# Wildlife Conservation in India

I. Introduction

The term wildlife means all those naturally occurring animals, plants and their species, which are not cultivated or tamed.

Thus, the wildlife is defined as the sum total of animals excluding domesticated animals and cultivated plants. In short, the wildlife may be defined as 'life in any form', plant or animal, existing in its natural surroundings i.e. natural habitat (Mahajan, 1981).

At global level about 1.6 million living forms have been identified these include green plants and fungi, various species of insects, other invertebrates, vertebrates and microorganisms.

Scenario at Global level

Sales

Microorganism
& Plant spp
3,92,700
24.38%

Animal spp
12,17,645
75.62%

■ 1st Qtr
■ 2nd Qtr
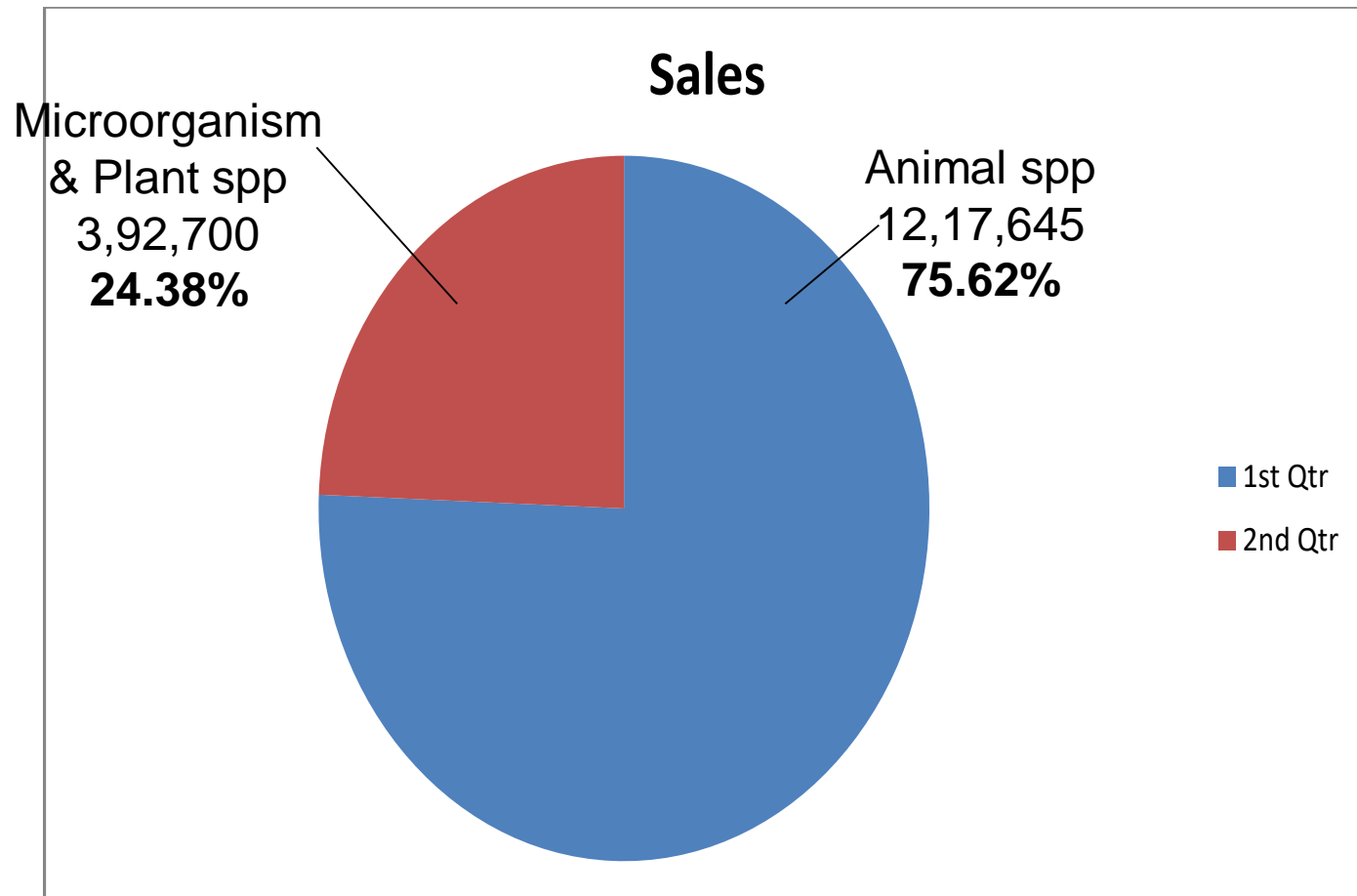
At Global level

Indian subcontinent represents a very rich wealth of natural beauty and diversified wildlife. The fauna of India, according to Khajuria (1957), include 400 species of mammals, 1200 species of birds, 350 species of reptiles and 29,70,000 or more species of insects.

