

5. Biodiversity and Conservation

The term "Biodiversity" is short form of "Biological Diversity" and was coined by *Rosen* in 1986. According to Article-2 of Convention on Biodiversity, *Biodiversity* may be defined as, "Biological diversity means the variability among living organism from all sources including, inter alia, terrestrial, marine and other ecosystems and the ecology complexes of which they are part, this includes diversity within species between species and ecosystem".

No one knows exactly how many species occur on our planet. Scientists believe that the number of species on earth is in between 10 million to 80 million. Some scientists have been able to enlist only 1.4 million species so far. Nature has taken more than 600 million years to develop this exceedingly complex spectrum of life on this planet. The existence of life race depends on health and well being of other life forms in the biosphere.

Biological diversity is the total variety of life on our planet. Total number of races, or species i.e., the sum total of various types of microbes, plants, animals present in a system is referred as *Biological diversity* or simply as *Biodiversity*.

LEVELS OF BIODIVERSITY

Biodiversity is usually analysed at three levels i.e. species, genetic and ecosystem, ecology, which has its own significance.

1. Diversity of Biotic Communities and Ecosystems : Depending largely upon availability of abiotic resources and conditions of the environment an ecosystem develops its characteristic community of living organisms. A small pond, for example, constitutes an ecosystem and possesses a

set of flora and fauna different from a river which is another type of ecosystem. Different types of forests, grass-lands, lakes, ponds, rivers, wet-lands etc. represent diverse ecosystem of each with a characteristic biotic community.

2. Diversity of Species Composition within a Community: The biotic component in an ecosystem may be composed of a few species only or a large number of species of plants, animals and microbes, which react and inter-act with each other and with the abiotic factors of the environment. The richness of species in an ecosystem is usually referred to as **Species diversity**.

3. Diversity of Genetic Organization within a Species : Within a species there are often found a number of varieties or races or strains which slightly differ from each other in one, two or a number of characters such as shape, size, quality of their product, resistance to insects, pests and diseases ability to withstand adverse conditions of environment etc. These differences are due to slight variations in their organisation. This diversity in the genetic make up of a species is referred to as **Genetic diversity**.

A species is usually the unit of classification in most of the taxonomic works and can be defined as a group of organisms genetically so similar to each other that they can interbreed and produce fertile off-springs. For example, Horses and Zebra are different species. However, they are genetically similar and can interbreed but the off-springs produced are infertile. A species is usually recognisably different from each other in appearance but sometimes the differences are so minute that it is difficult to distinguish a species from another.

BIOGEOGRAPHICAL CLASSIFICATION OF INDIA

India is one of the 12 mega biodiversity countries in the world. The country is divided into 10 biogeographic regions. The wide variety in physical features and climatic conditions have resulted in a diversity of ecological habitats like forests, grasslands, wetlands, coastal and marine ecosystems and deserts which harbour and sustain immense biodiversity.

Biogeographically India is situated at the trijunction of three realms namely Afro-Tropical, Indo-Malayan and Paleo-Arctic realms and therefore has characteristic elements from each of them. This assemblage of three distinct realms makes the country rich & unique in biological diversity. With only 2.4% of the land area, India accounts for 7-8% of recorded species of the world. The studies of the distribution of biota (flora + fauna) are collectively called biogeography. There are two major approaches to the study of biogeography, (I) descriptive or static biogeography (II) Interpretative or dynamic biogeography. India is characterised by variety of climate types and flora of different types are in its different parts. India has sufficient number of biomes which represent a sum total of the biological community interacting within single life Zone where which climate is similar. The following 13 biogeographical regions have been identified in India:

1. Himalaya
2. The Desert
3. Deccan Peninsula
4. Malabar
5. Andaman Islands
6. Nicobar Islands
7. Gangetic Planes
8. Western Ghats
9. Burman/Bangalian forest
10. Marine Coast
11. Coromondal Mahanandian

BOTANICAL REGIONS OF INDIA

The country has been divided into the following nine floristic regions with respect to following diversity :

(i) **Western Himalayas:** It extends from Kumaon to Kashmir and has annual rainfall upto 200 cm. Corresponds to three climatic belts, there are three zones of vegetation.

