CHAPTER THREE

PRESENT STATUS OF WILDLIFE DIVERSITY IN THE CHANDOLI WILDLIFE SANCTUARY

The Revenue and forest department of the Govt. of Maharashtra on 16th September 1985 declared the 308.97 sq.km area of 32 villages from the districts of Kolhapur, Sangli, Satara and Ratnagiri as "Chandoli Wildlife Sanctuary" for its ecological, faunal and floral significance. The area was needed to be constituted as a wildlife sanctuary for the purpose of protecting, propagating or developing wildlife therein or its environment by sub-sections (I) and (II) of sections 18 and 19 of the Wildlife (Protection) Act 1972 (53 of 1972).

Despite the area being declared as a Wildlife Sanctuary there are reports of destruction of nature and particularly wildlife in the region. The causes of the degradation of biological diversity in the region is due to several factors.

The prime sub-tropical evergreen and semievergreen vegetation which has reached its climax stage in some areas is at present under tremendous stress. This ever increasing pressure on natural vegetation is from local inhabitants and outsiders alike.

The entire subsistance of the local inhabitants depends on the natural biomass. In the recent years, due to the expansion in agriculture land, the natural vegetation has been reduced at an alarming rate. This process of degradation of forests has been agrevated by large scale tree cutting, by timber merchants and traders, to supply wood for various purposes to the growing industrialization in the command areas of the dams in the Western Ghats. Sugar and allied industries play a major role in

the consumption of forest resources, particularly fuelwood. This increased utilization of fuelwood has resulted in the decline of forest wealth in the region leading to an acute stress on animal diversity due to the habitat destruction and exposure to several adverse conditions.

1. Flora of the Study Area :

In the present investigations though the emphasis of the study was on mammals, during field work florastic diversity was also recorded in the study area. Mahajan and Vaidya (1975) have given general floristic account of the region. This is the only source of scientific information on the area. The quantitative investigations on the flora of the region was though out of the scope of this study, vernacular names of the local plant species and their abundance was recorded. Table 4 gives a list of 162 such species, which are, grouped as Abundant (4.94%), Common (19.13%) and uncommon (75.92%), recorded from the study area. However, due to want of time and expertise it was not possible to identify all the plant species inspite of knowing their vernacular names.

The abundant species recorded in the area were Terminalia tomentosa, Memecyclon edule, Mangifera indica, Terminalia chebula, Fiscus glomerata, Eugenia jambolana, Lagerstoemia microcorpa and Lasiosiphon eviocaplealus.

Some of the common species were Strobillanthus collosus, Carissa carandas, Torminalia paniculata, Xylia xylocarpa, Terminalia belerica, Randia dumetorum, Phyllanthus embilica, Dalbergia latifolia, Caricinia indica, Artocarpus integrifolia

Table 4 : List of Abundant, Common and Uncommon plant species and their vernacular and scientific names from CWS.

Sr. No.	Common Name	Scientific Name	Abundant	Common	Uncommon
1.	Ain	Terminalia tomentosa	✓	-	-
2.	Akata	-	-	-	✓
3.	Alu	Vengueria spinosa	-	-	✓
4.	Alvi	Morinda tinctoria	-	-	✓
5.	Ambalagara	-	-	-	✓
6.	Anjan	Memecyclon edule	✓	-	-
7.	Apta	Banhinia recemosa	-	✓	-
8.	Asan	Pterocarpus marsupium	-	-	✓
9.	Asta Ficu	Ficus arnottina	-	✓	-
10.	Asuli	-	-	-	✓
11.	Ataki	Pittosporum floribundum	-	-	✓
12.	Awala	Phyllanthus embilica	-	✓	-
13.	Adul	Albizzia ordoratissima	-	-	✓
14.	Amba	Magnifera indica	✓	-	-
15.	Baman	Calebrookia opposififolia	-	✓	-
16.	Bamboo	Oxytentathera stocksii	-	-	✓
17.	Behada	Terminalia belerica	-	-	✓
18.	Bhawa	Cassia fistula	-	✓	-
19.	Bhomya	Glochydeon lanceolarium	-	✓	-
20.	Bhoram	Ammora hawii	-	-	✓
21.	Bhurombi	Blumca amplectens	-	-	✓
22.	Bhendi	Thespesia polulnea	-	-	✓
23.	Bhor	Zizyphus jujuba	-	-	✓

Table 4 : (Contd..)

Sr. No.	Common Name	Scientific Name	Abundant	Common	Uncommon
24.	Bobidasa	Dicspyros assimilis	-	-	√
25.	Bok	-	-	-	√
26.	Bokada	Caseria gravealens	-	-	√
27.	Bilava	-	-	-	√
28.	Buthi	Elasodendron glecum	-	-	√
29.	Chandwad or Chandada	Macaranga roburghii	-	√	-
30.	Chapha	-	-	-	√
31.	Chaphe	Michelia champaca	-	-	√
32.	Chichori	-	-	-	√
33.	Chimat	Scutia indica	-	-	√
34.	Chirphal	-	-	-	√
35.	Chitrang	Plumbago zeylanica	-	-	√
36.	Chiwa	Dendrocalamus strictus	-	-	√
37.	Dhamani	Grewia tilioefolia	-	√	-
38.	Dhombal	-	-	-	√
39.	Dhyti	Wcod-foridia flowbunda	-	-	√
40.	Dinda	Heaa microphylia	-	√	-
41.	Ekeri	-	-	-	√
42.	Erandi	Ricinus communis	-	-	√
43.	Gardal	-	-	-	√
44.	Garvel	-	-	-	√
45.	Gavanda	-	-	-	√
46.	Gela	Randia dumetorum	-	√	-
47.	Gelamb	Machilus marantha	-	-	√

Table 4 : (Contd...)

Sr. No.	Common Name	Scientific Name	Abundant	Common	Uncommon
48.	Ghaneri	Lantana camera	-	-	✓
49.	Ghewada	Terminalia arjuna	-	-	✓
50.	Ghoram	-	-	-	✓
51.	Ghoryla	-	-	-	✓
52.	Gilgili	-	-	-	✓
53.	Gochadi	-	-	-	✓
54.	Hadaka	Rouwoffia densiflora	-	/	-
55.	Hadsandi	-	-	-	✓
56.	Halvan	-	-	-	✓
57.	Haval	-	-	-	✓
58.	Hela	Terminalia belerica	-	✓	-
59.	Hirda	Terminalia chebula	✓	-	-
60.	Umber	Fiscus glomerata	✓	-	-
61.	Hunan	-	-	-	✓
62.	Hura	Sapium insigna	-	-	✓
63.	Jakal	-	-	-	✓
64.	Jambha	Xylia xylocarpa	-	✓	-
65.	Jambhul	Eugenia jambolana	✓	-	-
66.	Jaswanda	-	-	-	✓
67.	Jayphal	Myristica laurifolia	-	-	✓
68.	Kadipala	-	-	-	✓
69.	Kaldavi	-	-	-	✓
70.	Kalamb	Stephyegyme parvifolia	-	-	✓
71.	Kali kudi	Wrightia tinctoria	-	-	✓
72.	Kala zad	Disospyros montana	-	-	✓

Table 4 : (Contd..)