However, the data based on "State of India's environment: The citizen" 5th report Part II 1999 shows that it is a great natural resource comprises about 81,251spp which include –

At Global level(Contd.)

(1) **Arthropods**   **60,383**   **74.32%**
(insects, crustacean, and others)
(2) **Other invertebrates**   **8,329**   **10.25%**
   (including hemichordates)
(3) **Protochordates**   **116**   **0.14%**

(4) **Pisces**   **2,546**   **3.13%**

(5) **Amphibians**   **204**   **0.25%**

(6) **Reptiles**   **446**   **0.55%**

(7) **Aves**   **1,228**   **1.51%**

(8) **Mammals**   **372**   **0.46%**

(9) **Protista**   **2,575**   **3.17%**

(10) **Molusca**   **5,050**   **6.22%**
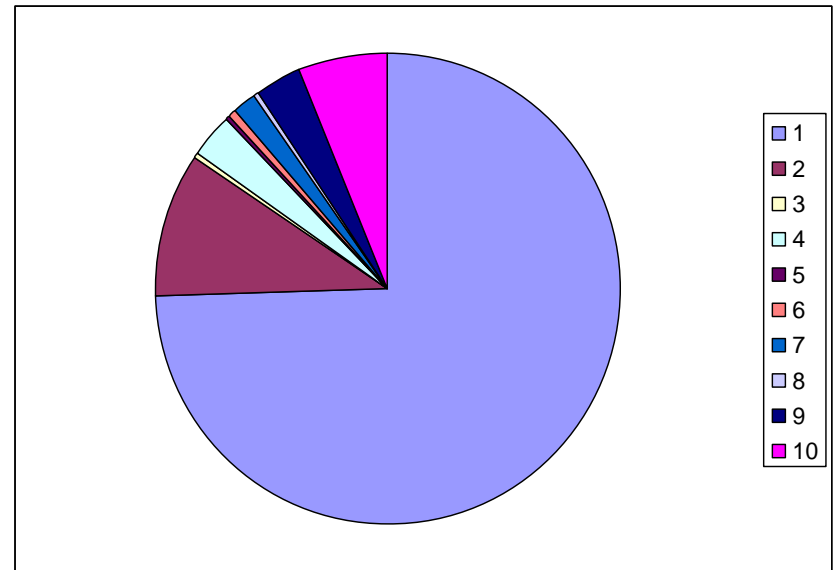
Flora in india

The flora of the country can boast of 49,219 species which constitute 15% of the total plants known in this world. The distribution record of the flora in india is as follows:

(1)	Fungi	23,000	46.73%
(2)	Algae	2,500	5.08%
(3)	Bacteria	850	1.37%
(4)	Angiosperms	17,000	34.53%
(5)	Gymnosperms	64	0.13%
(6)	Pteridophyte	1,022	2.08%
(7)	Bryophytes	2,843	5.78%
(8)	Lichens	1,940	3.94%
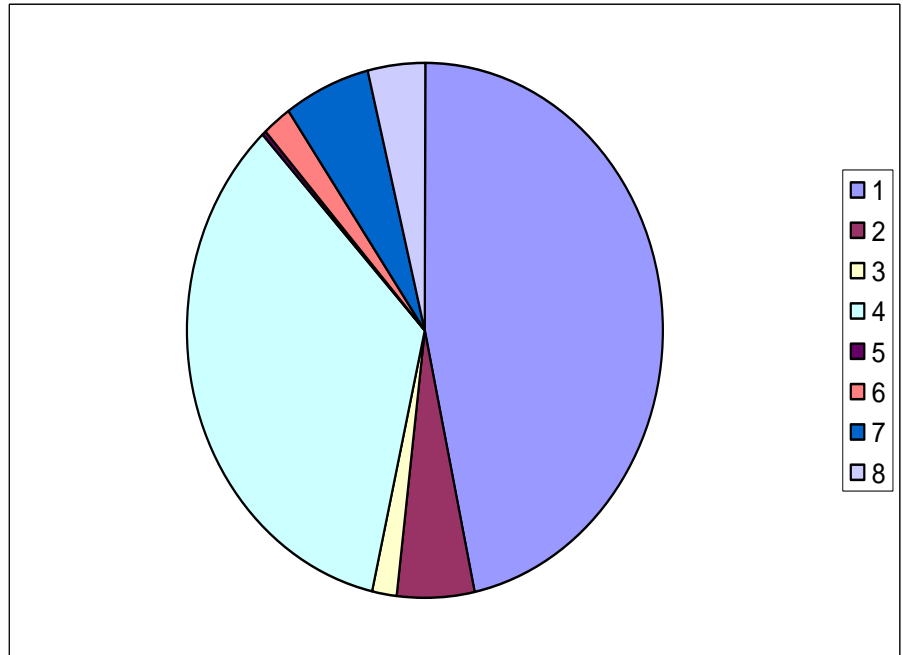
II. Depletion in Wildlife

Animals constitute bulk of food for mankind since the beginning, and due to several human activities, several animal species either have become extinct rather to say exterminated or facing serious threat for their existence.