(a) **Submontane zone:** It is constituted of tropical and sub tropical parts and extends to 1500 meters altitude. It comprises mostly of Siwalik ranges. Snowfall does occur. The plants like *Shorea robustica*, *Dalbergia sissoo*, *Cedrela toona*, *Eugojambolano*, *Acacia Catechu*, *Butea monosperma* (Dhak) *Zizyphus* etc. are found this region.

(b) **Temperate Zone:** Above submontane zone extend temperate zone forests up to 3000 meter altitude. They are dominated by plant speices like *Acer*, *Ulmus*, *Betula*, *Salix*, *Populus*, *Cornus*, *Bumus*, *Pinus*, *Taxus*, *Picea* etc.

(c) **Alpine Zone:** It extends from 3500–4500 metres altitudes and is characterized by alpine forest vegetation. Most common tree species are *Betula*, *Rhododendrous* etc. and herbs like *Primula*, *Potentilla*, *Polygonum* etc.

(ii) **Eastern Himalayas:** It includes regions of Sikkim and NEFA and is characterised by more rainfall, less snow and higher temperature. This is also divided into the following three zones altiudinally.

(a) **Tropical Zone:** Upto 1800 metres altitudes, this zone has tropical semi-evergreen moist deciduous forests.

(b) **Temperate Zone:** This zone extends between 1800 metres to 3800 metres altiude and has typical montane temperate forests.

(c) **Alpine Zone:** Beyond the temperate zone, extends alpine zone upto 5000 meter altitudes. It has alpine vegetation including *Juniperus* and *Rhododendron*.

(iii) **Indus Plains:** The zone includes the arid and semiarid regions of Punjab, Rajasthan, Kutch, part of Gujarat and Delhi. The rainfall is less than 70 cm. The vegetation is tropical thorn forest in semi-arid region and is typical desert in the arid region.

(iv) **Gangetic Plains:** This region extends over Uttar Pradesh, Bihar, Bengal and part of Orissa and is characterised by moderate amount of rainfall and most fertile. Vegetation of this zone is chiefly of tropical moist and deciduous and dry deciduous forest type. The common plants of this zone are *Dalbergia sissoo*, *Acacia*.

(v) **Central India:** It comprises Madhya Pradesh, part of Orissa and Gujarat. The rainfall is 150–200 cm and its vegetation is thorny, mixed deciduous and teak type. The chief plants of this region are *Tectona grandis*, *Madhuca*.

(vi) **Malabar (West Coast):** The region include western coast of India from Gujarat to Cape Comorin and has heavy rainfall. The forests are tropical evergreen in extreme west, semi-evergreen towards interior subtropical or montane temperate evergreen forests in Nilgiris and mangroves near Mumbai and Kerala coast.

(vii) **Deccan Plateau:** This region extends all over peninsular India (i.e. Andhra Pradesh, Tamil Nadu and Karnataka) and has rainfall upto 100 cm. Its central hilly plateau has tropical dry deciduous forests.

(viii) **Assam (Asom):** This region is characterised by heavy rainfall (220 to 1000 cm). The vegetation is either dense evergreen forest or sub-tropical. The evergreen forests include trees like *Dipterocarpus macrocarpu*, *Mesua ferrica*, *Shorea robusta*, *Ficus elastica*, etc., bamboose as *Bambusa pallida*, *Dendrocalamus hamiltonii*, *hamiltonic*, etc.

(ix) **Andamans:** This region possesses a varied type of vegetation: mangroves and beech forest at its coasts and evergreen forests of tall trees in the interior. India has large number of wetlands, mangroves and coral reefs to its credit.