Sr. No.	Common Name	Scientific Name	Abundant	Common	Uncommon
73.	Karambal	Dillenia pentagyma	-	-	√
74.	Karanj	Porgamia glabra	-	-	√
75.	Karanjawad	-	-	-	√
76.	Karvand	Carissa carandas	-	√	-
77.	Karvi	Strobillanthus collosus	-	√	-
78.	Katak	Briddia retusa	-	√	-
79.	Katav Nirgudi	Vitex trifolia	-	-	√
80.	Kel	Fiscus tsjakela	-	-	√
81.	Kevada	Swartia deussata	-	-	√
82.	Kevan	Helicteres isora	-	-	√
83.	Kharwat	Fiscus asparrima	-	-	√
84.	Khaknel	-	-	-	√
85.	Kharuti	-	-	-	√
86.	Kinjal	Terminalia paniculata	-	√	-
87.	Kudunimb	Murraya koenigii	-	-	√
88.	Kumbal	Sideroxylon tomentosum	-	√	-
89.	Kumbha	Careya arborea	-	-	√
90.	Kusar	Jasminum arboresoans	-	-	√
91.	Lakusari	-	-	-	√
92.	Limbara	Malia dubia	-	-	√
93.	Lod	Symplocos beddomei	-	-	√
94.	Lokhandi	Ixora parviflora	-	-	√
95.	Maad	-	-	-	√
96.	Makad	-	-	√	-

Table 4 : (Contd..)

Sr. No.	Common Name	Scientific Name	Abundant	Common	Uncommon
97.	Male	See bondara	-	-	√
98.	Mess kati	Bambusa arundinacea	-	-	√
99.	Mirachi	-	-	-	√
100.	Modi	Caseaura tomentosa	-	-	√
101.	Mohorook	Allanthus excelsa	-	-	√
102.	Morambi	-	-	-	√
103.	Muee	-	-	-	√
104.	Nana	Lagerstoemia microcarpa	√	-	-
105.	Narkya	Premna nimmoniana	-	-	√
106.	Natawada	-	-	-	√
107.	Necha	-	-	-	√
108.	New	-	-	-	√
109.	Nilgiri	Eucalyptus camaldulensis	-	-	√
110.	Nirgudi	Vitex negundo	-	√	-
111.	Nivdung	Euphorbia noriifolia	-	-	√
112.	Pachawa	Diospyros spp.	-	-	√
113.	Padali	Stereospermum chalonoides	-	-	√
114.	Paloos	Bhutea frondosa	-	√	-
115.	Pandari kudi	Holarrhena antidysenterica	-	√	-
116.	Panderphali	Flueggia microcarpa	-	-	√
117.	Pangala	Pogostemon parfflorous	-	-	√
118.	Pangera	Erythrina indica	-	√	-
119.	Pati	-	-	-	√
120.	Peravi	Wendlandia notoniana	-	-	√
121.	Phanshi	Carallia integerrima	-	-	√

Table 4 : (Contd..)

Sr. No.	Common Name	Scientific Name	Abundant	Common	Uncommon
122.	Phanus	Artocarpus integrifolia	-	✓	-
123.	Phapti	Fleuggea sp.	-	-	✓
124.	Pimpal	Fiscus religiosa	-	-	✓
125.	Pipren	-	-	-	✓
126.	Pisha	Actinodaphno hookeri	-	✓	-
127.	Pyer	-	-	✓	-
128.	Ragatwad	-	-	-	✓
129.	Rameta	Lasiosiphon eviocaplealus	✓	-	-
130.	Ran Bhendi	Thespesia lanepas	-	-	✓
131.	Ran Bibi	Holigarna arnottiana	-	✓	-
132.	Ranchiwa	Oxytenanthera monostigma	-	-	✓
133.	Ranphanus	Artocarpus hirsuta	-	-	✓
134.	Ratamba	Caricinia indica	-	✓	-
135.	Ratrani	- -	-	-	✓
136.	Ravan	-	-	-	✓
137.	Rohini	Sayamida febrifuga	-	-	✓
138.	Rotwal	-	-	-	✓
139.	Rue	Catstoopia gigantea	-	-	✓
140.	Satvel	-	-	-	✓
141.	Sawer	Bombax malabaricum	-	✓	-
142.	Shemberti	Acaca pennata	-	-	✓
143.	Shekekai	Acacia concinna	-	-	✓
144.	Shivga	-	-	-	✓
145.	Shiras	Albizzia lebbek	-	-	✓
146.	Shisav	Dalbergia latifolia	-	✓	-

Table 4 : (Contd..)

Sr. No.	Common Name	Scientific Name	Abundant	Common	Uncommon
147.	Shiven	Gmelina arborea	-	-	✓
148.	Tamalpatri	Cinnamomum tamala	-	-	✓
149.	Tavsha	-	-	-	✓
150.	Thetva	-	-	-	✓
151.	Tirtiri	-	-	-	✓
152.	Toran	Zizyphus-rugosa	-	✓	-
153.	Triphal	-	-	-	✓
154.	Turati	-	-	-	✓
155.	Udala	-	-	-	✓
156.	Vakeri	Wagatea spicata	-	-	✓
157.	Varanga	Kydia calycina	-	-	✓
158.	Varas	Heterosphrangma oxburgloi	-	-	✓
159.	Vet	Calomus pseudotenuis	-	-	✓
160.	Viverna	-	-	-	✓
161.	Vomb	Saccopetalum tomentosum	-	-	✓
162.	Wad	Fiscus bengalensis	-	-	✓
	Total	162 =	8	31	123
	Percentage	100 =	4.94	19.13	75.92

Actinodaphno hookeri etc.

The type and status of the flora in any ecosystem basically decides the nature and the diversity of the fauna dependent on it. Particularly in the northern Western Ghats in South Maharashtra rich animal diversity has been supported by the luxurant sub-tropical evergreen semievergreen and moist deciduous vegetation.

Samant et al. (1988) have reported excellent animal diversity belonging to five vertebrate classes from the Western Ghats region of Maharashtra which includes Chandoli Wildlife Sanctuary (Table 5). It can be seen from the table that altogether 79 species of mammals belonging to 8 orders, 2 sub-orders and 26 families have been reported.