Depletion in Wildlife(Contd.)

During a period of approximately 200 years the world has lost by way of extinction, more correctly extermination, about 160 mamals,88 birds through man's interference with nature. According to IUCN 25,000 plant species are threatened with extinction.

Depletion in Wildlife(contd.)

In India, nearly 132 plant species are struggling against extinction and 24 plant species possibly have become extinct, as they have not been sighted since more than last 100 years.

However, 01 mammal and 03 bird species have become extinct, and 7 species of mammals, 23 of amphibians and reptiles, 40 of birds and 130 of butterflies and moths are endangered according to Wildlife (Protection) Act, 1972 as amended in 1991. Similarly, about 1,500 flowering plant species are under varying degree of threat to extinction.

III. Causes of depletion in Wildlife

The constant increase in socio-economic pressure has been building up since last 50-60 years in India.

The population growth, the major factor has resulted the greater exploitation of natural resources and also the large scale deforestation to fetch more and more land for agriculture and buildings.

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Causes of depletion in Wildlife (Contd.)

Due to destruction and hampering of natural habitat wildlife not only has been pushed to small pockets but also due to lack of shelter is exposed to the poachers. As a result their number is decreasing rapidly.

Thus, the main factors causing depletion of wildlife are as follows:

Causes of depletion in Wildlife (Contd.)

1. Environmental changes arising from alteration, degradation or destruction of natural habitat.

2. Reckless killing for flesh, feather, fur, skin, antelers, horns, nails musk pod etc.

According to a study the price in the international market of some of the above was as under in the year (1999):

Rhino horn	Rs. 62,400/kg	(Ramesh Bedi, 1984)
Rhino horn	$ 15,000/ kg	
Ivory	$ 150/kg	
Ivory	Rs. 2,000-25,000/kg	
Musk pod	$ 44,000-60,000//kg	

As the above mentioned prices are very old ones we can presume the present rate.

Causes of depletion in Wildlife (Contd.)

3. Deforestation

4. Agricultural expansion

5. Unrestricted grazing

6. Speeding urbanization

7. Other factors including forest fires, road construction and hydro electric projects, etc.; and,

8. Unregulated commercial exploitation of forest and its produce.

IV. Need for wildlife conservation and management

(I) Maintaining Ecosystem Stability

Ecologists have demonstrated that there is a cycle of energy transfer connecting every organism, and forming a food web. When a link in this food web is destroyed the whole cycle of the ecosystem is disrupted and in turn poses a pressure on the ecological tuning of the nature.

(I) Maintaining Ecosystem Stability

Changes in the environment have been responsible for evolution of new species and extinction of others. The two processes have gone side by side. Natural wave of extinction is essentially man-made due to ever increasing needs (greed) of humankind..

Maintaining Ecosystem Stability (Contd.)

We must not forget that

every thing is linked with every thing else, and even a slightest disturbance in one would effect the other

(ii) Prevention of Natural Genetic Stock

During the past 100 years or so the rate of decline has been particularly **very fast throughout the world and there are estimates that at least 10% of the living species are either extinct or threatened or vulnerable. Humankind is involved in what has been called as specide (Swaminathan, 1978).**

Prevention of Natural Genetic Stock(Contd.)

One can not imagine a situation if *Penicillium* had been eliminated from the earth before mankind made use of it as antibiotic or *Cinchona* become extinct before quinine was discovered and a cure for malaria. We do not know which plant, animal or microorganism may become a useful asset to mankind in future. It is, therefore, in our interest to protect them all.

(iii) Economic benefits

Apart from several direct benefits from wildlife, like medicinal, food, foder, timber, vegetable produce like, paper, honey, wax, rubber, milk, flesh, egg, fishery etc. Das (1980) estimated the value of a tree and quantified the benefits from a medium sized tree of 50 tonnes of weight during the life span of 50 years).

Economic benefits (Contd.)