IMPORTANCE OF BIODIVERSITY

Biodiversity is valuable natural resource for the survival of mankind. Man has domesticated a number of economically important plants and animal species. Old traditional varieties and the mid relatives of domesticated plants and animals constitute a vital genetic resource for us. Many plants and animals including wildlife are of very important for human being. They can be used directly or indirectly to have consumptives, productive, social, ethical, aesthetic & opions values i.e. in terms of money.

Consumptive Value: Most of the developing countries obtain fuel wood from forests. Still more than 1500 million people cook their food by burning wood. About 1000 million cubic meter wood is used for fuel across the globe. This imposes heavy pressure on forests. Hunting of wildlife, use of grass with some commercially important plants are fodder are of only comptive.

Various tribal societies fully depend on forests (biodiversity) for their habitation and livelihood. They used tubers, roots, fruits, seeds and meat of wild animals as their food.

Some plants have been found to have immense medicinal properties, few of them with curative properties are given below—

Medicinal plant	Medicinal part	Curative property
Cinchona Isabgoal	Quinine husk and seeds of Isabgoal	Treatment of malaria. Laxative, useful in chronic diarrhoea and dysentery
Opium poppy	Morphine, codeine and narcotine	Mental problems and cough
Brahmi	Juice of leaves and stems	Repairs loss of memory

Ashwagandha (<i>Rauolfia serpentina</i>)	Serpentine	Urine problems
Basil (Tulsi)	Leaf-extract	Cough and cold, fever
Jambul	Bark-extract	Asthma and Bronchitis
Kalmegh	Root-extract	Liver tonic

The lack of marketing facilities, lack of technical and financial support, involvement of middlemen in the business and large range of variation in the selling price of medicinal plant that keeping away farmers from the main trade.

Many pharmaceuticals have traditionally been derived from plants and animal sources. Extracting medicines from plants are worth over 60 billion dollars a year (Govt. of India 2006). The total percentage of the people in tropical areas depend upon traditional medicines. Penicillin and tetragcline and amongst the 3000 antibiotics extracted from mirco-organisms. Guggal is an oleo-gum which is used in ayurvedic medicines for its anti-inflammatory, anti-rheumatic and hypo-chalesteral activity.

SOCIAL VALUES

Social value is one of the instrumental values where some thing which has a means to another's end. Materialistic uses of biodiversity are the core of instrumental value that biodiversity has distinct social value attached with different societies. Goods and services provided by ecosystems to our society include

1. Provision of food, fuel and fibber.
2. Provision of shutter and building materials.
3. Purification of air and water.
4. Detoxification and decomposition of wastes.
5. Generation and renewal if soil fertility, including nutrient cycling
6. Control of pests and diseases

These are the social values of biodiversity because biological resources provide the basis for life on earth including men.

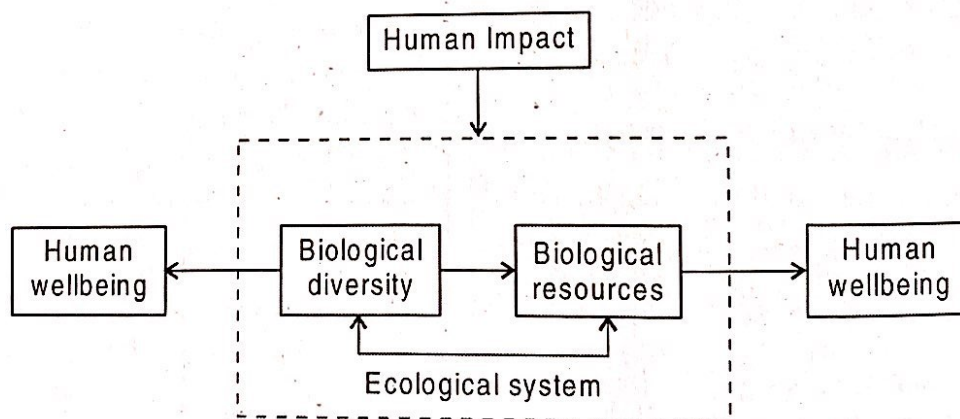


Fig. Human-Biodiversity Interrelationships

Ethical Values: Ethical or religious values is also one of the indirect values of biodiversity. The ethical and religious value of biodiversity is rooted in the understanding that huminity is part of nature and that we are just one species among others. All species have an inherent right to exist. Future generations also have an inherent right to know them and to have the choice of using them or not.

