KARNATAKA FOREST DEPARTMENT
Wildlife Wing

DRAFT MANAGEMENT PLAN

OF

RANEBENNUR BLACKBUCK SANCTUARY

FROM 2010–11 TO 2014–15

H. Gopal Singh
Assistant Conservator of Forests,
Wild life Sub Division,
Ranebennur.

ACKNOWLEDGEMENTS

This Management Plan for Ranebennur Black Buck Sanctuary along with recovery plan for The Great Indian Bustard habitat is prepared for the period of five years from 2010-2011 to 2014-2015. Details of various proposals were discussed with the Range Forest Officer and concerned staff. And finalised as per the guidelines of Sri. B. K. Singh, IFS, Chief Wildlife Warden and Principal Chief Conservator of Forests (Wildlife), Bangalore and Sri. Mahesh B. Shirur, IFS, Conservator of Forests, Dharwad Circle, Dharwad.

Place: Ranebennur
Date: 02-02-2011.

(H. Gopal Singh)
Assistant Conservator of Forests,
Wildlife Sub Division, Ranebennur.

Introduction:-

A wildlife sanctuary is a place where wildlife can be protected by developing habitat and enforcing law against destroyers. Sanctuary is one of the means of In-situ conservation of wildlife.

Ranebennur Black Buck Sanctuary is situated towards north-east of Poona – Bangalore national highway No. 4 at Ranebennur. It is 4 Kms. North-east of Ranebennur. It spreads in the forest ranges of Ranebennur, Byadgi and Haveri of Haveri forest division in Haveri district. It is situated between 14º-34'-00" to 14º-46'-00" latitude North and between 75º-30'-08" to 75º-47'-21" longitude East. The elevation of the area varies from 531M to 762M above MSL Average rainfall is 600-620 mm and Temperature varies from 25º C in winter, to 40º C in the summer. March-April are the hotest months. The sanctuary is declared vide Government of Karnataka Notification No. AFD-58-PWL-74 dtd 17-6-1974 with an area of 119 Sq Km.

It consists of three blocks, out of these, Hunsikatti and Hullathi blocks form a contiguous blocks while Alalgeri forms another contigious block separated each other by 15Km gap. An area of 14.87 Sq. Kms in Hullathi Block has been notified as 'CORE - AREA' on 21-10-1982. The original Forests of this area were classified as "southern – thorn forest" as per Champion and seth's classification. Since the area were coming under Tungabhadra River Valley project, massive afforestation of barren hillocks was taken up since 1956. The afforesteration programme mainly consists of planting of exotic species like Eucalyptus. Due to intensive management and protection of the area, resulted increase in Black Buck population year after year. It is estimated nearly 6700 Black Bucks in the area during 2006 census.

The Ranebennur Black Buck Sanctuary mainly concerned for Black Buck and Great Indian Bustards. The Great Indian Bustards are not sighting since 1998 due to habitat loss. The other fauna found in the sanctuary are Jackal, Fox, Wolves, wild Pigs, Porcupine, Hares etc., and many other birds. "Great care should be taken to re introduce and re-habilitate the Great Indian Bustard".

Black Bucks are characteristic of living in groups. This antelope is found only in Indian Sub-Continent is essentially an animal of the open scrub forest of Plains. This formerly wide spread species has been decimated all over its range in the country due to habit destruction and over hunting. It is now limited to a few areas, like parts of Rajasthan and Gujarath where it is protected by religious sentiments. In south India Ranebennur is one of the few areas continuing a viable population of this handsome antelope.

Black-Buck is the handsome of all-Asiatic antelopes and members of Bovidae family. It' s preferences for the open country and its punchant for crop raiding brought it in direct contact and conflict with human, No wild angulate in the Sub-Continent has suffered so drastic decline through hunting pressure. Today it is one of the isolated and threatened animal in this Sub-Continent andit has become extinct in Bangladesh and Pakistan.

Ranebennur Sanctuary has the distinction of harboring the Great Indian Bustard which is considered to be one of the rare birds in the world. The population of this bird is confined to Rajastan, Gujarat, Maharastra, Andra Pradesh and Karnataka, In Karnataka it is known as " ERALADDU" in Northern part and " DOORSVAYANA HAKKI" in southern part. Males are bigger than females and generally found in pairs. It is a very graceful bird found in grassy plains and grain crop filds. It feeds on insects and grains, there were about 2-3 Great Indian Bustards in the Sanctuary and are not sighting nowadays.

The original forests of this area were classified as southern thorn Forests (Champion and Sheth's classification (GA / CI) In these forests tree cover usually consisted of Acacia arabica, Acacia latronum, Acacia leucophloea, Hardwickia binata, Albizzia amara etc., The tree growth is usually stunted. The ground cover consist species like Dodonia viscosa, Cassia articulata, Carissa carandas, Lanatana camara, etc., There are also grasses of Cenchrus sp. and Stylozanthus sp.This native thorn forest has almost disappeared due to cattle grazing and hacking parallelly.

From 1956 onwards, afforestation works taken place with fast growing species like Euclyptus, Large extent of Eucalyptus Plantations were grown over entire area at wider escapement with intensive management by Forest Department. The afforestation work carried out by the Department has established Eucalyptus hybird as the dominant tree species. Some of the other species used in afforestation are Santalum album, Albizzia lebbek, Cassia Spp., Acacia Spp., Prosopis Juliflora, Leucaena Sp. Etc. However, primarily the sanctuary is covered by Eucalyptus hybrid plantations with a ground cover of fairly good grass become good habitat for Black Bucks. The Productivity of these lands as well as surrounding to the sanctuary are very low due to poor quality of soil and fertility. The people living around the sanctuary are very poor with small land holdings, people depend on agriculture, grow rainfed crops like Jowar, Bajra, millets which are low commercial value lead to poverty among large population. There are no perinieal water sources for better agriculture, few farmers have the water facilities by sinking bore wells for irrigation purpose. The water table is very low, over all the socio economic condition of the people living around the sanctuary is very poor. Most of the villagers are depended on forests for small timber, firewood and cattle grazing in their vicinity.

Present and immediate need is to gain the confidence of the local people by involving them in wildlife conservation activities, and slowly they can be educated to understand the importance of wildlife. Their co-operation is very much required to provide social fencing which will protect the sanctuary in many folds than to antagonise them. Otherwise any attempt to develop it, will be a futile exercise in the long run.

There is ample scope to develop the Ranebennur Black Buck Sanctuary. It is already an important place of Tourist attraction in the Northern part of Karnataka. The management plan for the sanctuary had been written for a period of five years from 2005 to 2010 to maintain scientifically with prescriptions for habitat development, Eco tourism and Eco-development.

Objectives:-

a. Ranebennur Black Buck Sanctuary is a beautiful piece of Nature harboring mainly Black Bucks and other numerous fauna, avifauna including Great Indian Bustards and flora with distinct ecological features. Hence the prime objective is to protect this treasure to the fullest extent possible so that the fauna and avifauna inhabiting the area are adequately protected and propagated.
b. Restore the Degraded portions of the sanctuary through habitat improvement.
c. To create awareness among the people about the need to protect the nature in general and the sanctuary in particular.
d. Black-Bucks and wild eigs are regularly invade and destroy the agricultural crops of the field around the sanctuary, resulting in human-animal conflicts. It is important to prevent such conflicts by developing artificial feeding grounds (fodder plots) in the sanctuary in other Government waste lands and in agricultural farms around the sanctuary with crops like Hurule, Navani, Shavi, Bajra, Hemata Scabra etc.., can be grown periodically in such artificial feeding grounds.
e. To maintain and develop to the extent possible Tourism for recreation, education and scientific exploration.
f. The major portion of the sanctuary area is covered by Eucalyptus hybrid which is of no use as far as fodder requirement of Black-Buck is concerned and hence it is proposed to gradually replace Eucalyptus by fruit and fodder species like Ficus, anjan. Hunse, Tamarind, Neraleet.

