to be restored they must given respite from intensive use. In dry land areas, these must include reduction of livestock number (if necessary through price supports), increasing the efficiency of food production and provision of alternate sources of fuel. It is also essential to protect a large number of relatively small areas of dry lands to reveal what species are present to provide seeds production and to demonstrate ecological recovery. Restrictions imposed on grazing and fuel collection may make it necessary to take up compensatory measures for improving pasture development and establishment of fuel plantations.

Rural communities have often profound detailed knowledge of ecosystems and species with which they are familiar, and effective ways of ensuring that they are used sustainably. Many age old methods of living resource management are worth retaining or reviving, either in their original form or modified forms.

Field experiments with traditional cropping systems have demonstrated that many of these systems bring high yields, conserve nutrients and moisture and suppress pests. The efficiency of traditional cropping systems can often be increased not by introducing completely different ones but by identifying those elements which could be improved.

Objectives of management:

- To manage agricultural land in a sustainable manner by adopting suitable effective soil and water conservation methods.
- To reorient agriculture to attain maximum possible benefit without exhausting the soil and water resources. To reduce soil erosion to the barest minimum possible by adoption of suitable soil conservation methods like contour bunding, gully plugging, terracing, etc.

Proposals:

- A detailed survey of these agricultural lands to be included in this zone.
- A detailed land capacity classification and land use plan to be developed.
- People's committees to be established in various settlements and villages to ensure adoption and implementation of land use plan.
- Incentives to be provided to adhere to the land use plan and to adopt crops and agricultural practices which are conducive for soil and water conservation.
- People to be encouraged to adopt traditional methods of living resource management in original or modified forms.
- Publicity measures to be strengthened to educate the people on the need for adopting sustainable agricultural practices.
- Monitoring stations are to be established to evaluate the effectiveness of the measures adopted and to modify, if found necessary.

Since management of agricultural land is entirely in the private sector a clear understanding of social, economic and cultural factors is necessary to develop acceptable agrarian practices.

MANAGEMENT OF MANIPULATION (TOURISM) ZONE

Three well established and popular Tourism zones exist in the area. The Divison-wise areas included are :-

1.	Hunsur Division	46.4 sq.km.
2.	Mysore Division	67.1 sq.km.
3.	Project Tiger area	155.7 sq.km.
	Total	269.2 sq.km.

The tourism zone of the Bandipur National Park is located on the main highway between Mysore and Ooty about 80 kms from Mysore. It is well organized, not only to provide board and lodge to visitor, but also to enable them to view wildlife in the area by all possible means. Over the years, a regular network of motorable roads have been laid carefully. They pass close to a number of pools to which elephants and other animals come. Riding elephants are also available. The forest is of the open deciduous type with treeless areas here and there. The elevation is 995 m. The animals met with are elephants, gaur, sambar, chital, wild boar, sloth bear, panther and tiger. The area is also rich in bird life.

The existing facilities are considered sufficient to meet the requirements of visitors. The water holes which are the main source of water to animals are all small and shallow and many of them dry up during summer. It is necessary to improve the water facilities to attract the animals in the area.

The second tourism zone is located in the Nagarahole National park. The forests here are of the moist deciduous type containing some of the finest teak, rosewood and other timber species. Elephant, gaur, chital, sambar, wild boar, panther and tiger are the main wild animals seen. In this area a fairly large extent of original forest has been converted into pure teak plantations.

The third area is located on either banks of the River Kabini and extends along the eastern boundary of the core area of Mysore and Hunsur divisions. The fauna met with are the same as in the other areas. But here, because of the reservoir formed on the Kabini River it is possible to go in boats and view wildlife. The main location for lodging and boarding for visitors is at Kharapur.

Objectives

- The main objective of maintaining and developing these tourism zones is to spread the message regarding the necessity to preserve all forms of wildlife.
- To educate the public, especially the people living in the villages surrounding the Nilgiri Biosphere Reserve, of the need to maintain such biosphere reserves.
- To inculcate in the minds of school going children love for all forms of wildlife and to impress on their minds the need for conservation of natural resources.
- To provide recreation to the visitors and public.