2. Studies on Important Wild mammals :

During the current studies undertaken in the newly declared Chandoli Wildlife Sanctuary, the scope was restricted only to the important mammalian species, depending on their significant direct or indirect interaction with the local people. These 30 mammalian species belonged to 6 orders and 16 families (Table 6). The interesting feature of the animals was that they represented diverse habits, habitats and roles in the study area. They belonged to terrestrial, arboral and aquatic habitats from thick forests, degraded areas, waste lands and cultivations from hills and river basins. All the mammals had direct or indirect interaction with the local human population either as pest, subsistance, food competitator or as a predator.

According to the schedule of the Wildlife Protection

Table 5 : Animal diversity in the Western Ghats of Maharashtra including Chandoli Wildlife Sanctuary (Samant et al., 1988).

Animal	Order	Suborder	Family	Subfamily	Species
Mammals	8	2	26	-	79
Birds	17	-	58	4	412
Reptiles	3	1	13	--	71
Amphibians	2	-	4	-	20
Fishes	7	8	22	3	166

Table 6 : Taxanomic list of the Wild mammals studied in the Chandoli Wildlife Sanctuary with their status in the Wildlife Act 1980.

Sr. No.	Scientific Name	Common English Name	Schedule No. in Wildlife Act
	Order : Primates (Apes and monkeys)		
	Family: Cercopithecidae		
1)	Macaca radiata	Makad	II
2)	Presbytis entellus	Langur, Wanar	II
	Order : Pholidota (Pangolin)		
	Family: Manidae		
3)	Manis crassicaudata	I.Pangolin	I
	Order : Carnivora (Dogs, Cats, bears, Civets etc.)		
	Family: Canidae		
4)	Canius aureus	Jackal	IV
5)	Vulpes bengalensis	Bengal fox	IV
6)	Cuon alpinus	Wild dog	II
	Family : Ursidae		
7)	Melursus ursinus	Sloth Bear	I
	Family : Mustelidae		
8)	Lutra perspicillata	Smooth coated Indian otter	II
	Family : Viverridae		
9)	Vivericula indica	Small Indian civet	IV
10)	Paradoxurus hermaphroditus	Common palm civet	IV
11)	Herpestes edwardsi	Indian grey mongoose	IV
12)	Herpester auropunctuatus	Small Indian Mongoose	IV

Table 6 : (Contd..)

	Family : Hyaenidae		
13)	Hyaena hyaena	Stripped hyena	III
	Family : Felidae		
14)	Felius chaus	Jungle cat	IV
15)	Felius bengalensis	Leopard cat	I
16)	Felius marmorata	Marbeled cat	I
17)	Panthera pardus	Panther	I
18)	Panthera tigris	Tiger	I
	Order : Artiodactyla (Pig, Deer, Antelopes)		
	Family: Suidae		
19)	Sus scrofa	Wildboar	III
	Family : Traculidae		
20)	Tragulus meminna	Indian spotted cheverotwin	I
	Family : Cervidae		
21)	Muntiacus muntjack	Barking deer	III
22)	Axis axis	Spotted deer	III
23)	Cervus unicolor	Samber	II
	Family : Bovidae		
24)	Boselaphus tragocamelus	Blue bull	III
25)	Bos gaurus	Gaur	II
	Order : Lagomorpha		
	Family: Leporidae		
26)	Lepus nigricollis	Indian hare	IV

Table 6 : (Contd..)

	Order : Rodentia (Squirrels, Porcupines, Rats and Mice)		
	Family: Scuridae		
27)	Funambulus palmarum	Three stripped palm squirrel	V
28)	Ratufa indica	Giant squirrel	II
	Family : Hystricidae		
29)	Hystrix indica	Indian orested porcupine	IV
	Family : Muridae		
30)	Mus booduga	little Indian field mouse	V

Act (1972) of the Government of India, based on the status of the rare animal species. The mammalian species of the sanctuary belonged to Schedules I(7), II(7), III(5), IV(9) and V(2). It is revealed from the Table 6 that about 50 % of the animals are either in Schedule I or Schedule II i.e. strictly protected endangered animals.

The villages and remote settlements in the sanctuary have made significant impact on the adjoining areas. However, the intensity of the damage depends on number of variables, namely human and domestic animal populations in the village, remoteness of the area, nature of forest habitats, climate, vegetation, water resource etc.

Also the submergence of the lowland areas in the Warna dam impoundment has caused alterations in the microhabitats by cutting off local migratory routes, isolating thick patches of forests and thus restricting the wildlife populations and adversely influencing the animal diversity. The human activities in the region, particularly land use practices and grazing alongwith regular poaching activity has detrimental impact on the Wildlife in the sanctuary area. Table 7, gives an excellent profile of the distribution and present status of the 30 wild mammals in the visinity of the 24 villages from the sanctuary. For the qualitative study based on the observations on wildlife scat, pug marks, kills, and information from poachers, the status of wild life around villages was determined as Abundant (more than 60 %), Common (more than 33 %), Rare (less than 33 %) and Absent (0 %).

The present status and the percentage occurance of the 30 wild mammals studied from the entire sanctuary is given in table 8. In the animals which appear to be very common in the study area include Barking deer (95.8 %), Hare (83.3%), Wildpig (91.6%), Sambar (50%), Gaur (33.3%), Bear (37.5 %) and in the Carnivores Panther (25 %). Among the other common animals reported from the study area are Pangolin (33.3%), Porcupine (41.6%), Mouse deer (54.1%), Jacal and Indian Fox (54.1 %), Common and Small Indian Mongoose (70.8%) and in Carnivora Jungle Cat (33.3%). The uncommon animals in the study area were Tiger (70.8%), Leopard Cat (70.8%), Common palm civet (66.6%), Small Indian Civet (75 %), Wild dog (70.8%), Giant Squirrel (87.5%) three striped Squirrel (83.3%) Pangolin (66.6 %).

The rare animals which were absent in most of the study area were Marbeled Cat (4.1%), Chital (25 %), Hyna (29.1%), Ottar (8.3 %) and Nilgai 4.1%).

3. Formation of Zones in the Sanctuary :

The Table 9, gives the land profile in the 24 villages in the sanctuary. The village land has been divided into 4 catagories, by the Revenue Department, into Cultivated land, Waste land (not available for cultivation), Culturable Waste land and Forest land.

Considerably less disturbed forest areas, on own land and Govt. land, are found on the hill slopes in the western region of the Wildlife Sanctuary. A large areas in the forest represent different successional stages of semievergreen and

Table 8 : Percentage occurance and the status of the 30 Wild mammals from the entire Chandoli Wildlife Sanctuary.