PART – I

CHAPTER – I

Introduction to the area:

1.1 <u>Name, location, constitution and extent:</u>

It is situated between 14^0 33' 00" to 14^0 46' 00" North latitude and between 75^0 30' 08" to 75^0 47' 21" Longitude East. The area of the Sanctuary is 119 Sq. Kms (30464 acres). It is spread over in three blocks, Hunsikatti, Hullathi and Alalgeri. Out of this Hunsikatti and Hullathi blocks from a contiguous block while Alalgeri is a separate one. An area of 14.87 Sq. Kms in Hullathi Block has been notified as 'CORE AREA' on 21-10-1982.

The average rainfall ranges from 600 to 620 mm, the rainy season being from June to September. The sanctuary is constituted as per Government of Karnataka Notification No. AFD-58-PWL-74 dtd 17-6-1974 with total area of 119 Sq Km. (Copy enclosed as per Annexure)

The details of Forest Area Survey No. wise is shown in Annexure.

1.2 Approach and access:

The sanctuary is well connected to important cities like Bangalore, Belgaum and Hubli by road, railway and airways.

1.2.a. By Road:-

The sanctuary is having a well connected road networks and placed on side of NH-4 from Bangalore to Pune and of distance (a) from Bangalore – 300 KM
(b) from Belgaum – 200 KM
(c) from Hubli – 100 KM

1.2.b. By Railways:-

Ranebennur is situated in between Davanagere and Haveri on Bangalore Junction to Hubli Junction, railway line.

1.2.b. By Airways:-

Ranebennur is connected to Bangalore Airport by road of a distance 335 KM and to Hubli Airport by road of a distance 210 KM.

1.2.1 Statement of significance: The Ranebennur Black Buck Sanctuary home for of Black Buck and Great Indian Bustards. Great Indian Bustards are not seen nowadays due to habitat loss. The other fauna found in the sanctuary are Hyena, Jackal, Fox, Wolves, wild Pigs, Common Sand grouse etc., and many other birds.

1.2.2 Biodiversity value: The Sanctuary is having varieties of fauna, avifauna and flora. Among them Black Bucks which are threatened species and Great Indian Bustard birds are becoming rare species and extinction at the verge of present in this sanctuary which are listed as schedule I animals. The list is shown in Annexure.

1.2.3 Catchment area: The Sanctuary is a very good catchment area to TungaBhadra river. The elevation of this sanctuary varies from 531 M to 762 M.

1.2.4 Recreational value: The sanctuary is surrounded by many religious places famous for Sri. Malatesh Temple, Devaragudda, Sri. Mylaralingeshwara temple, Myalara, Sri. Karibasaveshwara temple, Ukkadagatri, Sri. Kantesh temple, Kadaramandalagi. It is

very beautiful to watch the scenery of the forests during June to November/December, bird watching for bird watchers.

1.2.5 Research value: Great Indian Bustard is being a rare bird there is lot to explore for the conservation of it.

1.2.6 Educational value: Wildlife is the last priority for human beings it is very essential to create awareness among them about the conservation of wildlife and its conservation for the future generation.

Since, Black Bucks existing in this sanctuary, Black Bucks in threatened species. This sanctuary is home of these species. We ought to protect them there by protecting entire biodiversity in the sanctuary.

CHAPTER – II

Background information and attributes

2.1 Boundaries :

The Governemnt of Karnataka vide notification No. AFD-58-PWL 74 dtd 17-6-1974 declared the sanctuary with its Boundaries as follows and the Black-Buck sanctuary area comprises of three major blocks viz

1. Alalgere Block
2. Hullathi Block
3. Hunsikatti Block

Alalgeri Block:-

East: Thence the line runs south passes along the western boundary of the village Yellapur, Hanumapur and touches the point at Nukapur where the line concerned.

West : Starting at the point when a stream touches at Nukapur village Arabgonda the line runs south along the eastern boundary of the village, Arabgonda, Alalgeri and Motebennur touching the North-Western corner of 1990 plantation and runs round touching western boundary of plantation of 1960, 1969 and south-western corner of 1959 plantation.

North: Starting at a point when and stream touches at Nukapur village the line runs towards West and towards the village bound ary of Aerbgonda.

South : The line passes along the southern boundary of 1957 and 1958 plantations and passes along the Eastern boundary of the same plantation and along the Eastern boundary of 1957, 1959 plantation upto the point it touches the N.H.R and road forms the boundary and turns east and passes along the southern boundary of 1960-61 and 67 plantations and touches streams and boundary of Budapanhalli village up to the point it touches 1961 plantations and touches the South-Western corner of Yellapur village boundary

HULLATHI AND HUNSIKATTI BLOCKS

North – Ata point the line intersects the Hirehalla on the North Eastern corner, the line runs south along the western boundary of the village limits of the Ankalapur , Medleri, Ravathankatte upto the point it touches the Northern corner of 1968 plantation and runs along the Northern limits 1960, 1959, plantations and then along the eastern boundary of the 1959, 1960,1963 plantations and runs East along the Northern boundary of 1963 plantation and at the North-Eastern blocks V the line runs and passes along the boundary Kahadeyayanahalli

South – Hence the line runs North along the Eastern limit of Hullatti upto the point it touches Hullathi stream and it passes along the casters village limits of Gangayama, Bevenahalli, Maidur and touches the starting point of the North boundary.

The details of Range, section and beat boundaries map is enclosed as per Annexure No.

2.2 Geology:

The soil structure is described as “Gneisses” “Shisty” and” Granite” of archean era and Deccan trap rocks of teriary era (Jagadish Chandra-1974) The soil is generally poor and degraded condition, particularly on the hillocks. The soil is however comparatively richer in the valleys, supports only scrub thorny species (which are resistant for drought) in green patches wherever moisture is abundant in valleies.

2.3 Terrain –

The sanctuary is on the Deccan plateau with an average altitude of 610 meters It is ribbed with chains of hillocks running north to south and about 150 meters higher than the plains. Black Bucks prefers only plain tracts and found in entire sanctuary.

2.4 Climate :-

2.4.1 Rainfall pattern and distribution: Mean annual rainfall is 624.4 mm. The sanctuary is exposed to torrential thunder showers starting from May-June and some during October with moderately heavy showers in June, July and August.

The following chart indicates the rainfall details from 1985 to 2004 recorded at Ranebennur and Byadagi nearby.

Sl No	Year	Rainfall in mm recorded at Byadgi	Rainfall in mm recorded at Ranebennur
1.	1986	618.0	474.5
2.	1987	662.1	709.5
3.	1988	560.7	583.3
4.	1989	482.2	463.1
5.	1990	335.9	324.0
6.	1991	977.4	645.8
7.	1992	1152.5	962.0
8.	1993	838.1	785.7
9.	1994	747.8	639.7
10.	1995	492.8	341.9
11.	1996	988.10	575.9
12.	1997	898.10	698.10
13.	1998	1010.5	786.5
14.	1999	1020.10	687.10
15.	2000	220.2	757.9
16.	2001	510.9	467.6
17.	2002	599.0	567.6
18.	2003	210.0	230.0
19.	2004	480.0	430.0

The climate is governed mainly by the South-West monsoon and the year can be divided into three seasons, the rainy, cold and hot seasons. The limits of these do not vary greatly from year to year and may be taken as middle of June to middle of October, middle of October to middle of February and March to middle of June respectively.

2.4.2 Temperature; a summary of year round pattern

The Climate in general is dry with minimum and maximum temperatures of about 20º C in winter and 40º C in summer respectively.

2.4.3 Humidity–

Weather is humid in rainy season and winter season, but dry in summer season.

2.4.4 Wind:-

The two monsoon winds that influence on this sanctuary are

1) The South – westerly wind (SWW) between June and September
2) The North-Easterly wind (New) between September and December. The wind speed is normal in these two wind seasons.