Religions also have an significant impact on our attitude towards natural resources. The Buddhists perception of nature, for example, is based on different practices and approaches than that of Christian belief, through both are consistent with conserving biodiversity. Ethical value is one of the non-use values, which derive from human ethical considerations relating to

matters such as the extinction of species and ecosystems.

Aesthetic Value: The aesthetic value of biodiversity has been expressed in many ways through art, poetry, songs, literature, music and dance. Forests are closely linked with our religion and culture. Human race has a great evolutionary attachment with forests as our ancestors lived in forests. Forests are nature's laboratories, where scholars study natural sciences. Many types of trees are worshipped in tribal and Hindu societies i.e. Peepal, Bargad, Tulsi etc. Some animals like cow is worshipped by Hindus in all over India. In series of this many birds, colourful butterflies, mammals have great aesthetic value for human beings. Eco-tourism generate large amount of revenue annually that gives the aesthetic value of biodiversity. In this tourism people far and wide spend a lot of money and time to visit wilderness areas, where they enjoy the aesthetic value of diversity.

Biodiversity is natural capital, and therefore supplies a stream of value to current generations. Secondly lowers the risk of adverse outcomes. This too involves a future in that the risks being considered confront both current & future generations. This is value of biodiversity protection. The option value refers to the possibility of a natural resource having some vast future. It is often used in discussions about finding and developing new medicines. Most of the chemical compounds used in drugs in industrialised countries have the same or same in traditional medicines.

BIODIVERSITY AT GLOBAL LEVEL

It is estimated that there exists 5 – 30 million species of living forms on our earth there only 1.5 million have been identified and include 3000 species of green plants and 800000 species of insects, 40,000 species of vertebrates and 3,60,000 species of microorganisms. But present studies shows that the number of insects alone may be as high as 10 million of related to different species in different parts of world are different. But some other Botanists are of different precipitation and temperature are among the most important determinants of biodiversity.

Terrestrial biodiversity of the earth is best described as biomes, which are the largest units present in different geographic areas. It is also estimated that about 125000 flow of species in tropical forests, but only about 1 – 3% are of these are known. The table shows the estimated number of species worldwide. Millions of species of plants, birds, amphibians well as mammals are in the tropical rainforest. About 70% of global biodiversity lies in these rainforests. Many of these rainforests are of medicinal use. Tropical deforestation is reducing the biodiversity 30% every year.

TABLE

Approximate numbers of species from all over the world

S.N.	Group	No. of species
1.	Total plants	3,90,800
2.	Algae	40,000
3.	Fungi	42,000
4.	Bacteria (including cyanobacteria)	4,000
5.	Viruses	1,550
6.	Mammals	5,500
7.	Birds	10,000
8.	Reptiles	10,000
9.	Fish	40,000
10.	Amphibians	15,000
11.	Insects	50,00,000
12.	Crustaceans	43,000
13.	Molluscs	2,00,000
14.	Nematodes and Worms	25,000
15.	Protozoa	40,000
16.	Others	1,10,000

Source: Arthur D. Chapman, 2009, Number of Living Species in the World

The species diversity in tropics is high as :

- In tropics as the conditions for evolution were optimum and for extinction fewer.
- In tropics species diversity was conserved over geological time. Due to low rates of extinction prevailing there; and
- Biological diversity is the result of interaction between climate, organisms, topography, parent soil materials, time and heredity.