Sr. No.	Wild mammals	Status			
		Abundant	Common	Uncommon	Absent
1.	Monkey	0.0	16.6	75	8.3
2.	Langur	4.16	12.5	75	8.3
3.	Tiger	0.0	20.8	70.8	8.3
4.	Panther	25	45.8	29.1	0.0
5.	Jungle cat	0.0	33.3	4.1	12.5
6.	Leopard Cat	0.0	4.1	70.8	25
7.	Marbeled Cat	0.0	0.0	4.1	95.8
8.	Common Palm Chet	0.0	33.3	66.6	0.0
9.	Small Indian Civet	0.0	0.0	75	25
10.	Common mongoose	12.5	70.8	12.5	4.1
11.	Small Indian mongoose	12.5	70.8	12.5	4.1
12.	Jackal (Kolha)	4.1	54.1	41.6	0.0
13.	Jackal (Kuteri)	4.1	54.1	41.6	0.0
14.	Wild dog	0.0	4.1	70.8	25
15.	Samber	50	33.3	4.1	12.5
16.	Chital	0.0	0.0	25	75
17.	Barking deer	95.8	4.1	0.0	0.0
18.	Mouse deer	29.1	54.1	12.5	4.1
19.	Porcupine	4.1	41.6	54.1	0.0
20.	Field Rat	0.0	0.0	25	75
21.	Giant squirrel	0.0	0.0	87.5	14.2
22.	3 Stripped Squirrel	.0	4.1	83.3	12.5
23.	Hare	3	16.6	0.0	0.0
24.	Bear	5	33.33	20.8	8.3
25.	Wild pig	6	8.3	0.0	0.0
26.	Pangolin	0.0	33.3	66.6	0.0
27.	Hyna	0.0	0.0	29.1	70.8
28.	Otter	0.0	0.0	8.3	91.6
29.	Nilgai	0.0	0.0	4.1	95.8
30.	Gaur	33.3	37.5	20.8	8.3

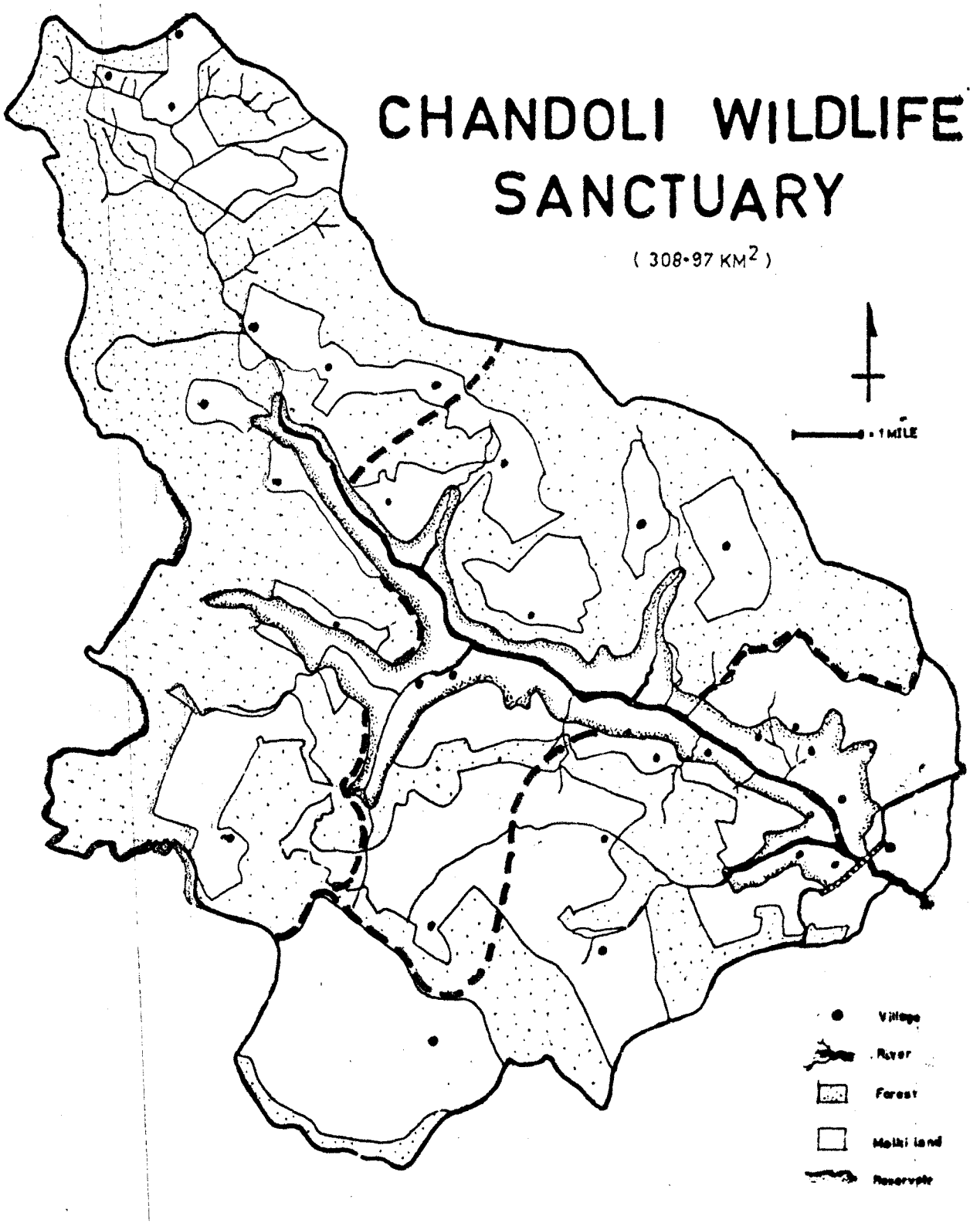


Fig 6: Sanctuary map showing the proposed zones A, B & C.

Table 9 : Village land profile and its distribution in the proposed zones A, B and C in the Chandoli Wildlife Sanctuary.