2.4.5 Drought, and its periodicity:– It is very common in these areas due to low rainfall.

Six to three consecutive years back sever drought had prevailed in this area, and water table has gone too low and there was in acute shortage of water sources. This year the rainfall is moderate and not experienced the acute draught condition.

2.5 Water sources:

There are many nallahs, streams and ponds within the sanctuary, which are all seasonal flow and dry up immediately after rainy season. Pickup dams, small earth fill dams and tanks have been constructed in the sanctuary as a measure of water and soil conservation works generally water stored in these dams and tanks during rainy season available to the animals upto winter season. During summer season water will be augmented through artificial (concrete) water holes, have been constructed throughout the sanctuary and these are filled up with water periodically by vehicle.

Water Management:-

All the nallas and tanks in the sanctuary dry up as early as February or March every year. Improvement of water sources of the sanctuary is one of the vital factors which supports the fauna. At present there are four pickup dams which were constructed to conserve water. Varieties of birds too are attracted by these pick dams. Soil and water conservation measures undertaken so far are inadequate.

Hence more soil and water conservation measures are absolutely necessary. Works like gulley plugging, rubble checks, Nalabunds, vegetative gulley checks, construction of series of check dams, construction of pickup dams, artificial water holes are to be taken up in a phased and systematic manner. Check dams will help in reducing water force, and in increasing in-situ infiltration of water, thereby sub-soil water will be recharges and nallas will become perennial. This matter has to be given top priority.

2.6 Range of wildlife, status distribution and habitat:

2.6.1 Vegetation - The original forests of this area were classified as Southern thorn Forests (Champion’s classification GA / CI) In these forests tree cover usually consisted of Acacia arabica, Acacia latronum, Acacia leucophloea, Hardwickia binata, Albizzia amara , Cassia

pistula Acacia nilotica Azadirecta indica etc., The tree growth is usually stunted due to poor soil quality.

The ground cover has species like *Dodonia viscosa, Casia articulata, Carissa carandas, Lanatana Camara,* etc., There are also grasses of spin like cenchrus sp. And stylozanthus sp. are present.

However this native thorn forest has almost disappeared due to Biotic pressures for grazing and firewood in past. The afforestation work carried out by the Forest Department has established Eucalyptus hybird as the dominant tree species. Some of the other species used in afforestation are *Sanlatum album,* Albizzia lebbek, Cassia, Acacia, Prosopis juli-flora, Leucaena Etc. However, primarily the sanctuary is covered by Eucalyptus hybrid plantations with a ground cover of fairly good grass. There are also some grassy blanks where eucalyptus has not been planted Due to tremendous biotic influences the Eucalyptus plantations are very open with large gaps which are now being planted up with fruit and fodder species like *Ficus, Vilaiti Tamarindus Indica, Neral, Leucaena Leucocephala* etc., with wider spacing. Fodder plots of Horesegram, Bajra, Jowar, Millets, Hemata etc., are also being raised to supplement the fodder requirements. This area is surrounded by vast agricultural fields growing crops like maize, cotton, millets jawar etc during rainy season. The productivity of these lands in extremely poor and the tree cover is practically absent

The common flora species found in the sanctuary are shown in Annexure- IX.

2.6.1.2 The forest types, cover and food for wild animals:-

The Original Forest of this area were classified as southern thorn forest. In this forest tree cover is very less and of stunted growth, only thorny bushes and artificially planted Eucalyptus, Neem , Jali, and other fruit plants etc.,existing in these forests. The grasses of cenchrus sp. And stylozanthus sp. are the ground cover.

Cenchrus sp of grass and tender leaves of Acacia Sundra, pods of Juliflora are main fodder for Black Bucks and in rainy season fodder plots of horsegram, Bajra, Jawar, Millets, Hemata etc., are raised to control agricultural crop raiding by Black Bucks.

The main food of Great Indian Bustard is grain and shoots of various crops locust beetles, Centipedes, Lizards, etc., in the forest and agricultural fields.

More than hundred varieties of birds are seen in the sanctuary and those will feed on ficus sps. fruits, and fruit bearing shrubs, insects, nectar from flowers of the trees.

2.6.1.2 Fauna and Avifauna Vertebrates, their status, distribution and habitats

Fauna: This sanctuary is mainly a sanctuary of Black-Bucks it is also known for harboring the Great Indian Bustards. The other fauna found in the sanctuary are Fox, Wolves, wild Boar, porcnepine, Hare etc as shown in Annexure- X.

Avi fauna : Variety of birds are also seen in the sanctuary among them most commonly seen are cattle egret, pond Heron, king Vulture Kites, Shrike, Hawk, Grey Partridge, Grey Quail, Common peafowl, Red wattle Lapwing, Blue rock pigeon, Ring Dove, Parakeet, Koel, Crow Pheasant, Swifts, Hoopoe, small green Bee-eater, white Breasted King fisher, Grey Hornbill etc.., as shown in Annexure- XI

Apart from fauna and avifauna sanctuary supports variety of snakes both of verniours and Non- verniours snake. The commonly observed snakes are green snakes, vipers, Rat snakes, Cobras, pythons etc.,

Chapter - III
History of Management and Present practices

3.1 General:

The Original forests of this area were classified as Southern thorn forests (Champions and Sheath's) classification GA/CI) the entire sanctuary area of 119 sq. Kms is Reserve forest and is free from human habitats inside. It is surrounded by agricultural fields and as many as 50 villages on the periphery. From 1956 onwards extensive afforestation works taken up with Eucalyptus as a main species, the objective of afforestation then was to cover the degraded areas by vegetative.

The Ranebennur Black Buck Sanctuary area ecosystem is basically a hostile environment to vegetation and wildlife, because of its extreme temperature poor rainfall and soil. In addition, and as a consequence, the socio economic condition of the villagers of the entire trac can be described as extremely backward. Bulk of the population consists of

Kurubas (shephards) and Lambanis (tribals), sheep rearing is the main occupation of Kurubas community. The land use is based on extremely old, unscientific methods and has lost its original ecological relevance resulting in severe degradation of the ecosystem.

The Ranebennur Black Buck Sanctuary is the only forest area available to meet the diverse needs of the local population of more than One lakh in Ranebennur town and other villages.

In the villages around the sanctuary there are about One lakh sheeps, Sixteen thousand goats and Thirty thousand cattle (cows and buffaloes) which depend mainly on the sanctuary for grazing. All of them use the sanctuary for grazing for about six and more months during June-December period, which is also the period when vegetation has to rejunivate and establish.

About ninety percent of the sheep grazing pastorals migrate (maland region) from December every year and return in the first week of June on the onset of monsoon to cultivate agricultural lands that they own. During this period the sanctuary takes the grazing load of the remaining sheep, goats and cattle.

Due to the severity of this grazing pressure, the native vegetation cover is practically existent. Among the various other species planted by Forest Department in their afforestation programmes, only Eucalyptus hybrid seems to have established itself. Only in an area near Rautankatti, where the grazing pressure seems less, some of the original tree cover can be seen. From the magnitude of the grazing activity, it is clear that physical prevention of grazing would be virtually impossible to enforce, except in limited areas (as is being done in freshly afforested patches and core area)

Present and immediate action need to gain the confidence of the local people by involving them actively in wildlife conservation activities, and slowly they can be educated to understand the very purpose of creation of this sanctuary. Their co-operation is very much essential to provide social fencing which will protect the sanctuary manifolds than to antagonize them, otherwise any attempt is a exercise in this regard.

