CHAPTER ONE

INTRODUCTION

The Western Ghats run parallel to the west coast of India lining the Arabian sea. The length of the Ghats is about 1600 km from Tapi Valley in Gujarat in the north to Kanyakumari in Tamilnadu in South. These series of hill ranges run north-south along the west coast traversing the states of Gujarat, Maharashtra, Goa, Karnatak, Kerala and Tamilnadu. They harbour patches of rich tropical and sub-tropical evergreen and semievergreen vegetation and this is attributed to the tropical conditions prevailing in the region. The flora of the Western Ghats is considered to be very unique and ecologically important. Inspite of the ever increasing human interference, there still exist excellent patches of climax vegetation. The Ghats give rise to numerous small and big rivers most of which flow eastward and meet the Bay of Bengal or westward demeaning the flow as they have a very short run because the Arabian sea is less than 50-80 kms away from any place in the hill range.

During the monsoon there is heavy rainfall upto 6000 mm in the Ghats region. There are many suitable catchment areas for irrigation and multipurpose river valley projects. Several such projects are either already completed or are in different stages of construction. Most of these projects generate electricity and irrigate vast agriculture lands. While planning and construction of these multipurpose projects very little concern was shown to the ecology of the region. The Western Ghats play a vital role in the weather conditions of the Indian pennensula and thus are necessary in its

agriculture (N.C.A. 1976). The forests of the region have long been supporting various primary needs of the local inhabitants as they totally depend on the forest resource for their subsistance.

The importance of the forests in modifying the hydrology of watersheds and in soil conservation is well recognised. The forest influence, whatever its magnitude is expressed by the manner in which the forest receives, stores and releases the potential food producing rainfall. The hydrological processes that govern the disposition of precipitation affect erosion of soil in the following way - (a) interception by canopy or other tree parts, (b) reduction of the velocity of surface flow due to forest litter, decomposed organic matter, mass of roots, etc. thus increasing infiltration and percolation and (c) moderation of peak flows (N.C.A. 1976).

A more intensive utilisation of the natural resources of the earth has undergone a great change in all developmental activities. Thus domestication of animals has concentrated the more dispersed populations of wild animals. The irrigation has enhanced the supply of water to cultivated crops in previously rainfed tracts. The natural resources of the earth are however finite and often interdependent (Gadgil, 1981). Demand for forest products is growing rapidly in all the developing and developed countries. In India a large gap exists between the requirement and supply and it is likely to widen further. The utilisation of one such resource can therefore, lead to its exhausation, even if it is a renewable resource, or to the deterioration of another interacting resource. It is now well

known that an intensification of resource use has often resulted in its exhaustion and in many undesirable side effects with a consequent deterioration of the quality of human life. Although modern day technology has enhanced by several orders of magnitude of man's ability to use the earths natural resources; it has not overcome the traditional problems of over exploitation and of deleterious impact on other natural resources.

The Western Ghats today harbour almost the entire forest wealth of the states of Gujarat, Maharashtra, Goa, Karnataka, Tamilnadu and Kerala. These forest resources however are already in short supply. Moreover, the irrigation and hydroelectric projects have led to serious deforestation not just in the submersion area, but in the vital catchment areas as well. This in turn has enhanced the soil erosion in the catchment and siltation of the reservoirs. It has sharply reduced the diversity of plant and animal life of this region and has led to socio-ecological disturbances. All of this has serious long-range economic consequences for the society as a whole, and its more immediate victims are the local inhabitants and peasants of Western Ghats.

The maintenance of proper cover of vegetation in the catchment area of any reservoir is vital to its proper functioning. Such vegetation regulates the flow in the dry season and more crucially prevents excessive erosion of soil. That soil erosion in the catchment area and the consequent siltation of reservoirs has been a major problem in India. Thus, for the 18 reservoirs all over India for which data is

available; the observed siltation rate has exceeded the expected siltation rate in all but one cases. Moreover, the observed rate is generally 3 to 10 times as high as the expected siltation rate (Gadgil, 1981). The consequent drastic reduction in the useful life of the reservoirs has obviously serious economic implications.