Sr. No.	Villages	Unirrigated land	Not available for cultivation	Culturable Waste	Forest	Zone
1.	Chandel	28	714	96	1483	
2.	Nivale	244	24	24	653	
3.	Gave	133	6	41	368	
4.	Chandoli Kh.	245	9	9	898	
5.	Kolne	30	12	247	185	A
6.	Male	106	53	385	1146	
7.	Patherpunj	38	29	216	680	
8.	Rundiv	153	16	16	1620	
9.	Jawali	154	14	32	409	
10.	Gothane (Nav)	856	-	-	-	
	Total	1987	877	1066	7442	
11.	Lotiv	306	6	1	334	
12.	Yeti	226	21	15	636	
13.	Takale	292	7	2	598	
14.	Zolambi	463	24	44	1269	B
15.	Sonarli	69	521	406	-	
16.	Petlond	637	24	1	285	
17.	Dhakale	53	440	331	680	
	Total	2046	1043	815	3829	
18.	Nandoli	366	17	5	599	
19.	Khundalapur	486	46	152	-	
20.	Tambave	98	352	234	-	C
21.	Nivale	59	52	133	37	
22.	Gothane (Khadi)	171	203	480	-	
23.	Durgawadi	123	218	481	-	
24.	Tanali	53	546	220	-	
	Total	1356	1434	1705	636	
	Grand Total	5389	3354	3586	11907	

evergreen type including climax. Part of the forest is secondary. Villages Chandel, Chandoli, Male, Rundiv, Yeti, Zolambi, Dhakale and Nandoli had large forests around (Plate 1, a).

The waste lands are the ones which are not available for cultivation because of their nature as they all on steep slopes, exposed rock surfaces (Sada), extremely poor in fertility or escarpments. Some of the remote villages like Chandel, Sonarli, Dhakale, Tambve, Tanali etc. have significant non culturable waste lands around them (Plate 1, b).

The culturable waste lands are primarily grasslands and open degraded lands with considerable soil productivity. These lands serve as grazing lands for domestic as well as wild herbivorous. In certain villages these lands belonging to Revenue or Forest departments are encroached upon for many years. Vast culturable waste lands are found near villages Male, Kolane, Patharpunj, Sonarli, Dhakale, Gothane (K), Durgewadi etc. (Plate 2, a).

Basically the cultivated land is the one where crops are grown, in the study area they are mainly paddy in valleys and terraces and Millets (Nachana & Vari) on hill slopes. The cultivated lands are either comentionally cultivated or shifting cultivated depending on the land use practice. These lands are being increased in last few years (Plate 2, b).

On the basis of the catagories of the four types of lands, the 24 villages in the sanctuary are grouped in the three zones A, B and C (Table 9). Fig. 6 shows the zones in the sanctuary

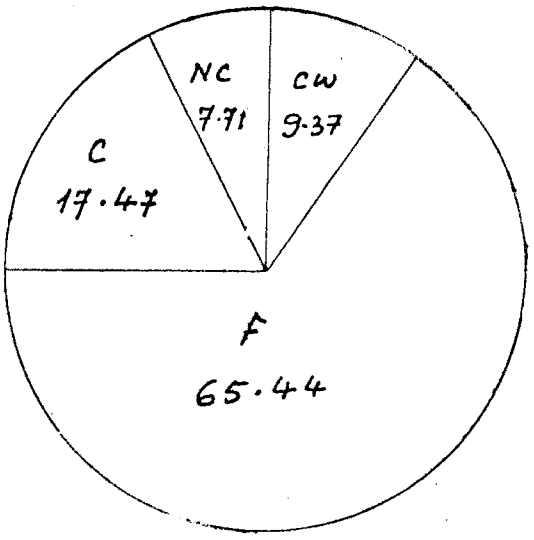
boundry. The zone A is in the extreme west and north west region in the upper catchment of the warna dam with the origin of the Warna river and its initial tributaries Fig.6. The zone has 10 villages in it and it comprises of the 46.70 % of the total area of the sanctuary.

The zone B with 7 villages is partially degraded with secondary growth of forests. It is situated at the either side of the main body of the reservoir and mainly towards the north i.e. adjoining Sangli district. This zone is smaller than zone A and is about 31.7 % of the total area.

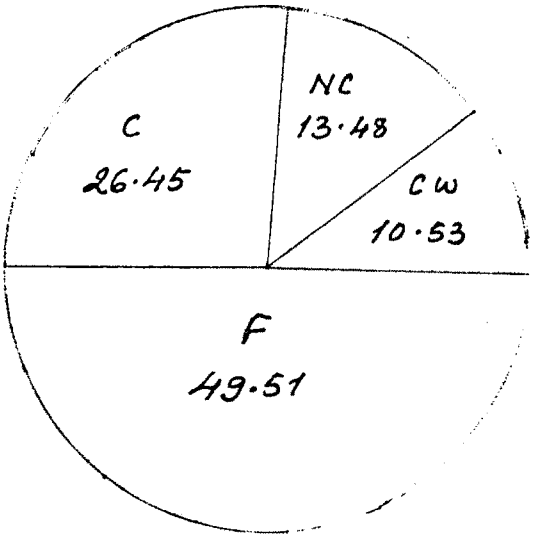
The zone C is also comprised of 7 villages and has 21.6 % of land but has almost totally degraded environment, with largest of waste lands.

Figure 7 shows the percentage distribution of the four types of lands in the zones A, B and C and in the Chandoli Wildlife Sanctuary. It can be seen that the composition of the four types of lands in the three zones is strikingly different. The forest land is maximum in zone A (66.44 %) followed by zones B and C i.e. 49.51 % and 12.39 % respectively. In case of cultivated land the picture is just the opposite. The zone A has the minimum of cultivated land (17.47 %) and the zones B and C have almost same percentage i.e. 26.4 %)

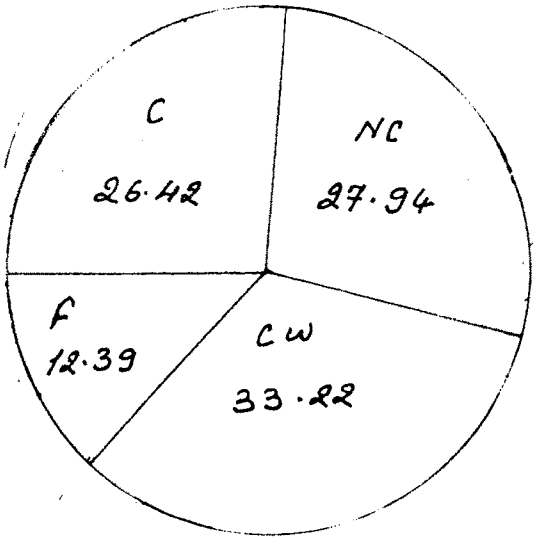
The proportion of non culturable land and culturable waste land increases in the successive zones A, B and C as it has correlation with human activities, degradation of forest in the past and the type of soils. The culturable wastelands are 9.37 % in zone A, 10.53 % in zone B and 33.22 % in zone C.