To go hand in hand with local public some of the Eco-Friendly programes like providing *Astra valas (Smoke less chullas), Gobar gas plant, Solar lighting system to community, Conducting immunization camps and Health camps*, Water ponds in buffer zone, Providing bus shelters, Community hall, Educating them by showing films of wildlife and its importance, the Eco-system and Bio-logical imbalance effect and decrease in rain fall over the years due to deforestation enlightened through films and video clippings etc.,

3.2 Timber operations including bamboo & firewood harvest:

In Hunsikatti and Hullathi blocks number of eucalyptus plantation have been raised but stocking is very poor. Where as in Alalageri KFDC has raised good plantation long back and recently. The same plantations with good stock are handed over to wildlife wing Ranebennur.

As black buck prefers open area, slowly stage by stage Eucalyptus plantations have to be extracted and stumps have to be uprooted. This habitat is also suitable for Great Indian Bustard but eucalyptus plantations have become hindrance to its conservation and habitat development.

3.2.1 Silvicultural systems and tending operations:

In Ranebennur Black-Buck Sanctuary there are no timber yielding trees like Teak, Honne, Matti, etc..,. But some artificial eucalyptus plantations and naturally grown species like Khair, Tugly, Anjan, Carissa auriculata stockings are there. However to improve the habitat eucalyptus plantations have to be extracted as per Silvicultural practices. The local demand of firewood and small timber can meet through harvests of eucalyptus plantation.

3.2.2 Evenaged systems and unevenaged system: As Black Buck is a herbivorous in the sanctuary, the only competitor is the sheep which will depend on the same area for a period of six months. This lead to human animal conflict for grazing purpose. This has to be sorted out by providing a buffer zone with regulated / restricted grazing and encouraging the fringe villagers with stall feeding by raising fodder farms around the sanctuary.

3.2.3 Bamboo working: This sanctuary do not have naturally grown bamboo hence this question does not arise.

3.2.4 Firewood harvest and collection: This is being the sanctuary fire wood extraction or collection will not be carried out. However old eucalyptus plantations are exists in the sanctuary could be extracted in phased manner i.e., 10 Ha at a time.

3.3 Non wood forest produces (NWP) collection:

There are no valuable NWP and its collection and distribution in this sanctuary is exists.

3.4 Leases: None of the Forest land is granted on lease basis for non forestry purpose.

3.5 other programmes and activities:

No other programmes and activities found in the protected area except tourism developmental activities.

3.6 Forest Protection

3.6.1 Legal status: An area of 119 Sq. Kms was declared as Ranebennur Black-Buck sanctuary vide Government Notification No. AFD/58/FL/74 dtd 17-6-1974. The sanctuary comprises of three taluks of Haveri District i.e. Ranebennur, Byadagi and Haveri taluka this sanctuary comes under the preview of Karnataka Forest Act 1963 and Rules 1969 and the wildlife (protection) Act 1972. The whole area of the sanctuary is Reserved forest and

settlement of rights and privileges under the provision of wildlife (protection) Act, 1972 is still pending i.e. the sanctuary is to be finally notified as per the Sec 26 (a)s of the said Act.

3.6.2 Hunting:

In olden days people used to hunt wild boars which destroy their crops in and around the sanctuary. Now after declaring this area as sanctuary hunting is totally prohibited.

3.6.3 Illegal activities:

3.6.3.1 Poaching: Black Buck, wild boar, Rabit, and other small animals were poached in olden days. Now after declaring this area as sanctuary hunting is totally prohibited.

3.6.3.2 Illegal cutting of tress: There are instances of illicit felling of trees like eucalyptus, Acacia chundra for firewood and small timber by the villagers around the sanctuary. To control the illicit felling regular patrolling of front line staff round the clock is deployed and brought under control.

3.6.3.3 Encroachment & other illegal activities :

After formation of the Ranebennur Black Buck Sanctuary, since 1974, there are no cases of encroachment. Action has been initiated to control future encroachment by consolidation of the boundary some part of the sanctuary area is still being recorded as "Revenue pasture" in revenue records this has been enlightened to Revenue Authorities to update the records as Reserve Forest.

3.6.4 Domestic livestock grazing:

The socio economic condition of the surrounding villagers of the entire tract can be described as extremely backward. Bulk of the population consist of Kurbas (Shepherds) and lambani's (Tribals) community. The main occupation is agriculture and animal husbandry. The land use is based on extremely old and un scientific manner and has lost it's original ecological relevance resulting in severe de gradation of the eco system. In the villages around the sanctuary, there are about Eighty-five thousands sheeps, Twenty thousands goats and Thirty thousands other cattle which depend mainly on the sanctuary for grazing. Above 90 % of the sheep graziers migrate to Malnad region during December every year and return in the Ist of week June at the onset of monsoon to cultivate agricultural lands that they own. All of them use the sanctuary for grazing about six and half months during the June – December Period. Which is also the period when vegetation has to regenerated and establish. Due to the severity of this grazing pressure, the native vegetational cover is practically non – existent. Only in area near Rahuthankatti where the grazing pressure is less some of the original tree cover can be seen. From the magnitude of the grazing activity it is clear that Physical prevention of grazing would be virtually Impossible to enforce except in limited areas (As is being done in freshly afforested patches and core area) present and immediate action need to gain the confidence of the local people by involving them actively gain fully in

wildlife conservation activities, and slowly they can be educated to understand the very purpose of the creation of this sanctuary. Their co-operation is very essential to provide social fencing which will protect the sanctuary manifolds than to antagonize them. Otherwise, any attempt is a futile exercise in this regard.

3.6.5 Wild fires: Commonly wild fires occurs during summer season from December to May end. This problem is controlled by carrying out fire tracing and fire protection works in and around the sanctuary.

3.6 Tourism :

To some extent at present the sanctuary has been developed as a tourist spot. The sanctuary has an IB with six suits and a nature camp where school children are brought and conduct awareness camps with regard to wildlife conservation in general and about Black Buck and Great Indian Bustard conservation and habitat development in particular besides other flora and fauna. Tented accommodation is also available to facilitate tourists to stay.

There is a lot of scope for further improvement, in view of this an interpretation center, Welcome gate, kinder garden activities, publicity, Landscaping, Illumination, Improvement of existing roads, view line clearing, Construction of viewing towers and other infrastructure activities being taken up.

3.7 Research, monitoring and training:-

3.8.1 Research & Monitoring: There is lot of scope for research regarding The Great Indian Bustard habitat improvement and conservation this has to be taken care by consulting experts.

3.8.2 Training : There are two Categories of training activities

1. Foresters, Forest Guards and Watchers working in field should be given training in wildlife management and legal aspects of law enforcement, periodically to update the amendment of law taken place in this regard.

2. Formal Training: The entire field staff should be trained in training schools thoroughly and in addition fire arms training, maintenance of fire arms and ammunition and its operations and marshal art training are to be given. These training's will improve the field staffs capacity in handling the situation during smuggling, control of poaching, fire combating and law enforcing .

3.9 Wildlife conservation strategies and their evaluation

After the declaration of wildlife sanctuary hunting has been reduced considerably and action has been taken as per wildlife protection act 1972. As a precautionary measure regular patrolling activities will be carried out to control the smuggling and poaching in the sanctuary and out side the sanctuary.

Range Forest Officer has been provided with Vehicle, arms and ammunition for protection work and wireless network provided for better communication.

3.10 Administrative set up:

At present one Range Forest Officer with his head quarter at Gangajal (Ranebennur) with Four foresters and Fourteen Guards and few daily wage labours look after the protection and developmental activities of the sanctuary under the supervision and control of Assistant Conservator of Forests Wildlife Sub-Division, Gangajala, Ranebennur. Existing staff quarters office building are adequate.

3.11 Communication:

Telephone and E-mail facility to the office has been provided to Assistant Conservator of Forests. Static wireless set has been established in Range Forest officer's Office at Ranebennur.

3.12 Summary of threats to wildlife:

Ranebennur Black-Buck Sanctuary area is susceptible for poaching, forest fires, grazing and viral diseases. These threats being attended on top priority. Adequate staff is being required at field level. Time and again two vaccination camps should be conducts in all the villages around the sanctuary.