ORGANIZATION

The management of the Nilgiri Biosphere Reserve will be under the total control of the Central Government. As decided at the meeting on Biosphere Reserves on 10th July, 1986, at Delhi, the structure of management of biosphere reserves at the Central level and at State level will be as under ;

National level:

1.	Secretary, Ministry of Environment and Forests, Government of India	Chairman
2.	Joint Secretary/Director, Wildlife, Government of India.	Member
3.	Officer designated locally for the programme in the Ministry.	Member
4.	Joint Secretary / F.A.	Member
5.	One representiative from each of the State Governments concerned.	Member
6.	Prof. Madhav Gadgil, Indian Institute of Science, Bangalore.	Member

State level:

1. Chief Wildlife Warden
2. Regional Director, Nilgiri Biosphere Reserve
3. Deputy Director, Bandipur
4. Deputy Director, Nagarhole

With necessary complements of staff consisting of Asst. Conservator of Forests, Range Forest Officers, etc.

NOTES

1. This appears to be a mistake; the biomes covered, as per the classification of Rodgers and Panwar (1988), include Evergreen Forests, Moist Deciduous Forests, and Dry Deciduous Forests.
2. It is unclear which biogeographic classification has been used; according to the classification of Rodgers and Panwar (1988), this area would belong to the Western Ghats and Deccan Peninsula Biogeographical Zones, and within that the Western Ghats Mountains and Deccan Plateau South Biotic Provinces.
3. Both national parks and sanctuaries are sometimes referred to in this document as just 'sanctuary'.
4. Bandipur is also a national park, as is Nagarahole (now called Rajiv Gandhi National Park). Another protected area which is a part of the NBR, but not mentioned here, is Silent Valley National Park in Kerala.
5. Figures for 1990–91 to 1992–93 were obtained from the Ministry of Environment and Forests [Hazra, pers. comm., 1992].
6. Information from the respective management plans of these two areas gives somewhat different figures: 19°C to 30°C in Bandipur, and 14°C to 33°C in Nagarahole. Please see respective directory sheets.

7. Both these figures appear to be mistakes. In 1973, Bandipur was declared a Tiger Reserve. The following year, intention was declared to notify the area as a national park under the Wild Life (Protection) Act of 1972. Final notification has not yet been done. As for the area, the proposed national park extends over 87,420 ha. (874.20 sq.km). Please see directory sheet for further details.
8. In 1975, intention was declared to notify the area into a national park, and the area was enlarged. Subsequently, further enlargement has taken the size of the national park (finally notified in 1983) to 64,339.26 ha. (643.39 sq.km). Also, the park has been renamed Rajiv Gandhi National Park. Please see directory sheet for details.
9. *Chromolaena odorata*

PROPOSALS FOR AN IMPROVED WILDLIFE PROTECTED AREA NETWORK IN KARNATAKA

In 1984, the Government of India commissioned the Wildlife Institute of India, Dehradun, to evaluate the adequacy of the existing network of wildlife protected areas and to propose a network that covers the range of biological diversity in the country. The Institute's report, released in 1988, includes recommendations for an improved protected area network in each state [Rodgers and Panwar 1988b]. This is based on a bio-geographical classification of the country's ecosystems into several distinct zones and provinces [Rodgers and Panwar 1988a].

For Karnataka, the report recommends the creation of one new national park and 11 new sanctuaries, the upgradation of 2 sanctuaries to national park status, reduction in the area of two existing sanctuaries, and enlargement of four other existing sanctuaries. These proposals are given in detail below. It should be noted that the Government of Karnataka has already taken action on some of these proposals, including the creation of a new park (Kudremukh) and three new sanctuaries (Pushpagiri, Talakaveri, and Cauvery), and the reduction in boundaries of the Dandeli Sanctuary. However, if all the proposals of the Wildlife Institute report are accepted, Karnataka would have seven national parks and 24 sanctuaries (as against the present five and 19, respectively). The protected area network would then cover an area of 7,42,400 ha. as against the present 6,64,556.03 ha., which would be 3.87% of the state's area as compared to 3.47% at present.

(Editorial note: The text given below is reproduced almost verbatim from the report; any changes made are only for the sake of clarity. Our own comments are given in footnotes.)