It is roughly estimated that in our country about 5334 million tonnes of soil (16.4 tonnes/hec.) is being eroded every year and that large quantities of nutrients are also being lost simultaneously. It is estimated that out of this eroded soil about 2052 million tonnes (6.26 tonnes/hec.) enter our river systems every year. Out of it nearly 480 million tonnes are deposited in the reservoirs and the remaining 1572 million tonnes are discharged into the seas. In otherwords, about 29% of the total eroded soil is permanently lost to the seas. 61% (3282 million tonnes) is being transported from one place to another on a regular basis every year. Nearly 10% of the eroded soil is being deposited in our reservoirs resulting in the loss of shortage capacity, (Dhuranarayan et al., 1985).

After independence, the preference for large dams continued and more spectacular dams like the Hirakud and Damodar were built. Bhakra Nangal and the other large dams were designed as the temples and monuments of progress. The lush green fields along the canals and its tributaries and brigades of high tension wires emanating from hydel powerhouse made such a grand picture that the need for evaluating the total benefits and costs or justifying socially the huge

expenditure incurred was often considered trivial

The total irrigated area in 1950-51 was about 209 lakh hectares. By 1973-74, 326 lakh hectares had been irrigated. The net cropped area under irrigation increased from 17.6 % in 1951 to almost 23 % by 1974. Though these achievements were credit worthy they were not a sufficient reason for totally making impossible the need for evaluating such projects by virtue of something done afterward. The alarming fact true to this day is no attempt has been made so far by the state governments to analyse the impact of projects completed on the environment in general and catchment areas in particular.

By the year 1979 the Indian Government had spent about 75,891 crore of rupees as planned public outlay of which Rs.10,556 crores i.e. 13.9 % was spent on dams and canals of various size. Today there are more than 15,000 dams classified as large dams. According to planning Commission, any scheme with a Culturable Command Area (CCA) of more than 10,000 hectares is called a major dam whereas that between 5000-10000 hectares as a medium. The culturable command area (CCA) upto 2000 hectares called as the minor dams (Paranjpye, 1981).

The gross command area of Warana Irrigation Project is about 1,09,498 hectares whereas the irrigable area about 87,000 ha. According to planning commission's definition the Warana Project comes under the major dams. The agricultural land submerged in the Warana dam was fertile. The cropping patterns were both remunerative and profitable. The crops like paddy, nachana, vari and cash crops like groundnut etc. were grown extensively in the areas that have now been submerged.

The total area including agricultural area of 4312 hectares was submerged under Warana reservoir caused an enormous amount of loss and hardship to the local villagers.

Quite apart from causing the loss of agricultural land, dams have also caused the drowning of hectares of forest. It is estimated for example that between 1950 and 1975, India lost 479000 hectares of excellent prime forest land because of various river valley projects (Goldsmith and Hildyard, 1984).

For the promotors of large scale dams, the loss of forests is generally seen only in economic terms i.e. in terms of the actual market price. The officials totally ignore the intangible ecological implications of the benefits like biological diversity, soil preservation and renewal, water replenishment, climatic stabilization, air purification, wildlife shelter and fuelwood and fodder to local populations.

Shifting cultivation or "slash and burn" cultivation is a traditional agricultural activity all along the Western Ghats as in the other hilly regions in the tropics. In the last two decades the problem has become alarming with indescriminate and ruthless cutting of the forest areas due to increase in the local population and increasing demands of industrial development. In Maharashtra the shifting cultivation is locally known as'Kumari', and is being practiced for ages (Rane, 1987).

There is another conventional practice of 'Rab' i.e. burnings of twigs and folliage in all the cultivation lands. This is in order to increase fertility of the soil and perhaps deweeding the area. The required wood and foliage is collected by lopping branches from trees in own land and forest. Thus causing multiple harm to the ecosystem i.e. trees, arboral

animals and birds and the ground fauna. The increase in the soil fertility by the practice is not even a fraction of the severe damage caused to the environment.