Chapter IV

The protected area and the interface land use situation

4.1 The existing situation in the zone of influence:

The extent of the Black-Buck sanctuary is 119.00 sqmtr. The entire sanctuary is reserved Forest surrounded by Agricultural fields allaround. The tract is gently undulating with localized conically shaped rising hillocks. It is an open maidan area with no natural protective boundaries like range of hills or Rivers, thus making the area very much susceptible for hunting and poaching. There are number of villages around the sanctuary area close to the boundary of the sanctuary. The soil is generally red mixed with boulders. Small streams flow in the areas which are generally dry during summer.

The fodder resources are not so adequate within the sanctuary area. Hence many of the Black-Buck freely move out in the surrounding agricultural fields for their food.

4.1.1 The location extent, boundaries and natural attributes of the ZI (Zone of Influence) :

The location extent extent, boundaries and natural attributes being narrated in detail in Chapter –I-1.1, Chapter –II 2.1,2.6

4.1.2 Villages inside and outside the PA. Ethnic identities, traditions, customs, relationship between distinct groups of people, relationship with forests.

The entire sanctuary area is free from human habitation inside the sanctuary but surrounded by as many as fifty villages on the periphery. Most of the population of the villages consists of Kurbas, (Shepherds) and lambani (Tribals) other castes their main profession is agricultural, sheep breeding and animal husbandry. Human animal conflict is common with crop raiding by Black Buck and wild boar. Every one depended on forests for fuel wood, grazing. People's harmony with the Forest Department is co-operational.

4.1.3 The state of the people's economy, Vocational landuse, use of forest and non forest natural resources by people and seasonal patterns:

The socio economic conditions: The villagers of the around the sanctuary is very poor. The land use is based on extremely old and unscientific methods and has lost its original ecological relevance resulting in severe degradation in eco system. Due to persisting severe drought water problem is acute for domestic as well as wild animals

4.1.4 Implication of the land use and resource dependency for the conservation of PA :

The land use is based on the extremely old unscientific pattern and has lost its original ecological relevance resulting in severe degradation in eco system. The Ranebennur Black-Buck sanctuary is the only forest area available to meet the desire needs of the local population of more than One lakh in different villages surrounding it.

Chapter V

Objectives:-

1. Conserve entire eco-system to maintain natural demographic process of Great Indian Bustard and other species.
2. Restoration of Great Indian Bustard habitat by removing unwanted weeds, vegetation and eucalyptus plantations and forming grass land field.
3. Reduce human-animal conflicts with grazing problem and crop raiding by black bucks, by creating sufficient fodder plots (both rain fed and irrigated fodder plots)
4. To reduce peoples dependence on the sanctuary.
5. Promote tourism and conservation education.
6. Research promotions.
7. Restoration of black buck habitat (which are in the formers land) and creating congenious to black buck habitat)

Problems:-

Conservation of ecosystem:-

1. The soils are very poor, prone for soil erosion due to less forest canopy i.e., <0.3 density and heavy surface run off. The natural vegetation is shunted with predominant tall eucalyptus trees become an hindrance for conservation of Black Buck and Great Indian Bustard.
2. The loss of habitat for Great Indian Bustard due to increase in agriculture where abundant fallow lands were present earlier and improvement of vegetation inside forest due to good protection provided to sanctuary.
3. Most of the people live on sheep rearing and animal husbandry around the sanctuary are depend on grazing. Crops grown by farmers are damaged by wild animals especially Black Buck and wild boar leads to human-animal conflict for domestic cattle grazing and crop damages by wild animals.
4. The human–animal conflict raises to maximum mainly because of crop damage by the wild boar rather than Black Buck's. As a result of good protection of the area by not allowing for cutting & hacking of shrubs and saplings, the entire area is now covered with Eucalyptus on top canopy and Dodonia viscosa, Auccia Sundra are in middle canopy while the ground level grass is missing. This has become a very good habitat to wild boar, which is very strong in reproduction and with stand the seasonal conditions, more over there is no predators for this wild boar (like big cats) so by this the population is raised abnormally. This type of wild boar population raise, made them to move to the adjacent agricultural lands in all direction of the Protected Area and move in the protected areas even in day time also. At present Government is paying a heavy crop compensation to the farmers, which was otherwise to be used for Protected Area Management. The following is the statement of payment made for crop compensation for last four years in this Sub Division is as follows-,

Sl No	Year	Crop damages		Villages
		No of cases	Amount	
1	2006-07	01	1500.00	Hanmapur,Kalledevar,Budpanhalli, Chatra,Medleri,Rahotankatti,Anksapur,Aremallapur,Hannathi,Yaklaspur,Gangajaltanda,Basalikattitanda, Hunshikattitanda and Alalgeri.
2	2007-08	19	71000.00	
3	2008-09	332	503000.00	
4	2009-10	110	257150.00	

5. Most of the people around the sanctuary depend on forest for fire wood, grazing, small timber which are not meet out from sanctuary due to policy matter.
6. These forests are scrub thorny with limited number of animal species with less significance from the point of view of visitors / tourists.

Chapter VI

Strategies:-

Though a series of measures, most of the objectives set out for the last period management plan are achieved, yet it needs the improvement in achieving the objectives set for this period of management plan.

The wild boar crop damage compensation payment is increasing steadily and becoming a major share holder in the Protection Area Management budget and lot of correspondence and conflict with the public causing break in development works through EDC's.

At this point of stage it may not be a wrong thing if a cullout of wild boar is given a place in management plan. In the interest of Management of the healthy Sanctuary, it is to be consider the wild boar as a vermin in this Sanctuary, because it is not consists with any of the predators (tiger, leopard etc) which can hunt the wild boar.

The cullout of the wild boar may be adopted by the advice of the Chief Wildlife Warden.

Protection to the sanctuary is improved and Poaching or hunting of wild animals has come down as per the records available at range level. Sighting of animals and its population

is increased as noticed in field visits. The herds contain with newborn (Juvenile) calves. To achieve the plan objective the following strategies are necessary.

1. **Boundaries**:- Legal boundaries are mentioned earlier in Chapter-II. The black Bucks are wondering in open place upto 30-50 km away from the Sanctuary. It is noticeable during crop season (June to October).

Zonation:- The Sanctuary is divided into 3 zones.

1. Core Zone:- Part of Hullatti Block.
2. Buffer Zone:- Part of Hullatti Block, entire Blocks of Hunasikatti, Alalageri and Hanumapura Blocks.
3. Tourism Zone: Part of Core Zone.
4. Administrative Zone: Staff colonies, tourist amenities, offices, nature camp etc.,

Zone Plan:-

Core Zone

Since this is unique Sanctuary with same type of vegetation throughout the Sanctuary.

1) Grazing: Most of the people depends for grazing on the sanctuary. Grazing in Sanctuary should be regulated or controlled by way of fixing the grazing areas with limits for all the villages. Most of the areas are open. Prone for soil and water erosions need to take up soil moisture conservation and water conservation by constructing gulley checks. Small nala bands, earthen tanks and check dams. To check the encroachments, digging of CPT and errection of Barbed wire fencing along forest boundary should be taken up.

As the wild animals are damaging the agricultural crops, formers are agitating for their crop damages, which could be met by compensating the losses and making awareness of the conservation of wildlife.

Administrative Zone:- It can put into use for nature conservation education, recreation purposes.

Chapter VII

Tourism, Interpretation and Conservation education

General: It is recognized that unless people from different walks of life should not only see and experience the serenity and beauty of the natural environment in its richness but also to understand the complexity and delicate balance that exists within the biological world and the grand nature of many rare and endangered species such as Black-Bucks, Great Indian Bustard, Hyena, Jackal, Fox, Wolves, wild pig etc., They are unlikely to appreciate the true value of bio-diversity conservation and in turn required their support in preserving it for future generation. Every visitor to the sanctuary becomes a potential friend, supporter and crusader for future conservation and propagator of good work done by the Karnataka Forest Department.