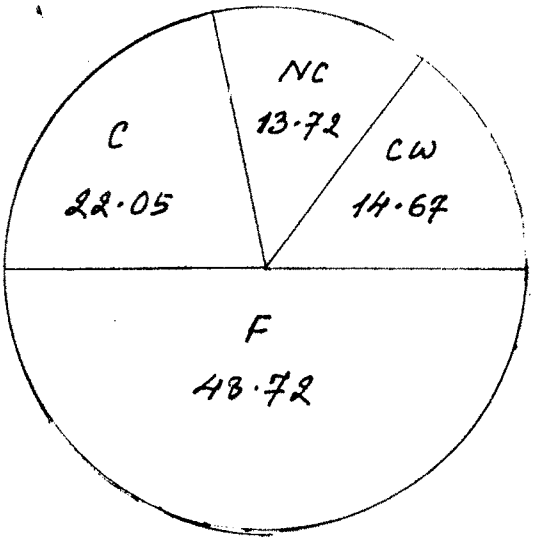
Zone 'A'



Zone 'B'



Zone 'C'



Sanctuary

Fig 7 : Percentage distribution of four types of lands in the Zones A, B, C and the Sanctuary.

Whereas the non cultivable land proportion is 7.71 % in A, 13.48 % in B and 27.94 % in C zone.

The percentage of the four types of lands in the sanctuary area comes to about Forest (48.72 %), Cultivated land (22.05 %), Culturable wasteland (14.67 %) and non cultivable land (13.72 %) (Fig. 7).

On the basis of the analysis of the occurance of the 30 wild mammals in the study area, The present status of the animals around the 24 villages was studied. Table 10 gives the percentage distribution of the wild mammals in the vicinity of the villages in the study area.

The study revealed that the distribution and status of the wild animals was dependent on the nature of the habitat and the characteristics of the animals. Particularly in the villages where thick vegetation exists the rare species like tiger, Panther, Wild Cats, Wild dog, bear, Gaur etc. even if in small numbers, were recorded. The villages which had degraded forests around supported less rare animals in comparatively larger populations like wild pig, Hare, barking dear, porcupine, mongoose etc.

Therefore there was inverse correlation between qualitative richness and quantitative values observed in the wild mammals around the villages from the three zones A, B and C. Naturally the picture of qualitative richness of animal diversity is not clear from the table 10.

The percentage occurances of the individual animal species in zones A, B and C is given in the table 11. The data

Table 10 : Percentage distribution of wild mammals in the vicinity of the villages in the Chandoli Wildlife Sanctuary and the zones in which the villages are situated.

Sr. No.	Villages	Zone	Abundant (%)	Common (%)	Rare (%)	Absent (%)
1.	Gothane	C	13.33	23.34	43.34	20.00
2.	Nivale	C	10.00	36.67	40.00	13.33
3.	Tanali	C	20.00	26.67	36.67	16.66
4.	Dhakale	B	10.00	33.33	36.67	20.00
5.	Chandel	A	20.00	30.00	33.33	16.66
6.	Sonarli (Dwd)	B	10.00	16.66	30.00	43.34
7.	Durgawadi	B	10.00	33.33	43.34	13.33
8.	Tambave	C	20.00	23.34	36.67	20.00
9.	Khundalapur	C	26.67	13.34	26.67	33.33
10.	Nandoli	C	10.00	23.34	30.00	36.67
11.	Petlond	B	10.00	26.67	40.00	23.34
12.	Zolambi	B	13.33	16.66	46.67	23.34
13.	Takale	B	10	23.34	50.00	16.66
14.	Yeti	B	16.66	20.00	43.34	20.00
15.	Lotiv	B	20.00	23.34	30.00	26.67
16.	Nivale	A	20.00	36.67	26.67	16.66
17.	Gave	A	16.66	16.66	33.34	33.34
18.	Chandoli Kh.	A	20.00	10.00	50.00	20.00
19.	Jawali	A	26.67	16.66	30.00	26.67
20.	Rundiv	A	16.66	30.00	36.67	16.66
21.	Male	A	16.66	26.67	40.00	16.66
22.	Kolne	A	20.00	13.34	50.00	16.66
23.	Patherpunj	A	16.66	16.66	36.67	30.00
24.	Gothane	A	13.33	16.66	50.00	20.00

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Table 11 : Percentage occurance of the 30 wild mammals in the zones A, B and C in the Chandoli Wildlife Sanctuary.

Sr. No.	Animal	ZONE		
		A	B	C
1.	Macaca radiata	23 %	15.38 %	11.52 %
2.	Presbytis entellus	17.5 %	16.82 %	16.87 %
3.	Panthera tigris	35 %	16.82 %	8.64 %
4.	Panthera pardus	39 %	42.30 %	39.09 %
5.	Felius chaus	29.5 %	20.19 %	36.21 %
6.	Felis bengalensis	9.5 %	5.76 %	17.69 %
7.	Felis marmorala	0.5 %	0 %	0 %
8.	Paradoxurus hermaphroditus	42 %	28.8 %	42.38 %
9.	Viverricula indica	7.5 %	12.5 %	10.69 %
10.	Herpestes edwarshi	43 %	31.25 %	46.50 %
11.	Herpestes auropunctuatus	42.5 %	21.25 %	44.44 %
12.	Canis aureus	41.5 %	29.80 %	47.73 %
13.	Vulpes bengalensis	28.9 %	30 %	50 %
14.	Cuon alpinus	37.5 %	20.67 %	18.93 %
15.	Cervus unicolor	70 %	46.63	29.62 %
16.	Axis axis	3 %	1.92 %	0.82 %
17.	Muntiacus muntjack	78 %	71.63 %	74.89 %
18.	Tranqulus meminsa	50.5 %	49.5 %	53.49 %
19.	Hystrix indica	32 %	29.32 %	39.50 %
20.	Mus booduga	2 %	0.96 %	0.41 %
21.	Ratufa indica	28.5 %	20.67 %	18.10 %
22.	Funambulus palmarum	14 %	5.28 %	13.58 %
23.	Lepus nigricollis	70 %	65.38 %	74.89 %
24.	Melursus ursinus	61.5 %	49.51 %	26.33 %
25.	Sus scrofa	73 %	74.03 %	81.89 %
26.	Manis crassicaudata	26.5 %	32.21 %	27.16 %
27.	Hyaena hyaena	1.5 %	1.92 %	2.46 %
28.	Lutra perspicillata	0 %	0 %	1.23 %
29.	Boselaphus tragocamelus	0 %	0.48 %	0 %
30.	Bos Gaurus	64.5 %	37.98 %	19.75 %