'Kumri' cultivation is undertaken in the hilly and undulating land covered with trees. There are no permanent fields for cultivation under this system. In the months of November and December each year a part of the forest area is selected by the village population for the purpose of Kumri. During winter months the trees are cut or 'girdled' and left to dry. Before the onset of monsoon the dry debris are burnt. The cut area is never ploughed and the millet seeds are put in holes made with sticks. After a month or two of cultivation, the area is left abandoned due to loss of soil fertility and low yield of the crops. Normally after 3-4 years the landuse changes and the vegetation on the fallow area is again cut or burnt for shifting cultivation. This process is repeated in a rotation of 4-5 years which constitutes a "Kumri cycle". In the past the Kumri cycle was of 10-12 years duration but now, It is substantially reduced to 4-5 years because of the more and more demand for land due to increase in human population. Due to excessive shifting cultivation the soil fertility is soon lost completely. The lack of tree cover leads to erosion and the exposed soil layer gets converted into laterite thus becoming a permanant wasteland.

India teems with animals. They come in all shapes and sizes from lumbering black buffalo to the ever nervous sheep and there are millions of them. India with just forteenth of the total land areas of the world supports more than 50 % of

its buffalos, 15 % of the cattle, 15 % of its goats and 4 % of its sheep. The livestock wealth plays a crucial role in Indian agriculture and has adverse impact on wildlife.

Grazing area are the region of conflict between wild animals and local cattle for food. The cattle population is higher than the wildlife, so the stress is always more and invariably beyond the capacity. Thus the wild herbivore do not get sufficient food which affects their population adversely. The local cattle always have supplementary feed so they survive in extreme conditions. Local domestic animals are vectors of some diseases which affect the wild animals. The uncontrolled grazing of domestic animals in forest causes great stress on the wild herbivores this leads to either starvation of the wild fauna or raiding of crops in the adjoining areas. The result is the increased man and wildlife conflict in which wildlife always looses. The reduced density of prey species forces predators to attack livestock and at times humans and in return get destroyed. This picture is very vivid in the Western Ghats. The over emphasis on the animal husbandry programmes by the Governments in the Western Ghats has drastically affected the animal diversity picture of the region.

Deforestation having far-reaching direct and indirect consequences, is one of the most serious human impact on environment. Over exploitation of forest resources to accommodate various human activities has attained an alarming proportion and has even tended to threaten the very foundation of the economy in devaloping countries which have a large

population to support. Deforestation, as a cause of ecological degradation has been noticed since long (Marsh 1974). Awareness of this problem in the developing countries emerged only in the early 1970; when several studies demonstrated the severity of environmental damage and wood shortage attributable to deforestation (Alten and Barnes, 1985). According to the estimation of the Food and Agricultural Organisation of the United Nations (FAO, 1981) the developing countries would loose 40 % of their existing forests by 2000 AD at the present rate of exploitation. The studies indicate that countries like Bangaladesh, Nepal, Sri Lanka and Thailand record annual deforestation at the rate of 4 %, 3 %, 1 % and 2 % respectively (Eriksson, 1979). U.S. Intergency Task force on Tropical forests concluded that with the present trend of deforestation, the world's tropical forests outside central Africa and the Amazon basin, would be nothing but scattered "remnants" by the year 2025 A.D. (USAIN, 1980).

Although, data pertaining to deforestation are critisized as just estimates of doubtful validity (Myers 1980). It is certain that developing countries throughout the world are experiencing forest depletion at a fast rate. The World Bank report (1980) indicates that, as a consequence of deforestation, fuel wood, which is a crucial need of poor millions, would be in short supply to meet the demand, long before 2000 A.D. in many countries.