SUMMARY OF RECOMMENDATIONS

Proposals include the strengthening of existing resources, as for example **enlarging Nagarhole NP**[1] to include forest areas towards the Kaveri River and Brahmagiri, and upgrading key Protected Areas such as **Bhadra** WLS to full park status. Other proposals are the development of new PAs in major gaps in the existing coverage, **Kudremukh** and **Talakaveri** are immediate examples. Some proposals are to create corridors linking important wildlife areas, as for example **Ammedikar** between Kudremukh and Pushpagiri forests, perhaps the narowest and most tenuous link in the whole forest chain of the Western Ghats.

A major PA is suggested for the **Kaveri** forests along the Tamil Nadu border, which will be adjacent to similar larger developments in that state. Two smaller proposals are for dry thorn and scrublands in central and northern Karnataka: **Bilgi** and **Chincholi** WLS.

DETAILS OF PROPOSED PROTECTED AREAS

Biogeographic Zone 5A (Malabar Coast)

1)	Hanover Riverine WLS 50 sq km	These two potential PAs are rare surviving relicts of the Malabar Plain forests. Pilarkhan is a type for Champion and Seth's West Coast Semi Evergreen Forest (2A/C3 2S1) in North Mangalore Division. The Hanavar patch requires identification in the lowland forest of that division.
2)	Pilarkhan WLS 20 sq km locality	

Biogeographic Zone 5B (Western Ghats Mountains)

3)	Dandeli WLS 995 sq km	The extensive but badly degraded Dandeli WLS of 5730 sq km is strongly recommended to be denotified. Two component good forest areas are suggested in its stead; Dandeli of 995 sq km in the northern trap area of the Upper Krishna Ghats near Maharashtra[2], and a 350 sq km block in the Gunjawatti-Angni Ranges in Kanara.
4)	Gunjawatti-Angni WLS 350 sq km	

5)	Sharavathi WLS 431 to 641 sq km	These five PAs all exist in the Kanara region of the Western Ghats. Sharavathi WLS and Mookambika WLS are contiguous, both are to be enlarged to include adjacent good evergreen Dipterocarp forest. Someswara is to the south of Kanara, and is enlarged slightly to give greater viability. Shettihally and Bhadra are on the drier eastern half of the ghats. Much of Shettihally is to be denotified, with which we agree to the recommen dations of the state authorities. Bhadra, a major area of moist deciduous forest should become a full park.
6)	Someswara WLS 88 to 141 sq km	
7)	Mookambika WLS 247 to 367 sq km	
8)	Shettihally WLS 396 to 88 sq km	
9)	Bhadra NP upgrade from WLS 492 sq km	
8)	Kudremukh NP 630 sq km	These are PA proposals for the Coorg biogeographic region. Kudremukh and Pushpagiri are important evergreen forest blocks with significant wildlife values[3]. Ammedikal is a linking forest cover across the narrowest neck of forest in the whole Western Ghats. Kudremukh is the northern most extent of true shola forest and is described as the most important lion tailed macaque population in Karnataka. The size and scale of resources of the area allows it to become a park of national significance.
9)	Pushpagiri WLS 108 sq km	
10)	Ammedikal WLS 100 sq km	
11)	Brahmagiri NP 281 sq km	These areas are in the southern Wyanad forests of Karnataka. Proposals are to extend Brahmagiri north westwards to link up with the new proposal of Talakaveri WLS[4]. Brahmagiri should be upgraded to NP status.
12)	Talakaveri WLS 163 sq km	
13)	Nagarhole NP[1] 572 to 721 sq km	Proposals are to extend the park into the Kaveri River forests to the north and to include the Masal Valley area of Kakankote RF. These additions will enclose important elephant dispersal areas.

Biogeographic Zone 6 (Deccan Peninsula)

14)	Biligiri Rangaswamy Temple WLS 324 to 574 sq km	This PA conserves the southern end, of the Eastern Ghats and serves as a partial link between this and the Western Ghats. This proposal is to include the adjacent Doddasampinge forest of importance as an elephant habitat.
15)	Kaveri WLS 300 sq km	To protect representative examples of southern riverine and moist deciduous forest (biomes poorly conserved elsewhere) in an area important for elephant dispersal[5]. The boundaries should link with similar proposals in Tamil Nadu.
16)	Bilgi WLS 20 sq km	Important examples of scrub jungle, thorn and deciduous communities in Karnataka. Bilgi has a chinkara population, Chincholi a peripheral blackbuck population.
17)	Chincholi WLS 172 sq km	

