This requires action at all levels—individuals, the community and the government. There has been several people's movement in recent times in India such as the *Chipko Movement* (Tehri-Garhwal area, Uttarakhand) and the public agitation to prevent the construction of a hydroelectric project in the Silent Valley region. Protection of precious forests, especially in the ecologically fragile areas, should be supplemented by efforts to plant and regenerate forests.

xix. Over-grazing by cattle, horses, sheep, goats, etc. should be prevented. When grazing is a must, it should be moderate. Only those plants should be introduced in grasslands which can regenerate in shorter time.

xx. Forests should be protected against insects, pests and diseases.

xxi. Cutting and uprooting of forests should be made a punishable crime.

xxii. Forest nurseries should be established on large-scale basis.

xxiii. People should be made aware of the impact of forests on their life through advertisements, lectures, speeches, radios, televisions, etc.

Forest conservation and wildlife conservation are closely interwoven. A forest is a biotic community made up of the total population of its living things, both plant and animal. Any management practice affecting any part of such a community may well affect other elements either for good or for evil. Many of these interrelationships are still not clearly understood; enough is known, though to indicate the close tie-up between forestry and the preservation and management of wildlife. Management plans must take cognizance of both. The two cannot be separated.

sanctuaries could be created. Creation of biosphere reserves has also been put into practice since 1986.

Protected areas are ecological/biogeographical area where wildlife is conserved by maintaining habitats, natural resources and preventing poaching. They are delimited to protect biological diversity, i.e. cold desert (Ladakh and Spiti), hot desert (Thar), Wetland (Assam and NE states), saline swampy areas (Sunderbans, Rann of Kutch), mangroves, temperate forests, subtropical forests, tropical forests, tropical wet evergreen forests, tropical moist deciduous forests, tropical dry deciduous forests, tropical thorn, coral reef, etc. Protected Areas include national parks, sanctuaries and biosphere reserves.

a. **National Parks:** They are areas which are strictly reserved for the betterment of the wildlife. They are the areas maintained by government and reserved for improvement of wildlife. Cultivation, grazing, forestry-operation and habitat-manipulation are not allowed.

b. **Sanctuaries:** In a sanctuary, protection is given only to the fauna and operations such as harvesting of timber, collection of MFP and private ownership rights are permitted so long as they do not interfere with the well-being of animals.

   They are tracts of land where wild animals/fauna can take refuge without being hunted. Other activities like collection of forest products, harvesting of timber, private ownership of land, tilling of land, etc. are allowed.

c. **Biosphere Reserves:** During the past few decades, the concept of biosphere reserves has been evolved by the Man and Biosphere Programme (MAB) of the UNESCO.

India has identified certain areas to be declared as biosphere reserves. Of these Nilgiri Biosphere Reserve including parts of Karnataka, Kerala and Tamil Nadu was declared in 1986.

In a biosphere reserve, multiple land use is permitted by designating various zones. There is the Core Zone (where no human activity is permitted), the Buffer Zone (where limited human activity is allowed) and the Manipulation Zone (where a large number of human activities would go on). In a biosphere reserve, wild population as well as traditional lifestyle of tribals and varied domesticated plant and animal genetic resources are protected.

Biosphere reserves are multipurpose protected areas which are meant for preserving genetic diversities in representative ecosystems by protecting wild populations, traditional lifestyle of tribals and domesticated plant/animal genetic resources. There are some 243 biosphere reserves in 65 countries of the world. In India 14 potential sites were identified in 1979 by Core Advisory Group.

Each biosphere reserve has a:

a. Core Zone:	No human activity is allowed.
b. Buffer Zone:	Limited human activity is permitted.
c. Manipulation Zone:	Human activity is allowed but ecology is not permitted to be disturbed.
d. Restoration Zone:	Degraded area for restoration to near natural form.

National parks, sanctuaries and biosphere reserves would be the last refuse (shelter) for wild plants and animals in the coming years.

and fishing. Many are getting revenue through hunting and fishing industry by selling fire arms, fishing tackle, camping materials, etc. Government is raising its fund by providing licenses. In India, hunting is not allowed after 1972 Wild Life (Protection) Act and its amendment in 1991 and is now totally banned as the situation and status of wild animals is alarming. However, fishing can be encouraged as a sport, as it has still wide scope in our country.

The positive values of wildlife can be divided into two categories, viz. non-consumptive or intangible and consumptive or tangible. The ecological and ethical are intangible while others are of tangible values, as we get direct benefits in the form of food, money and enjoyment from these.