In India, official estimates show that the country has lost about 4,04 million sq.km of forest land or about 12 % of its total geographical area under forest between 1951-52 and

1975-76 (Puri et al., 1983). Recent study by National Remote Sensing Agency (NRSA, 1983) has pointed out that in a span of 7 years, forest cover has been reduced from 16.89 % to 14.10% of the total geographical area of our country. Forest Survey of India has reported 18.1 % of forest area for the country in 1980-82. The NRSA estimation, for different States and Union Territories, based on satellite imagery of false colour composites has brought out that the maximum deforestation is marked in M.P. (18,353 km^2) followed by Maharashtra (10,332 km^2), Orissa (8,958 km^2) and A.P. (8,611 km^2). Considering the fact that Maharashtra has forests only in north eastern region on the boundries of Madhya Pradesh and Andhra and in the Western Ghats, the loss in the forest area is significant. The Western Ghats play a vital role in maintaining rich biological diversity, climate and rainfall in the penninsular India. Therefore loss in the forest cover of the region has long term effects on human life in the region.

Hydroelectric, irrigation and multipurpose projects often open up previously inaccessible regions, rich in timber and wildlife. With increased demand for timber and other forest produce their prices have increased so much that they are beyond the means of large population. This has lead to unsocial elements taking advantage and resort to illicit tree cutting and smuggling. The illicit tree cutting is though both organised and unorganised causes great damage to varied types of unique habitats and adversely affect the founal diversity. Similarly poaching of wildlife in this area is known to cause damage to the wildlife diversity of the region. However,

these activities are naturally much more difficult to document due to the conflicting interest which grow tensions between tribals, local people and Govt. agencies.

The evergreen and semi-evergreen forests confined to the western face of the Western Ghats were relatively inaccessible and this forest type has therefore been preserved somewhat better. Because of the shorter length of the rainy season this forest type is developed much less well in Maharashtra and apart from a small patch near Murbad in Thana district, the semi-evergreen and evergreen forest begins from near Mahabaleshwar in Satara district reaching its best development in Karnataka (Gadgil & Malhotra, 1979). Due to Monsoon there is heavy rainfall in the Ghat region and hence potential catchment area for irrigation projects is larger. Therefore many such projects are either already completed or are in the preparatory stages.

India has a rich heritage of wildlife as well as long history and tradition of conservation. India is also unique in the richness and variety of its wildlife. There are about 350 species of mammals, 1200 species of birds in nearly 2100 forms and more than 20,000 species of insects (Saharia, 1982). The wildlife in India is declining day by day, therefore 66 species of mammals, 38 species of birds and 18 species of amphibians and reptiles including all the three species of crocodilians found in India are now listed in Schedule I (as amended) of the Wildlife (protection) Act, 1972 as rare and threatened.

Success in evolution of a species is measured in terms of survival, failure by extinction. Most recent extinctions, however, can be imputed either directly or indirectly to man,

more specially to man's demographic and technological expansion. Some species have been not only destroyed, often as the result of commercialised exploitation on Global scale, as with the fur seal and blue whale. The same is the case with the musk deer and the great one horned rhinoceros in India, both valued commercially for the supposedly medicinal value of 'musk' and the "rhino's horn" respectively. Even the 'jackal' regarded as a 'vermin' so far is falling a prey to large scale commercialised hunting for the thriving fur trade in Kashmir.

For many of the plant species also, extinction has been caused by man, because of his inadvertence as well as ignorance about their economic potential and ecological functions. According to an estimate of the Threatened plants Committee of I.U.C.N., about 10 % of the world's flowering plants are reported to be "dangerously rare" or "under threat". In India an inventory of 135 threatened species, of plants has been prepared which includes many plants from the Western Ghats (IUCN, 1980).

The majority of recent extinctions, both in plants and animals are, however, attributable to environmental change arising from alteration, degradation or destruction of natural habitats, deforestation, agricultural expansion, unrestricted grazing, hunting and various developmental activities such as road construction or transportation facility, dam construction etc.