is based on the presence of the animals in the vicinity of the 24 villages in the different zones. It is revealed from the analysis that tiger and marbled cat were more restricted to zone A. Whereas Panther, Jungle Cat had somewhat uniform distribution in all the three zones which might reflect on their adaptive behaviour. The leopard cat on the contrary was found more in C zone as compared to other carnivores. Similarly common Palm Civet was more in jungle as wel as plantations around villages as contrast to the small Indian Civet which was not as abundant but little more in the zone B. Similarly both the species of mongoose were found in the forest as well as near human settlement i.e. zone A & C. Jackal was almost uniformly distributed in all the three zones but Indian fox was found more in the degraded area i.e. zone C. Wild dog population was restricted to the forest belt in the zone A, like other species i.e. Sambar, Chital, Giant Squirrel, Bear and Gaur. Barking deer had interestingly even distribution in all the three zones. The same pattern was followed by little less common mouse deer. Porcupine, Hare, Wildpig had much uniform distribution in all the three zones. Hyna, Otter and Nilgai which are rare in the sanctuary show typical pattern. Hyna is found in the more drier parts when other is found in zone C near the main boy of the reservoir. Nilgai is very rare and is reported from zone B.

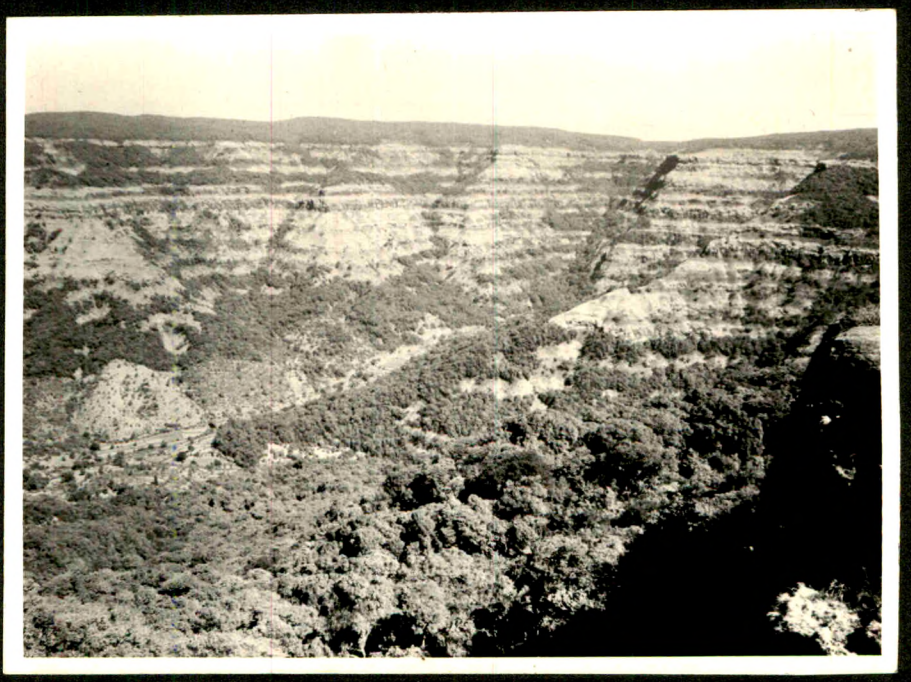

Plate 1 a. Natural vegetation in the Western Ghats, sub-tropical evergreen & semi evergreen forest.

b. Steep slopes considered as non cultivable wasteland. Notice shifting cultivation in the valley.

Plate 2 a. Culturable waste land, mainly open grass lands on plateau.

b. Cultivated land on hill slopes & terraces.

Plate 3 a. Gaur, Bos gaurus, the largest herbivor in the region.

b. Chital, Axis axis, now rare in the area.

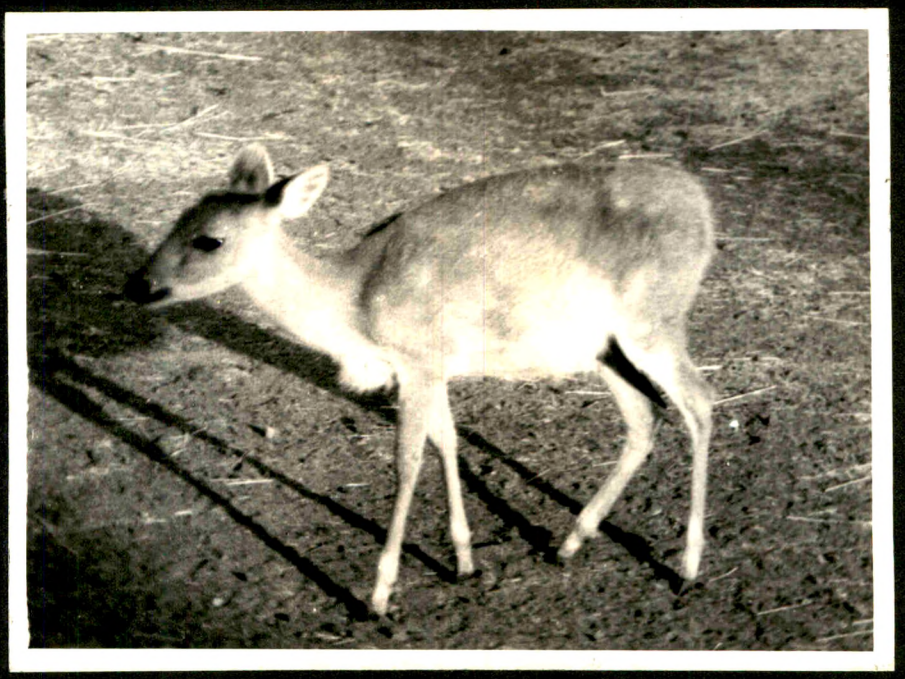

Plate 4 a. Peafowl, Pavo cristatus .

b. Barking deer, Muntiacus muntjak
the highly poached animal in the area.

Plate 5 a. Common Langur, Presbytis entellus.

b. Bonnet Monkey, Macaca radiata.

Plate 6 a. Natural thick vegetation in the background, clear felling at the centre.

b. Badly degraded barren hill slopes in the area.