B. NEGATIVE VALUES

Wildlife has also certain negative values such as destruction of properties, predation and as carriers of various diseases. Wild animals like deer, wild ass, elephant and other herbivorous animals destroy the crops in agricultural field. The damage is counted more in the countries where agriculture is the prime occupation and living standard is very poor. Carnivores like tiger, panther, lion, etc. sometimes become cattle-lifters and cause hardships for the villagers. There is also loss of human life up to a great extent by the man-eater carnivores. But this is all man-made problems as we have encroached upon their any kind of habitat. Deforestation followed by fragmentation and grabing of corridors in the forest was always in practice in past and even continued especially in developing countries. Some of the wild animals act as carriers or reservoirs of certain diseases such as rabies, etc.

However, the positive values of wildlife can be far outweighed than the negative values.

There is the role played by every species (animal, bird, reptile, aquatic or amphibian) in the maintenance of natural-balance which is intangible and almost invisible. It can be seen in very simple example; reduction of food of tigers and leopards by the destruction of deer results in making them cattle-lifters. The hippopotamus in Africa is silently and invisibly connected with fish-culture as its faeces deposited in the water of lakes and streams help in the formation of phytoplankton which is the food of the tilapia, an indigenous fish of that continent used widely and suited in fish farming. The biological control measures adopted in France, England and Australia to exterminate rabbits by the introduction of a viral disease Myxomatosis, although resulted in increased crop yield, however, it deprived fox, stoat and weasel of their food making them to attack poultry birds. Before the creation of Albert National Park, the population of antelopes was maintained by controlled hunting of their predator, lions. But when the park was created and shooting was prohibited, the population of lion increased tremendously. At the same time, stopping of burning resulted in more dense vegetation. All these resulted that the antelopes could not escape from the lions and antelopes began to decrease sharply in numbers being almost nil. On the other hand, the population of lion also became scarce in lack of natural food.

To classify the wild species of a country on the basis of as to whether they are harmful (thereby justifying their control) or the reverse may be disastrous and misleading if not justified perfectly and scientifically. It is indisputable fact that every species has its place in nature playing its own role. Though the population (numbers) of individual species may be static or dynamic in the ecosystem, the interactions of

Secretary-General of the International Union for Conservation of Nature and Natural Resources (IUCN) has put it "the concept of inter-relations is particularly relevant in the observation of biological equilibrium for the naturalist, especially if we wish to interfere in such delicate balances, must be imbued with the idea that all phenomena are actually one phenomenon and that an abrupt change in of the factors in play can only have profound repercussion on the complex whole, even if he has not been able to anticipate the repercussions in his imaginations."

The wildlife conservation movement in India may be summarized as such:

a. First effort was taken by BNHS (Bombay Natural History Society) resulted as Wild Birds and Animals Protection Act, 1897.
b. The 1935 movement: Punjab gave the lead making separate Game Warden, Fauna Committees in Districts, etc.
c. Prewar period: Government of India's Conference in Delhi 1935, Wildlife Convention to be signed by all states.

   Formation of Hailey National Park in Uttarakhand; Jim Corbett and Hasan Abid Jaffry's Association for the preservation of Wildlife in Uttarakhand; Planters' shooting and fishing clubs in Bengal and South India.
d. The war period: Destruction of Wildlife by the armies stationed in India.
e. Postwar period: The 1951 Conference in Delhi, decision to give wildlife a place in India's new National Forest Policy of 1951.
f. Postindependence period: The Indian Board for Wildlife (1952), Government appointed board for advisory purposes. The Wildlife Preservation Society of India (1958), for publicity and propaganda and as a "Watchdog" on behalf of wildlife.

Wildlife (Protection) Act was framed in 1972 and subsequently being amended time to time.

In Indian condition, any management plan for its wildlife must take into account the prevailing political and economic climate, which is mainly governed by the marginal status of agriculture in the country. Therefore, the idea of wildlife as a crop should undoubtedly find a place in forest management in India. The problem behind it in the country is to save the fauna from disappearing or being reduced to the point of "no-return" while at the same time ensuring to the cultivator adequate protection from crop damage and carnivorous animals. Since wildlife is an integral part of the land and, hence, must share in the various forms of land utilization. In this way, wildlife also demands place in agricultural tracts under land use planning concept, though this aspect poses itself in our managed areas, i.e. the reserved and protected forests. In India, the main impact on wildlife is on the cultivated and grazing lands where the existing contradictions must be resolved because today in the country it appears to be a major clash between wildlife-use and human-use of the land for cultivation.

We know that animal's life depends directly or indirectly on plant life for its continued existence and the studies of such interdependence involves study of botany, zoology and animal ecology. Wildlife management is thus concerned with laws and their enforcement and is related with public administration. Further, it can be said that as an applied animal science, wildlife management is a form of practical or applied zoology and the relationship which wildlife management relates with zoology is similar to that which forestry has with botany. Wildlife ecology has the same relation to wildlife management that silvics has with silviculture.