Probably the greatest area of concern for species populations lies in the massive destruction of habitat that is now taking place worldwide. The worst situation appears to be

in the humid tropics that represent the world's greatest reservoir of terrestrial animal and plant species. Species diversity in tropical humid forest is almost inconceivable to those familiar only with the temperate zone. Not all humid tropical forest plot would be equally diversified, but the total species diversity is enormous. The vegetation diversity is related to diversity in related life. Most of the world's bird species and a great variety of mammals, reptiles, and amphibians live in the humid tropics. It has been estimated that half the terrestrial species of plants and animals belong to humid tropical forests of Latin America, Southern Asia, the Pacific Islands and Central and Western Africa. The original area of humid forest in the tropics (before European impact) is believed to be 1600 million hectares (4000 million acres). Forty percent of that had been eliminated by 1978, 935 million hectares remaining in actual forest, and this was estimated to be disappearing at a rate of 110,000 sq.km. per year (Shane, 1978).

The changes in tropical forests are certainly the most devastating changes now going on; but they are not the only catastrophic decline in wildlife habitat. Some 43 % of the earths land surface is already desert or semidesert. A further 19 % (30 million sq.km.) is now threatened with desertification, according studies carriedout for the United Nations. The World's drylands are being degraded toward desert at a rate of more than 58,000 sq.km. per year. The recent satellite imageries show that the area in Deccan adjoining to the Western Ghats is rapidly becoming arid, a

stage prior to desertification.

It can be seen that environmental changes might be closely linked with these short-term climatic changes or result from indirect action of man or be the result of Geographical changes elsewhere in the biosphere (Chapman and Hall, 1973). Thus a pathogen acting to reduce the population of herbivores will influence many other species. This is because the vegetation may become taller and predators will either be faced with starvation or with changing their attention to other possible prey species. Studies such as Lokie (1966) in the Carron valley in Perthshire have demonstrated the complex relationships existing between change in land use (afforestation), the population density of small mammals and the response and territorality of the predators. The size of the teritory defended by males of the predators is not determined solely by food availability i.e. by the population density of the small mammals but also by the number of predators competing to set up territories. Since the later factor depends upon the previous breeding success of the predator species, indirectly a function of food available at that time, it can be seen that both the past and present density of the small mammal population influence the present response of the predator.

The tremendous genetic diversity of living organisms created by hundreds of million years of evolution is a precious heritage of man. These have yielded to us a variety of foods, fibres and vital drugs and their maintenance is crucial to further progress in these fields. This is why F.A.O. has launched a vigorous programme for the maintenance of genetic

diversity of wild relatives of cultivated plants. The Western Ghats harbour a large variety of these, ranging from ragi, paddy, cardamom and pepper to mango and jackfruit. Western Ghats are also known to exhibit excellent faunal diversity most of which is unique to the area (Table 1).

The large impact of the irrigation and hydel projects on the Western Ghats have sharply reduced the biological diversity of this region. These projects have affected high rainfall areas, and areas near water courses which harbour evergreen tree species. They have thus contributed to the sharp reduction in the extent of evergreen forests on the western ghats. These forests have a unique storehouse of many plant and animal species occurring nowhere else in the world and it is only our profound ignorance which marked the many extinctions of biological species (Gadgil, 1981).

In addition to the salient role played by forests in the maintenance of climate, soil, moisture control of soil erosion and floods, the forest and wildlife are beneficial to us by preserving the ecosystem, maintaining the resistant gene pools, safeguarding environmental qualities and by way of constant supply of forest produce. Encroachment by forest plantations, hydroelectric projects, poaching, fishing, collection of minor forest produce, forest fire and cattle grazing are the major identified threats to the forest habitat and wildlife diversity in the Western Ghats of Maharashtra.

Extensive work has been done by many workers the world over on various aspects of wildlife conservation. Initially the idea of conservation was introduced by the scientists from

Table 1 : Comparison of the number of species in five animal classes found in the World, India, Maharashtra and Western Ghats (Samant et al. 1988).