Biogeographic Zone 8 (Coast)

18)	Kundapur WLS 1 sq km	The Carnatic coast is not protected today. These are proposals to reclaim a tiny area of degraded mangrove in Kundapur Division, and to search for a representative example of sand-rock beach with typical littoral vegetation.
19)	Rocky-sandy beach WLS 5 sq km	

1. Now renamed Rajiv Gandhi National Park
2. The boundaries of Dandeli Sanctuary have been changed in 1988, and the area has now been trimmed to 83,415.71 ha. (834.16 sq km). It also adjoins the state of Goa.
3. Both have been recently notified, though not as large as proposed.
4. Talakaveri WLS has been recently notified, though not as large as proposed.
5. Recently notified, and much larger than proposed.

APPENDIX 8

NGOs/NGIs (INCLUDING HONORARY WILDLIFE WARDENS) ASSOCIATED WITH NATIONAL PARKS AND SANCTUARIES IN KARNATAKA

CITIZENS' GROUPS

Centre for Ecological Sciences, Indian Institute of Science, Bangalore - 560012
Life Environment Awareness Foundation (LEAF), 26-27, 9th Main, Raj Mahal Vilas, Bangalore - 560080
Merlin Nature Club, 13, 8th Cross 30th Main, Sarakki ITI Layout, JP Nagar I Phase, Bangalore - 560078
Wildlife Association of South India (WASI), 17/1 Victoria Road, Bangalore - 560047
World Wide Fund for Nature - India, Karnataka State Office, Kamla Mansion, 143 Infantry Road, Bangalore - 560001
World Wide Fund for Nature - India: Data Centre for Natural Resources, (as above)

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Mr. K. R. Sethna, Elli Kodagi Estate, Aldoor Post, Chickmagalur Dist., Karnataka
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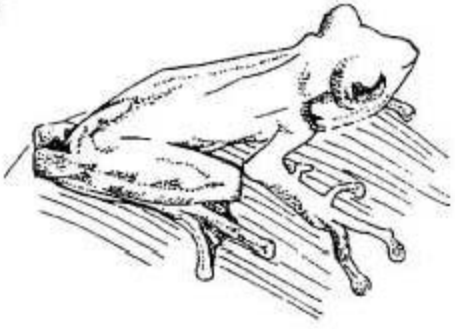

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The maps of national parks and sanctuaries are made from one or more sources, the two main sources being the Survey of India topographical sheets [tp] and the maps provided by the state wildlife authorities [map]. Except where mentioned, the scale of all topographical sheets is 1:50,000, and the 1st edition is the one used. The notifications provided by the wildlife authorities have also been used to mark the boundaries of the protected areas. The numbers of these notifications have been given in the respective park and sanctuary directory sheets. Toposheets marked 'R' below, are restricted.

Name spellings of sanctuaries/national parks, were taken from gazette notifications, and of places/ settlements, from Survey of India toposheets.

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2. The State of Forest Report (1991) Government of India, Forest Survey of India, (Ministry of Environment and Forest) Dehradun.
3. Parks/sanctuaries location map (undated) sent by the State Government.
4. Vegetation Map, (based on visual enterpretation of Landsat M.S.S. 4/5 Imagery) (1983–84)

Directory Sheet Maps

NATIONAL PARKS

1. Anshi: Tp nos. 481/8 (1979) R, 481/5 (1978) R
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   Map (undated)
2. Bandipur: Tp nos. 58A/1 (1977) R, 58A/5, 58A/6 (1978)R, 58A/9 (1974) R, 58A/10 (1976) R, 58A/14 (1976) R, 58A/1 (1979
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14.	Gudavi :	Tp no. 48N/3 (1977) R FSI no. 48n (1986) Map (undated)
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17.	Nugu :	Tp. no. 58A/5 (1974) FSI no. 58A (1989) Map (undated)
18.	Pushpagiri:	Tp no. 48P/10 (1986) R FSI no. 48P (1986) Map (undateed)
19.	Ranebennur:	Tp nos. 48N (1:250,000) (1984), 48N/10 (1976) FSI no. 48N (1986) Map (undated)
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by Ashish Kothari, Pratibha Pande, Shekhar Singh, and Dilnavaz Variava, 1989.

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