However, these explanations need experimental observations and confirmation. IUCN and several other world Authorities have identified 12 Megadiverse countries and made comparative studies on flora-fauna, their endemism their protection efforts etc. The countries identified are as follows:

1. Brazil
2. Colombia
3. Venezuela
4. Peru
5. Ecuador
6. Indonesia
7. Democratic Republic of Congo (Zaire)
8. India
9. China
10. Malaysia
11. Australia
12. Mexico

BIODIVERSITY AT NATIONAL LEVEL (INDIA)

India is located in south Asia, between latitude 8.4° and 38° N and longitudes 69° and 97° E. The Indian landmass extending over a total geographical area of about 3029 million hectares, is bounded by Himalayas in the north, the bay of Bengal in the east, the Arabian sea in the west, and Indian Ocean in the South. The wide variety in physical features and climatic situation have resulted in a diversity of ecological habitats. This richness in biodiversity is due to immense variety of climatic and altitudinal conditions coupled with varied ecological habitats. The Indian region having a vast geographical area is quite rich in biodiversity with a sizable percentage of endemic flora and fauna. These vary from the humid tropical Western Ghats to the hot desert of Rajasthan, from the cold desert of Ladakh and the icy mountain of Himalayas to the warm coasts of peninsular India.

In flora, the country can boast of 45,000 species which accounts for 15 per cent of the known world plants. Of the 15,000 species of flowering plants, 35 per cent are endemic and located in 26

endemic centres. Among the monocotyledons, out of 588 genera occurring in the country, 22 are strictly endemic.

The North Eastern region boast of being unique treasure house of orchids in the country. The important Indian Orchids are *Paphiopedilum fairieyanum*, *Cymbidium aloifolium*, *Aerides crispum*, etc.

India is very rich in faunal wealth and has nearly 89,000 animal species, about 80 per cent of which are insects.

In animals, the rate of endemism in reptiles is 33% and in amphibians 62%. Further there is wide diversity in domestic animals, such as buffaloes, goats, sheeps, pigs, poultry, horses, camels and yaks. Domesticated animals to have come from the same cradles of civilization as the major crops.

There are no clear estimates about the marine biota though the coastline is 7516 km long with a shelf zone of 4,52,460 sq km and extended economic zone of 20,13,410 sq km. There is an abundance of seaweeds, fish, crustaceans, molluscs, corals, reptiles and mammals.

Information regarding other flora and fauna are patchy. Hundreds of new species may be present in the country awaiting discovery. The Western Ghats in Peninsular India, which extend in the southern states, are a treasure house of species diversity and has about 5,000 species. It is estimated that almost one-third of the animal varieties found in India have taken refuge in Western Ghats of Kerala alone.

BIODIVERSITY AT LOCAL LEVEL

The biodiversity at local level can be well understood by demarcating the points, places, zones rich in biodiversity. This can be understood as compositional *i.e.*, rich in plants & animals of same habitats and genetic make up. We can also study the local biodiversity on following rules:

1. Richness of species at a given place.
2. Physical characteristics of habitat and vegetation in particular area.
3. Change in species composition across different habitats.

4. Local diversity based on climate, geographical ecological and other processes responsible for creation.
5. Rate of change across gradients and conditions.

It is said that environmental variables are responsible for diversity but temperature play an important role in affecting the biodiversity of an area. Thus local areas are well affected in heterogeneous and homogenous habitats.

INDIA AS A MEGA DIVERSITY NATION

Megadiversity concept covers the broad frame of biodiversity concept, but emphasizes more on species richness, threatened species and endemic species. The hot-spots concept emphasizes more on the exceptional concentration of endemic species besides the imminent threats of habitat destruction.

Megadiversity, a term used by International organization (refer World Bank Technical paper no. 343). Megadiversity nations are Mexico, Colombia, Ecuador, Peru, Brazil, Zaire, Madagascar, China, Malaysia, Indonesia Australia and India (12 countries). Thus India is one of the 12 megadiversity nations. These countries have been considered to have the largest fraction of the world's species and with a high concentration of endemic species.

Two areas in India have been identified as megadiversity hot spot areas, which are western ghat forests and Eastern Himalayan forests, although India as a whole has been marked as a megadiversity nation. Miller Meier says, "India is remarkable in both species richness and endemism although it ranks 10th position."