Objectives:-

a. To spread the message regarding the need to preserve all forms of Fauna and flora and rich heritage of our country
b. To educate the people especially those living nearby the sanctuary areas regarding the need to maintain such sanctuary and hereby enlisting their co-operation.
c. To provide wilderness experience to genuine enthusiasts in particular and to the public in general

d. To provide recreation, tourist visit should maximise people's enjoyment and increase visitors' concern for nature conservation.

Problems:

1. Since this sanctuary is known for Black Buck and Great Indian Bustard. Black Bucks are very common everywhere in these area. Local visitors to the sanctuary are almost negligible.
2. Adequate facilities are not there for transportation of visitors.
3. No good sighting spots for recreation and adventure.

The Strategies:

Since this sanctuary is meant for Preservation and Protection of Black Bucks and Great Indian Bustard. It is chosen part of Core area and included in Tourism zone to sight the animals. There are neither big animals nor prey animals. Which cause concern for tourists safety.

The hillocks in Airani, Aremallapura forests keep the treks happy to climb during mornings and evenings during monsoon season. Hence, trekking facilities can be provided to people who treks on their visit to sanctuary.

At present there are no government facilities to the visitors to visit the sanctuary, a motor van with capacity 15 to 18 people could be provided to commute the people from nature camp to sanctuary and back or may tie-up with local transporters to transport the visitors to the sanctuary and back on mutually agreeable conditions.

To attract the local people to visit the sanctuary with nature camp to be upgraded to the local needs by providing recreations facilities such as-,

1. Kinder garden play articles.
2. Interpretation hall with audio-visual facilities.
3. Screening of films on environment conservation.
4. Land scaping.
5. Public utilities.

Chapter – VIII

Eco development

Objectives: There cannot be any development & Protection of the sanctuary without the active cooperation and support of the local people. Many people do not have basic facilities like safe potable water, health service, education, electricity etc.,

Problems:-

People living around are depend on the sanctuary for cattle and sheep grazing. There are no other alternatives because of the land use pattern where the sheepards are back from their migration during agricultural season / monsoon season i.e., June to December. Either it should be allowed by fixing grazing blocks or should be provided in other forest areas nearby in consultation with localities and territorial forest officers.

Also people do depend on forests for their firewood, small timber.

Village cattle and sheep also depend on water holes created for wildlife management inside the sanctuary.

The Strategies:

- Providing alternative energy saving devices such as Astravales, LPG, Gobar gas at subsidiary prices.
- Encouraging people to take up farm forestry planting trees around cultivated lands and near home lets.
- Supply grafts horticultural plants.
- Encourage stall feeding by supplying fodder steps to farmers.
- Trainings in fisiculture, poultry, apiculture etc.,
- Conduction of health camps and Immunization camps in surrounding villages.

Chapter IX

Research Monitoring and Training

Research and monitoring, Training, on the job training, Formal training courses, Establishing a learning Center.

Various aspects of the sanctuary should be studied and monitored continuously. It is desirable to have census of Black-Bucks and other animals once in five years. Ecological changes are too slow and imperceptible. Specialists like animal ecologist botanist, veterinarian, sociologist etc., are necessary to probe. Research has to cover.

- Baseline data on bio-diversity and evolutionary trends.
- Spatial distribution of animals, population dynamics, seasonal migration, animal health and diseases.
- Habitat monitoring check list of food plants, physical and phonological changes in vegetation, quantity and quality of discharges in streams biotic disturbance
- Water monitoring and impact studies
- Sociological research on the local people and the interface between the vegetation, animals and people.
- Researchers may also can take up programmes for capture of Great Indian Bustard species breeding.

It is necessary to involve the people in management to register their co-operation and active support to achieve the objectives of wildlife management. For this purpose following are the programmes suggested.

a. People awareness campaign: Workshops shall be conducted for rural youths as well as for the members of the village committee, elected representatives of local panchayats etc. After training these persons will co-ordinate between authorities and rural public in planning protection works against fire, grazing illicit cutting, poaching and smuggling activities etc., and eco-developmental activities.

b. Nature Education and Workshop to Rural Teachers : Nature education camp for 3-4 days to the school teachers shall be organized and the school teachers of surrounding villages shall be invited so that after training they will be able to convey the information to a number of children.

Chapter 10

Organization and administration, Structure and responsibilities, Staff amenities:

At present One Range Forest officer with his Head quarter at Gangajal Forest Campus in Ranebennur with Four foresters and fourteen Forest Guards and Twelve Forest MRE Watchers look after the protection and developmental activities of the sanctuary under the supervision and control of the Assistant Conservator of Forests wildlife Sub-Division Ranebennur with his head quarter at Gangajal Forest Campus (Ranebennur). Assistant Conservator of Forests, Wildlife Sub Division, Ranebennur, is controlling Bankapur Peacock Reserve and Attiveri Bird Sanctuary, Attiveri.

The sanctioned field staff i.e., Range Forest Officer, Foresters and Forest Guards are quite adequate provided all the vacant places are filled up. Most of the posts are vacant needs immediate attention. Protection watchers are less in number provision to be facilitated for the effective Management. Communication facilities like telephone, wireless mobile sets, Walkie-talkie facility are to be provided. Few staff quarters are required.

Staff children faces difficulties in going to schools without proper transport facilities. It needs to provide transport vehicle which can also use for community tourists on sanctuary visit. Power supply to staff quarters in erratic which are amidst in jungle, can be provided with solar home lighting systems. Sanitary and drinking water facilities to the staff colony should be improved.

Chapter - XI

The budget

11.1 The plan budget

Development of the sanctuary received an impetus after it was declared as a Black-Buck sanctuary area. It is anticipated that adequate budgetary resources will be made available under the five year plan schemes in addition to the normal state and central budget resources. The proposed budget from 2011 to 2015 is furnished in Annexure-VIII.

ANNEURE-I

Statement Showing the works proposed under boundary delineation and demarcation and their financial implication..

Sl No	Particulars	Qty	I	II	III	IV	V
			(Rs in lakhs)				
1	Survey and demarcation						
	a. In between wildlife sanctuary and rest of reserve forest area	40 km	1.00	0.50	-	-	-
	b. Enclosures	LS	-	0.50	-	-	-
2	Fixing of posts along the boundary				-	-	-
	Perihery-155 kms a. No. of stones pillars at 100m apart-1500 Size-145cmx 20 cm x 15cm Rate/stone –Rs. 250/-	1500	3.75				
	b. Painting of stone pillars as per approved design @ Rs. 30 each (Project tiger SSR)	1500	0.45	0.22	-	-	-
	c. Maintenance of sign post	-	-	-	0.40	0.22	0.40
	Total		5.20	1.22	0.40	0.22	0.40

ANNEURE-II

Salaries and wages of staff Asst conservator of Forests Office Establishment.

Sl No	Particulars	Years					
		Nos	I	II	III	IV	V
		(Rs. In lakhs)					
1	Asst. Conservator of Forests	1	2.60	2.86	3.14	3.46	3.80
2	Office superintendent	1	2.16	2.37	2.61	2.87	3.16
3	First Division Asst.	1	1.50	1.65	1.81	1.99	2.90
4	Typist	1	1.00	1.10	1.21	1.33	1.46
5	Peon	1	0.75	0.82	0.90	0.99	1.10
6	Driver (Jeep)	1	1.10	1.21	1.33	1.46	1.61
	Total	**6**	**9.11**	**10.01**	**11.00**	**12.10**	**14.03**

Range Forest Officers office Establishment							
1	Range Forest Officer	1	2.16	2.37	2.61	2.87	3.16
2	Foresters	5	6.25	6.87	7.56	8.31	9.15
3	Forest Guards	14	15.40	16.94	18.63	20.49	22.54
4	Driver (Jeep)	1	1.10	1.21	1.33	1.46	1.61
	Total	**21**	**24.91**	**27.39**	**30.13**	**33.13**	**36.46**

ANNEXURE-III

Statement showing the activities proposed under habitat development plan with year wise financial outlay.