Animal	World	India		Maharashtra		Western Ghats	
	No.	No.	%	No.	%	No.	%
Mammals	4500	320	7.2	85	26.56	79	92.94
Birds	8600	1260	14.65	500	39.68	412	82.4
Reptiles	5000	440	8.8	100	22.72	71	71
Fishes	23000	1400	6.08	600	42.85	166	27.67
Amphibians		130	-	22	16.92	20	90.90

the temperate countries where the naturally biological diversity was much limited as compared to the tropics. The process of industrialization in the last centuary adversly affected the floral and faunal diversity in the developed countries and a new thought of large scale conservation emerged out.

However, in the poor and developing countries in the tropics wildlife diversity was perhaps the highest in the world and was considered to be bountiful by the locals and the foreign rulers alike. The over exploitation of the natural wealth has reduced the once plenty natural resources of flora and fauna to fragments in most of the developing countries in the tropics particularly Afro-Asian region.

Therefore many countries in Africa and Asia are struggling to save whatever little biological diversity left with them by creating National Parks and Wildlife reserves or extending the existing ones. Many African countries look at the wildlife sanctuaries as an industry, the major foreign exchange earner. This has attracted the attention of many scientific workers to various problems associated with wildlife diversity.

Huxley (1961) has given an extensive account of conservation of wild animals from the nature reserves in East Africa. Maekinnon (1979) studied conservation problems from South Asia. Holfmann (1983) has discussed the various aspects of the possibilities of Wildlife Conservation from Sri Lanka. Massive deforestation due to illicit tree cutting, shifting cultivation and other agriculture practices and their impact on wildlife in Uganda has been reported by Hamilton (1984). Mohammad (1983) gives an account of present status of some of

the endangered species and chances of their reintroduction in some of the nature reserves in Pakistan. The great loss of natural vegetation and wildlife by illicit ways as a result of rapidly increasing huge human population in Bangladesh is reported by Reza Khan (1983). Brockleman (1983) has given a detail account of present status of wildlife conservation in Thiland. Abe (1977) studied the distribution of small mammals in Nepal. Afolayan (1980) has given an account of the present wildlife conservation practices from Nigeria, Mishra (1982) comments on the human needs and conservation in Nepal.

Petrides (1983) the preservation of natural landscapes with their indigenous flora and fauna is a responsibility of every nation. Most wild areas today exist as 'islands' surrounded by other land uses. Once destroyed, population and technological pressures will present their recovery. In the National Parks and Wildlife Sanctuaries in India the illigal killing of animals in nature reserves generally is a more serious problem than animal over-abundance as in other countries. Also damage by livestock is not unusual and may create problems.

Mayers (1983) has discussed the potential of wildlife tourism in tropics as a measure of wildlife conservation through recreation. Western and Henry (1979) emphasised the role of economics in the developing countries and their priorities in conserving the wild animals and plants in the newly created National Parks.

In order to frame a uniform and effective wildlife conservation policy for all the developing and developed countries in the world, the International Union of Conservation

of Nature and Natural Resources has prepared a World Conservation strategy on living resource conservation for sustainable development (IUCN, 1980).

Some other workers from abroad who have delt with the different aspects of wildlife conservation and biological diversity are Paine (1966), Pienaar (1968), Dasmann (1968), Fisher and Vincent (1969), Usher (1973), Marsh (1974), Horwich (1972), Oxley et al. (1974), Diamond (1975), Roberts (1977), Anderson (1979), Edisvik (1980), Carter (1980), Olingo (1980), Rose and Olson (1980), Farn-Worth et al. (1981), Halffter (1981), Titmus (1983), Goldsmith and Hildyard (1984).

In India, particularly after independence there was a mass scale reduction in the expanse of the natural vegetation which resulted in dwindling of wildlife. The process of degradation of natural habitats was accelarated by new governmental policies like grow more food campaign operation milk flood, new multipurpose river valley projects, mines etc.