The World Bank in their publication (Paper 343) made their observations based on terrestrial vertebrates, butterflies and higher plants. In case of fresh water fauna India holds a position among the first ten countries of the world.

The Eastern Himalayas from a humid region having high monsoon rainfall, milder temperature and less snowfall. The mighty mountains with their

snow-peaks and extremely rich forests exert a tremendous influence on the flora and fauna of the region. Arunachal Pradesh is a land of mighty rocks and luxuriant forests, gentle streams and raging torrents. It presents a breath-taking spectacle of nature in her glory, beauty of gorges and galaxy of ethnic people make the area as one of the best in the world. The mountain ranges in Sikkim, Bhutan, Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura, Meghalaya and the Darjeeling hills are symbol of celestial splendour where a good number of peaks rise well over 7000 m, the highest being the Kanchinjongha 8335m which is very close to Mt. Everest, the World's highest peak.

The marshes and wetlands of this region have more than 200 species of aquatic and semiaquatic plants, besides innumerable species of phytoplankton, zooplankton and benthic flora and fauna that cater to the need of man, animals and birds. This zone has many more such rare qualities. About 46000 plant species and 81000 animal species have been described from the 70% of total geographical area. Huge diversity found in India is mainly due to favourable environmental conditions. India has 10 biogeographical regions.

India's biosphere are well placed, cultural diversity is well exemplified in its different religions, languages, traditions, festivals etc. Ayurveda, Unani, Homeopathys & herbal preparations (for pharmaceutical & cosmetic purposes) all are based on plants. They are parts of traditional biodiversity in India. Biodiversity is an important strength of India. Out of world's one lac species of insects, 60 thousands are found in India. The two hot-spots of India have been identified habitat for 5332 endemic species of mammals reptiles, amphibians, birds and higher plants. Many crops like rice, sugarcane, mango, jute, citrus, banana, bazra, jwar etc, arose in India and spread throughout the world. A large proportion of the Indian biodiversity is still unexplored. 7500 km long coastline of our country rich in coral reefs, mangroves, estuaries molluscs, crustaceans, polychaetes, marine algae etc. Nearly 5000 species of flowering plants had their origin in India.

NEW HOTSPOT IN WORLD

The new list of hotspots in the world are:

1. Tropical Andes
2. Meso America
3. Caribbean
4. Brazil Atlantic Forest
5. Western Ecuador
6. Brazil Cerrado
7. Central Chile
8. California Floristic Province
9. Madagascar
10. Eastern Arc and Coastal Forest of Tanzania and Kenya
11. Western African Forest
12. Cap Floristic Forest
13. Succulent Karoo
14. Mediterranean Basin
15. Caucasus
16. Sundaland
17. Wallacea
18. Philippines
19. Indo Burma
20. South Central China
21. Western Ghats and Sir Lanka.

In India, two major centres, the Western Ghats and Eastern Himalayas are identified as the hot-spots of biodiversity. But reality is that these are very poorly defined. In fact where hot-spots are known for rich diversity and high levels of endemism are under immediate threat of species extinction and habitat destruction.

8 hottest hot-spots recognised are Madagascar, Philippines, Sundaland, Brazil Atlantic Coast, Caribbean Basin, Indo Burma, Western Ghats Eastern Arc and Coastal forests of Tanzania/Kenya Govt. policies for hot-spots conservation should take in to account stabilization of population in these areas. Efforts are needed to publicise the long term value of species in "hot-spots". Thus education on the value of biodiversity is very much needed

today. To qualify as hot-spot, the main determining criterion is species *endemism*. A second criterion is degree of threat, to qualify an area must retain only 30% or less of its original primary vegetation.