In computing these indirect values, value of timber, flower, fruit or biomass has not been considered as it comes to merely 0.3% of the real value of a tree. The quantified value of a tree came to be 15 lakhs (Das, 1980)

Value of a tree
(During 50 years of life span)

(i) **Production of Oxygen**   Rs. 2.50 Lakhs

(ii) **Conversion of animal protein**   Rs. 0.20 Lakhs

(iii) **Control of soil erosion and soil fertility**   Rs. 2.50 Lakhs

(iv) **Recycling of water and controlling humidity**   Rs. 3.00 Lakhs

(v) **Sheltering of animal and plant species**   Rs. 2.50 Lakhs

(**vi)Air Pollution control**   Rs. 5.00 Lakhs

Total: **Rs.15.70 Lakhs**

Another estimate
(During a period of 50 years)

(a)	**Oxygen**	Rs. 5.30 Lakhs
(b)	**Recycling of soil fertility**	Rs. 6.40 Lakhs
(c)	**Soil erosion control**	Rs. 6.40 Lakhs
(**d**)	**Air Pollution control**	Rs.10.50 Lakhs
(**e**)	**Shelter to birds and animals** and flower, forest,food and fodar	Rs. 5.30 Lakhs
	Total:	**Rs. 33.60 Lakhs**

(iv) Tourism

Wildlife of the country may attract people from abroad and earn foreign exchange. The tourism industry of Kenya (East Africa), based on its wildlife, ranks 3rd after coffee and sisal.

Trade in live as well as dead animals not only support thousands of people but also earn foreign exchange. Sanctuaries, wildlife parks are the source of income. People come to watch wildlife and pay for that.

(v) Game Value

Wildlife has its worth as game also.

People enjoy the ride and camera shooting into the wild. It is really a great fun watching big cat or rhino while enjoying elephant ride.

(vi) Scientific value

Study of wildlife in Biology and medicine are of direct importance.

For example, Sea urchins have helped in understanding the human embryology; a desert toad in determination of early pregnancy, Rhesus monkey in presenting the knowledge of Blood groups in man and antlers of deer in determining the degree of radioactive contamination in the environment.

(vii) Aesthetic value

Human psychology is such that beauty and elegance have always been the source of freshness and motivation.

A world without natural environment, trees, flowers, fragrance, beasts, thick forest, streams, springs mountains etc. would have been the worst place to live in.

V. Wildlife Management

Wildlife management is also the field of applied ecology that rank high in public interest.

According to **Aldo Leopold (1953)** *"Conservation is a bird that flies faster than the shot we aim at it."*

One objective of wildlife conservation is to prevent the extinction which is an irreversible process.

Objectives of wildlife conservation and management

The objectives of wildlife conservation are as below-

(i)   Maintenance of the ecological equilibrium between biotic and a biotic components of the ecosystem.

(ii)   Preservation and prevention of the total gene pools of the different species at the global level.

(ii)   Ensuring the optimum utilization of parent animal and plant species.

Conservation and Management(Contd.)

However, the wildlife conservation must be based on the following outlines:

1. Wildlife values include al the rights and interests that the various groups of our population have in this resource.

2. Wildlife is an organic resource and can be managed on a sustainable yield basis.

3. Wildlife is the product of land, therefore, management practices are conditioned by the other uses to which the land is subjected.

Conservation and Management(Contd.)

4. Wildlife is a commodity and as such is answerable to the ordinary rules of investment.

5. Wildlife can not be considered separate and apart from its environment as a consequence its management must make provisions for satisfactory environment.

6. Wildlife environment in most of the instances have values in themselves in addition to their values to wildlife.

7. Income from wildlife in some instances be sufficient to withhold the charges accruing on wildlife that are being managed for the purpose in addition to wildlife production

Management Measures

Any conservation and management strategy should include the following management measures to meet the objectives:

1. Protecting natural habitat through controlled exploitation of species.
2. Maintaining their viable numbers in national parks, sanctuaries, game reserves, botanical gardens etc.
3. Survival of most endangered species through maintenance of breed stock in Zoological parks.
4. Establishment of flora reserve and ecosystem reserves in the country.
5. Protection through coordinated legislative measures.

Protection and Enrichment of wildlife population

1. The betterment of existing sanctuaries,

2. To create the buffer belt around sanctuaries

3. Improvisation of restriction on export of rare animals and important plant species.

4. Use of scientific methods of rearing for enhancement of population size;

5. Inclusion of **"Wildlife conservation and its benefits to the society"** in schools, colleges and university curricula.

Concluding Remarks

Further, in order to manage National Wildlife Biological Data of different species is essential to be investigated.

Thus, in a nutt shell we can say that the wildlife conservation in India is a multidimensional area which not only includes, the wildlife but also the socio-economic aspects of the Humen being.

Thank You

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