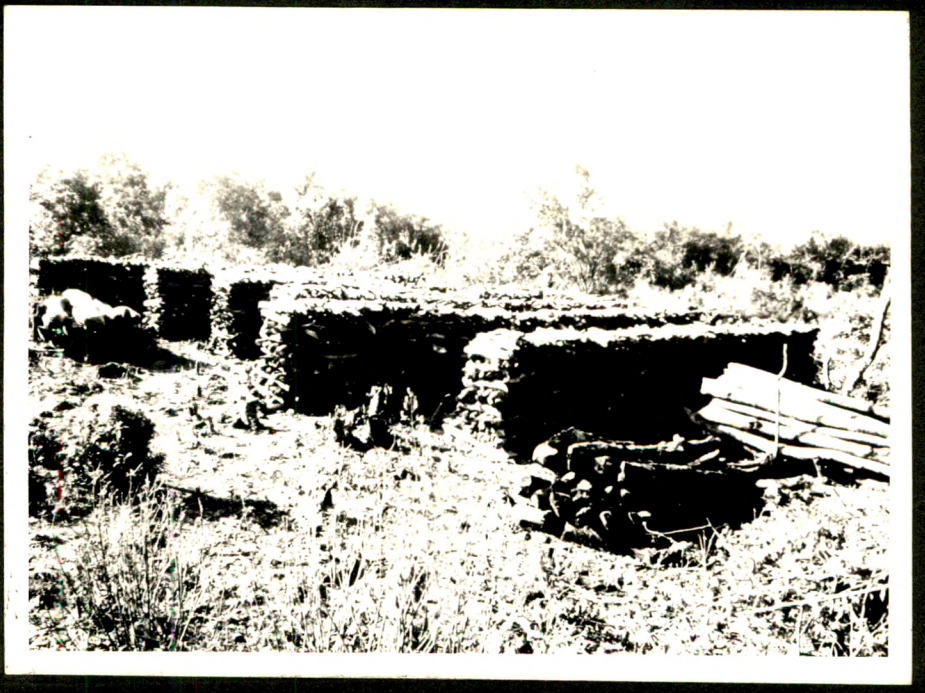

Plate 7 a. Large scale tree cutting of prime forest, notice tall trees at the background.

b. Illicitly cut trees waiting for transport.

Plate 8 a. Daily fuelwood requirments carried by a household, notice women.

b. Collection of fuelwood, monsoon storage by households in the study area.

Plate 9 a. Shifting cultivation practices on the steep hill slopes.

b. Shifting cultivation, encroachment in thick forest. Notice exposed rock.

Plate 10 a. Millet cultivation, the major crop of the study area.

b. Storage of the crop on poles to protect it from the pest.

Plate 11 a. Buffaloes in the clearing in the forest.

b. Cattle herd in the semi degraded habitat.

Plate 12 a. Goats in the degraded habitat.

b. Totally degraded habitat on hill top. See exposed rocks, tree stumps and reservoir in the background.

Plate 13 a. Land slides and road damage on way to Nivale

b. Erosion by the newly constructed road to Tanali.

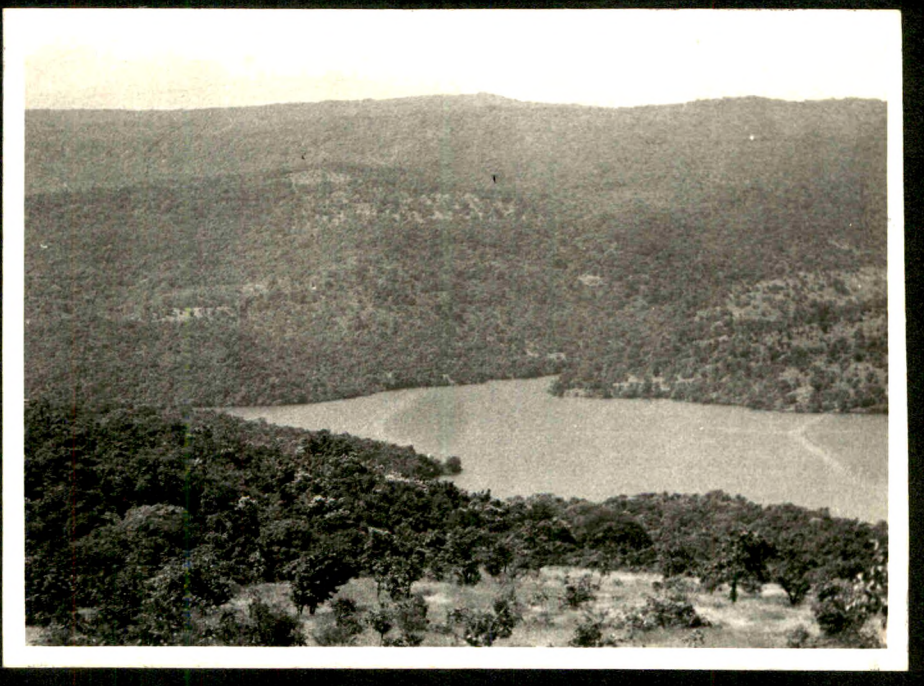

plate 14 a. The road construction in the forest area, the inevitable destruction of rare forest wealth on the hill tops.

b. The rapidly degrading catchment of the reservoir.

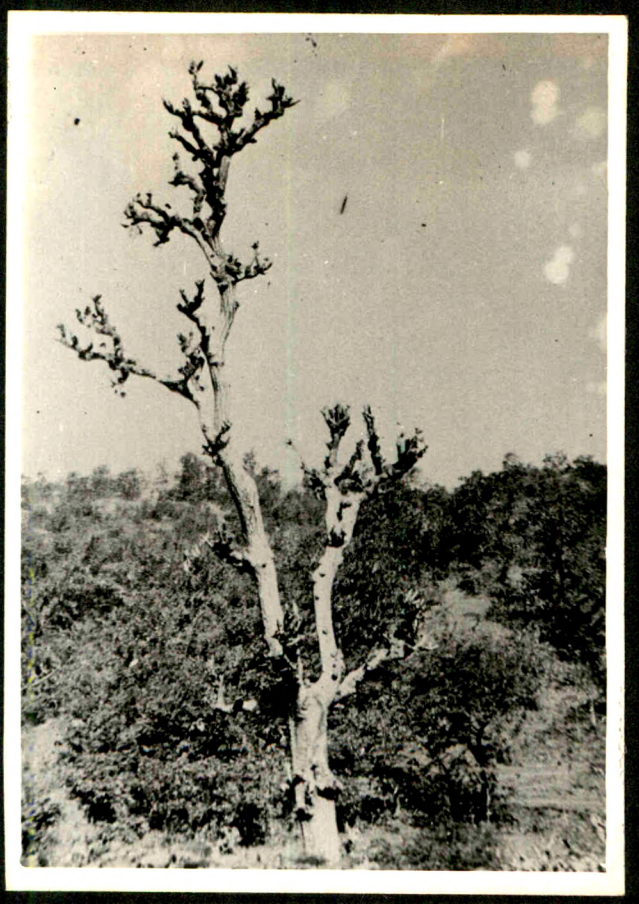

Plate 15 The human impact on the sensetive forest ecosystem in the study area.
a. Tree in the catchment.
b. Tree in the submergence.