THREATS TO BIODIVERSITY

One of the measure threat to Biodiversity is space, food and raw material for expanding human and plant establishment. Wilson 1985 described the losses of biodiversity as "*Crisis*" and this is more serious for developing countries like India. Since 1600 there have been over 1000 recorded extinctions of plants and animals species. Probably early humans were directly responsible for extinction of many large and smaller mammals. But the elimination of species is a normal process of the natural world. When species die or extinct, they will replace by others. Due to human population and its impact an ecosystems, thousands of species and sub-species become extinct every year. According to E.O. Wilson, we are losing 10,000 organisms a year i.e. 27 per day. If this will continue, we may destroy millions of plants, animals and microbes in next few decades. It is studied that 99% of all species of fossil that ever existed are now extinct.

Before man's appearance on this planet the rate of extinction was one species per thousand years. However, the pressure of human activity has drastically changed the picture. Between 1650 AD and 1950 AD about 30 species of higher animals were lost. Studies show that about 50,000 invertebrates species are losing every year. Almost one recorded as threatened. Indian wild life act 1972 schedule-I provides a list of about 150 endangered species. Disappearance of Dinosaurs along with about 50% of exististing species at the end of Cretaceous period is the best example of extinction. In India 33% of reptiles and 42 of bird species are endemic. It is said that, the current extinction rates are possibly 4 or 5 times more than the rates in the fossil record.

HABITAT LOSS

Habit loss due to human activities and other disturbances are wellknown factor. Varying human disturbances are changing ecosystems and are thus threatening the biodiversity. Due to habitat degradation wild population become more vulnerable to predators and diseases. This is especially true for wildlife, which suffer due to habitat loss and fragmentation. Habitat loss is in instalments so that the habitat is divided into small and scattered patches i.e. *habitat fragmentation*. The natural forests and grasslands, which were the natural homes of thousands species including wild life species, are going cleared day by day for conversion into agriculture lands, pastures, settlements or for development projects. Thus these species are perished due to loss of their habitat.

Due to pollution and the presence of toxic and hazardous pollutants, our fresh water resources have suffered and many species of aquatic birds, fish and mammals have been threatened. Electric power plants, which causes thermal pollution in biosphere affected all aquatic communities and their natural food chains. Marine biodiversity is also under serious threat due to human intervention. If the present rate of deforestation continue, there will be loss of about 12% birds species and about 15% plant species in South and Central America. Huge amount of habitat are lost each year as the world's forests are cut down. Rain forests, tropical dry forests, wet lands, mangroves and grasslands are threatened habitats and leading to desertification. Problems of acid rains and global climate change are also wellknown for habitat loss.

POACHING OF WILDLIFE

Poaching is another threat to wildlife. As an ancient period, hunters, collectors, and smugglers (traders) are the measure threat to a number of species including endangered species. They collected furs, hides, horns, tusks, and some live specimens, herbal products and smuggled to others for millions of

dollars. The alarming point in this case is that for one animal they killed more than one. It is an illegal trade and internationally banned.

The cost of these animal parts are surprising. The cost of Bengal tiger coat is more than one lac dollars. South American ocelot costs more than 50,000 dollars, a single orchid cost more than 5000 dollars, horns of rhinoceros cost their weight in gold. These are some examples by which we can understand the situation of trading wildlife products, which is highly profit making for poachers.

Over collection and over exploitation are the main causes of disappearance of plants of scientific and medicinal value. The reduction of genetic diversity among the cultivated species drastically limit possibilities of creating new cultivar in the future, which could be disastrous for human race. It is advisable that do not purchase the parts and products made from wild animals specially endangered species.

MAN-WILDLIFE CONFLICTS

Struggle for existence. This is applicable for both, man and wild animal. Due to habit loss animals come out of the forest and destroy the crops later on they become danger to human being. Villagers and affected people kill them. There are so many cases of conflict between man and wild life. In these cases forest department could not pacify, resulted to lack of non co-operation for wild life conservation from affected people.

Animals are prone to infection when they are under stress. Animals held in captivity are also more prone diseases. The elephants and other wild animals suffer pain and turn violent when they come to destroy the electric fancied crop field. It is noted that ill, weak and injured animals have tendency to attack man. Man and wild life conflicts also occur during human encroachment into forest area.

There are member of cases, when man eating tiger was reported several men because they like human flesh rather than animals flesh.