No	Particulars	Year		I Year		II Year		V Year		Year	
		hy	In	hy	In	hy	In	hy	In	hy	In
	Enrichment of degraded areas										
	a. vance pitting.	0	.30	0	.26						
	b. sing plantation.			0	.30	0	.72				
	c. intenance										
	II nd ar					0	.79	0	.50		
	III rd ar							0	.74	0	.40
	d. sing Pbs. 10x16	500	7.50	250	.26						
	Maintence of pbs			500	.08	250	.06				
	Construction of earthen Gullychecks	800 um	.73	500 um	.00	500 um	.50	500 um	.75	500 um	.00
	Desiltin deepening of tanks	000 um	.20	000 um	.90	000 um	.32	000 um	.29	000 um	.96
	Creatio f water holes	2 nos	.60	2 nos	0.56						
	Fodder t development a.Rain (Jun to Nov)	0ha	.85	0ha	.33	0ha	.86	0ha	.44	0ha	.08

	b. gated fodder plot (Dec-to rch)	0ha	5.00	0ha	6.00	00ha	.60	0 ha	.26	0 ha	.98
	Providi saltlicks	S	.50	S	.55	S	.60	S	.66	S	.73
	Creatio f small earthfill dams (Tank)	nos	0.00	nos	2.00						

	Habitat elopment for GIB a. Creation of Bustard plots	0 ha	5.00	5	0	5	5.00				
	b. Maintenance of Bustard plots		.60	1	.50	6	.00	1	.00	1	.70
	c. Laying of pipe line and purchase of sprinkler sets for raising irrigated fodder plots		0.00		.50						
	d. Creation of mounds for birds to display (including collection transportation of mourum)	spots	.00								
	e. Creation of dust bating										

	spots (dry wallows) **f. Creation of shallow water blocks** **g. Chainlink mesh fencing to the area using anglers / stones and a mesh of 2'x2' with 1.8 mtrs height**	**spots** **km**	**.00** **0.00**								
0	**Constr ion of check dams / earth fill n at Malljjigudda sara and t year Deepening the same k**	**no**	**0.00**								**.00**
	Total		**86.28**		**00.24**		**7.45**		**4.64**		**7.85**

ANNEURE- IV

Statement showing activities proposed under tourism Management with year wise financial outlay

No.	Particulars	year		I year		II Year		V year		year	
		hy	in	hy	in	hy	in	hy	in	hy	in
1.	Conducti nature education camp	S	.00	S	.10	S	.21	S	.33	S	.46
2.	Providing rism facilities	S	.00	S	.60	S	.16	S	.22	S	.29
3.	a. Construction of watch towers b. Maintenance of watch towers		.50 .20						.80		.20
4.	a. View line clearance b. Construction Reception of center in the campus c. Construction of wel-come arch gate and watchman shed	0 km	.67 .00 .00	0 km	.13	0 km	.65	0 km	.21	0 km	.83
5.	Construc n of nature interpretation center he campus	S	0.00								
6.	Erection chain link mesh fencing around Gangajala forest campus	S	.00	S	.00	S	.00				

7.	**a. Construction of FDA quarters** **b. Procurement of vehicle for sanctuary visitor and for protection works.**		**.00** **5.00**								
8.	**a. Maintenance of roads** **1. Pre-monsoon** **2. Post-monsoon** **b. Formation of culverts & causeways**	**50 km** **50 km** **nos**	**.80** **.89** **.00**	**50 km** **50 km** **nos**	**.88** **.98** **.50**	**50 km** **50 km**	**.97** **.07**	**50 km** **50 km**	**.07** **.18**	**50 km** **50 km**	**.17** **.30**
9.	**Publicity paganda**										
	a. Printing of Brochers and other publicity materials	**S**	**.50**	**S**	**.65**	**S**	**.81**	**S**	**.00**	**S**	**.10**
	b. Purchase of LCD Projector for interpretation center	**no**	**.60**								
	c. Display boards of birds, fauna for interpretation center	**S**	**.00**								
	d. Purchase of Telescope for bird watching at watch tower for tourists	**no**	**.80**								
	Total Rs,		**6**		**1.84**		**3.87**		**3.81**		**5.35**

ANNEXURE –V

Statement showing activities proposed and year wise financial outlay under Forest Protection.

Sl.No	Particulars	Years					
		Nos	I	II	III	IV	V
		(Rs. In lakhs)					
1	Establishing anti poaching squad for 365 days (June to Dec) Rs.80.20 Per Man/day	1 nos	4.00	5.00	5.50	6.00	7.00
2	Engaging causal labourers for protection of the sanctuary and animal habitat for 365 days Rs. 140.00 Per Man/day	25 nos	12.77	14.05	15.45	17.00	18.70
3	Engaging fire watchers from 1st Jan to May each year 151 days (Rs. 140.00 per man/day)	18 Nos	3.80	4.18	4.60	5.06	5.57
4	Fire line clearance to width of 3.2 mte @ Rs.1828.68/km.	200 kms	3.65	4.01	4.41	4.85	5.34
5	Consolidation of boundaries (Digging of cattle proof trench) 81713.00/ km	10 km / year	8.17	-	-	-	-
	Total		**32.39**	**27.24**	**29.96**	**32.91**	**36.61**

ANNEURE-VI

Statement showing activities proposed and year wise financial outlay under Socio-economic development programmes.

No.	articulars	year		I year		II Year		V year		year	
		hy	in	hy	in	ıy	in	hy	in	hy	in
	iding alternate rgy or fuel saving ices	0	.50	0	.65	0	.81	0	.99	0	.19
	lucting training sions	S	.00	S	.00	S	.00	S	.00	S	.00
	unisation terinary care) to eps,goats and cattle	S	.00	S	.00	S	.00	S	.00	S	.00
	iding drinking water lities in nature camp	S	.50	S	.50	S	.00	S	.00	S	.00
	uring grafted dlings to distribute ong private land ders of surrounding ages of the sanctuary	S	.00	S	.20	S	.50	S	.75	S	.00
	otal		.00		.35		.31		.74		.19

ANNEURE-VII

Statement showing activities proposed and year wise financial outlay under Research works.

No.	Particulars	Year				
			I	II	V	
	Paym to the consultants expert for ir service for specific study gnment on contract basis.	.00	.00	.00	.00	.00
	Total	.00	.00	.00	.00	.00

ANNEURE-VIII

Statement showing the over all financial outlay for the five years period

No.	Particulars	Year					
			I	II	V		otal
	Boundary delineation and marcation	.20	.22	.40	.22	.40	.44
2.	Establishment of budget	4.02	7.40	1.13	5.23	0.49	08.27
3.	Habitat development & Eco-development	86.28	00.24	7.45	4.64	7.85	16.46
4.	Tourism management and development of infrastructure	9.96	1.84	3.87	3.81	5.35	34.83
5.	Forest protection & wildlife protection	2.39	7.24	9.96	2.91	6.61	59.11
6.	Socio-economic development research	.00	.35	.31	.74	.19	2.59
7.	Research	.00	.00	.00	.00	.00	.00
	Grand Total	36.85	97.29	52.12	36.55	50.89	73.70

ABSTRACT	
Ist Year	**Rs, 336.85 Lakhs**
II nd Year	**Rs, 197.29 Lakhs**
III rd Year	Rs, 152.12 Lakhs
Ivth Year	**Rs, 136.55 Lakhs**
Vth Year	**Rs, 150.89 Lakhs**