The adverse impact of the developmental activities in the country for last few decades have raised concern in the conservationists in India. Agarwal et al. (1982, 85) in their excellent two reports have evaluated the present status of environmental problems and their relation with dam projects, flora and fauna, human population explosion, pollution, agriculture etc.

Almeida (1983) has given an extensive account of treatened plants from Maharashtra, quite a many of them are from the Western Ghats. Divekar (1983) has given firsthand report of the massive damage of flora, fauna and tribal life

caused by the proposed Bhopalpatnam and Ichampali multi-purpose projects in Bastar M.P. Gadgil and Malhotra (1979) have studied the changing environmental pattern from the Western Ghats of Maharashtra and its impact on the pastoral community and vice versa.

Davidar (1983) comments on the role of Non-Governmental Organizations (NGOs) in the country in nature conservation. Agarwal et al. (1987) give another dimension of the local peoples sufferings as a result of the large developmental projects in the country and how the NGOs and the voluntary agencies are reacting to them.

The alarming situation of the biological diversity in the ever shrinking natural forests has forced the state governments in the recent years to declare many such areas of wildlife importance into Wildlife Sanctuaries and National Parks.

This has attracted the attention of many scientific workers in comparatively the new branch of conservation biology. Though extensive work is in progress on various aspects of animal behaviour, habitat utilization, conservation potential, translocation and reintroduction in the nature reserves in the country it is mainly restricted to the well established National parks and tiger reserves. Apperantly the Western Ghats region of Maharashtra has not been paid due attention for the similar studies.

In India some of the workers who have studied various aspects of wildlife in the nature reserves and sanctuaries are Ramchandran (1984), Ramchandran et al. (1987) i.e ecology and

distribution of arboral mammals in the Western Ghats and management of mammals in the Periyar Sanctuary respectively. Salim Ali (1984, 85) studied endangered animals in different habitats and has suggested conservation measures.

Areas in the country having specific biological diversity have been identified as areas of importance for Biosphere Reserves by Gadgil and Moher Homji (1986). Krishnan (1975) has given an excellent account of large mammals from a number of Wildlife Sanctuaries and other forested areas from penninsular India. Combination of Bandipore, Mudumulai and Wynad Sanctuaries have been proposed into Jawaharlal Nehru Nation Park by Nair et al. (1977). Prakash (1988) has investigated the faunal diversity in desert ecosystem of Rajasthan.

Ranganekar (1984) has suggested different measures to improve the livestock quality in the Western Ghats. The illicit tree cutting and degradation of the forests of the Western Ghats region of Maharashtra has been delt by Rane (1987). Ghosh et al. (1987) have studied the interspecific competition of wild and domestic ungulates for food and space in the deserts of Rajasthan.

However very little attention is paid by the workers on the biological diversity and its conservation potential from the Western Ghats region of Maharashtra.

Considering the crucial role played by the threatened forests of the Western Ghats in Conserving the rich biological diversity and maintaining the ecological balance of the Indian penninsula many of such isolated and good patches of forests

have been declared in the recent years by the State and Central Government, as Wildlife Sanctuaries and National Parks. This has an additional dimension as most of these forests from the Western Ghats Constitute the catchments of number of large multipurpose dams.

In order to study the impact of human activities on the environment in general and wildlife in particular, the newly created wildlife sanctuary in a catchment area, Chandoli Wildlife Sanctuary in the Warna Dam Catchment was selected. The study area (309 sq.km.) was surveyed for various human activities mainly agricultural practices, graying, deforestation, hunting and poaching, developmental activities etc. and their direct and indirect effect on wildlife diversity of the region. The study was carried out from June 1986 till June 1988 in which a detail survey was conducted in 669 households in all the 25 villages in the sanctuary. Also detail investigations were carried out on past and present status of wildlife diversity of this region. The data generated during the investigations was computer analysed for precised results.