Annexure- IX

COMMON FLORA OF RANEBENNUR BLACK-BUCKS SANCTUARY

Sl No.	Common Name	Scientific Name
1.	Vidjali, Ottejale	Acacia latronum
2.	Bilijali, Naibela	Acacia leucophloea
3.	Gobbali, karijali	Acacia arabica
4.	Tere khair	Acacia catechu
5.	Austraila Jali	Acacia auruculiformis
6.	Kathale	Agave sislana
7.	Chujjalu, Tagli, Sujjalu	Albizzia amara
8.	Bage, Siris, Kalbage	Albizzia lebbek
9.	Dindiga, Dindal	Anogeissus latifolia
10.	Bevu, Neem	Azadirachta indica
11.	Faravada, Avarike	Cassia auricalata
12.	Sime Thangadi, Hirethangli	Cassia siamea
13.		Capparis divaricata
14.	Kawli, Kabli, Garchinakai	Carrissa carandus
15.		Cenchrurs ciliaris
16.		Cenchrurs cetigerus
17.	Birli gida	Chloroxylon swietenia
18.	Beet, Sissum, Urgalu, Mashiwale, Satin wood	Dalbergia sissoo
19.	Bundurgi, Bandanike, Hangarike	Dodonaea viscasa

20.	Kalli	Euphorbia tirukalli
21.	Neelgiri	Eucalyptus citriadra
22.		Flacourtia sp
23.	Gobra gida	Glericidia sepium
24.	Anjan, Karmara, Karacha	Hardwickia binata
25.	Gorvi, Gurga	Ixora arborea
26.	Lanatana, Chaduranga	Lantana camara
27.	Chandrajali	Leucaena glouba
28.	Subabul	**Leucaena leucocephala**
29.	Arebevu	Melia azardiarch
30.	Bellaryjali	Prosopis juliflora
31.	Srigandha, Gandha chandana	Santalum album
32.		Stylozanthus he,ata
33.		Stylozanthus humilis
34.	Hunase	Tamarindus indica
35.	Bare	Zizyphus jujuba

ANNEXURE – X

LIST OF ANIMALS

Sl.No.	Common Name	Scientific Name
Vertebrals		
1.	Black-Buck	Antelope cervicapra
2.	Wild boar	Sus scrofa
3.	Common mangoose	Herpestes edwardsi
4.	Cobra	Nazanaza
5.	Indian Fox	Vulpes bengalensis

6.	Indian Porcupine	Hystrix indica
7.	Indian Hare	Lepus rigricoltis
8.	Jackal	Caris aureus
Reptiles		
9.	Python	Python molarus
10.	Rat Snake	Ptyas mucosus
11.	Viper	Vipera russellii.
12.	Ython	Python molarus

ANNEXURE – XI

List of Birds :

Sl.No	Common Name	**Scientific Name**
1	2	3
1	Pied crested Cuckoo	Calmator jawbinus
2	Crested Tree Swift	Hemiprocnelongipennis.
3	Common Indian Nightjar.	Caprimulgus asiaticus.
4	White backed vulture	Cyps bengalensis.
5	White Scavenger vulture	Neophron percopterus.
6	Blackwinged kite	Elanus Caeruleus.
7	Common pariah kite.	Milvus migraus.
8	The Brahmini kite	Halistur indus.
9	Grey jungle fowl.	Callus sonneratti.
10	Common peafowl.	Pavo cristatus.
11	Redwattled lapwing.	Vanellus irdicus.
12	Shikra	Accipiter badius.
13	Spotted dove.	Streptopelia ehinasis.

14	Reseringed Parakeet.	Psittacula krameri
15	Koel	Eudynamys scolopacia.
16	Coucal	Centropus Sinenisis.
17	Crimsonbreasted barbed.	Megalaima haamacephala
18	Large green barbed.	M.Zolancia.
19	Barred jungle owlet	Glaucidium radiatum.
20	Hoopoe	Upupa epops.
21	Blue jay (coracias benghaleusis)	
22	Small green Bee-eater	Merops orientalis.
23	Bluetailed Bee-eater	M.Philippinus.
24	Pief King-fisher	Geryle rudis.
25	Small Blue Kingfisher	Alcedo atthis.
26	White breasted kingfisher	Halcyon smyrnensis
27	Common grey hornbill	Tockus birostris.
28	Malabar Pied hornbill	Anthracoceros coronatus.
29	Golden backed Woodpeckder	Dinopium benghalense.
30	Mahratta Wookpecker	Picoides Maharattensis.
31	Yellow wagtail	Motacilla flava
32	White Wagtail	M.Alba

33	Large Pied Wartail	M.Manderasparensis
34	Grey Wagtail	M.Caspica.
35	Crested Bark	Galarida deva.
36	Indian small skylark	Alanda Gulgula
37	Indian Pipit.	Anthus movaeseelandiae.
38	Redrumpted swallow	Hirundo daurica.
39	Wiretailed swallow	Hirundo smithii
40	Common Swallow	Hirundo rustica.
41	Rufousbacked shrike	Lanium schach
42	Black Drongo	Dicrurus adsimilis.
43	Golden Criole	Oriolus Oriolus
44	Besecoloured strling	Sturnus rosesus.
45	Black headed Myna	Sturnus
46	Indian Myna	Acridotheres tristis.
47	Jungle Myna	Acridotheres
48	Jungle Crow	Corvus macrorhynchos
49	House crow	Coruus splendeus.

50	Tree pie	Dendrocitta vagabunda.
51	Greytit	Parus major.]
52	Small minivet	Pericrocotus cinnumomeus.
53	Cold mantled chloropsis	Cworopsis cochinchinensis.
54	Iora	Aegithina tiphia.
55	Rentvented bulbul	Pycnonotus cafer.
56	Redwhiskored bulbul.	Pycnotus jocosus.
57	White spotted fantail flycatcher	Rhipidura albicollis.
58	Whitebrowed fantail flycatcher	R.aureola.D72
59	Paradise flycatcher	Rerpsiphouse paradisi
60	Tickell's Blue flycatcher	Muscicapa tickllíae.
61	Verditer flycatcher	Muscicapa thalassina
62	Ashy wren – warbler	Priuia subflava.
63	Tailor bird	Orthotomus sutorius.
64	Magpie Robin	Copsychussaularis.
65	Shama	Copsychus malabrius
66	Indian Robin	Saxicolodies fulicata.
67	Bushchat	Sacicola caprata.
68	Whitebrowed bulbul	Pycnonotusluteolus.

69	Jungle babbler	Turdodoes striatus.
70	Tickell’s flower pecker	Dicaeum erythrorhynchos.
71	Purplerumped sunbird	Nectarinia Zeyloricia.
72	Purple sunbird	Nectarinia asiatica.
73	Baya weaver bird	Poleeus philippinus.
74	Spotted Munia	Lonchura punctulata
75	White backed munia	L.Striata.
76	House sporrow	Passer domesticus.
77	Indian Pitta	Pitta brachyura.
78	Grey patridge	Francolimus pondicerianus.
79	Common quail	Coturnix coturnix.

Annexure

List of tanks (Constructed)

l No.	Particulars	emarks
1.	Sannabhimangudda Tank	
2.	Kamatguddad Tank	
3.	Halimatti Tank	
4.	Katorimatti Tank	
5.	Chatramatti Tank	
6.	Wadder Tank	
7.	Alalgeri Tank	
8.	Banbagri Tank	
9.	Noorjahan Tank	
10.	Muttalkatti Tank	
11.	Naikatti Tank	
12.	Doddadundi Tank	
13.	Hullathi Tank	
14.	Kaladevru Tank	
15.	Kakol Tank	
16.	Arabngond Tank	
17.	Sannana Kere Tank	
18.	Donnimatti Tank	
19.	Chinnkatti Tank	
20.	Chigari Tank	
21.	Naikatti Tank	
22.	Hose Tank	
23.	Hullathi Tank	
24.	Guddad anveri Tank	
25.	Subbayya Tank	
26.	Pump house Tank	
27.	Muttilkatti Tank	
28.	Gangapur Tank	
29.	Devangundi Tank	