

Nature Reserves:

- Nature reserves may also be known as a natural reserves, wildlife refuge or sanctuaries, biosphere reserves, or nature conservation area.
- These are areas selected to preserve and protect, in perpetuity, representative (typical) and special natural ecosystems, plant and animal species, features and natural processes.
- Scientific research and education are the primary uses of nature reserves and recreation is generally restricted.

- These are areas of land that is protected and managed for various ecological reasons.
- It could be designated to protect and preserve wildlife, flora, fauna, geological features or other special interest that plays a part in our ecosystem and Earth's biodiversity.
- Habitats that have its flora and fauna near endangerment are of a particular concern.
- They are often protected and conserved in nature reserves to prevent them from extinction and also to provide study, research and nature appreciation opportunities.



Nature is in our hand to nurse

- The first **nature (or ecological) reserves** grew out of efforts associated with the International Biological Program (IBP), conducted in 58 countries from 1964 to 1974.
- These efforts aimed to identify and preserve ecosystems of the world for present and future biological research and education, for preservation of species, their genes and habitats and as benchmarks for comparison with ecosystems managed by humans (Peterson, 1974).

- In Nova Scotia, the IBP research team identified sixty-nine sites, consisting primarily of fragile, relatively undisturbed ecosystems such as relict old-growth forest, sand dunes, river floodplains, coastal islands, lakeshores, and estuaries.
- Final report called for ecological reserves legislation to be enacted by each province (IBP-CT, 1974).
- The first **nature (or ecological) reserves** grew out of efforts associated with the International Biological Program (IBP), conducted in 58 countries from 1964 to 1974.

- In 1981, the province proclaimed the ***Special Places Protection Act***, which provided for the designation of "ecological sites".
- The Special Places Program was assigned to the Department of Education (Nova Scotia Museum) and over the period 1981-1994, additional sites of ecological significance were identified and seven ecological sites (known as "nature reserves") were designated under the Act, including two on private lands, with landowner permission.



Nature reserves in Cameroon



Tiger reserve in India



Nature reserves of habitat of Singapore

- In 1994, responsibility for protected areas, including nature reserves, was transferred to the Department of Natural Resources (DNR).
- Work continued towards the identification of new sites of ecological significance and the designation of additional nature reserves and in 1998, responsibility for protected areas moved to the Department of the Environment.
- **Nature reserves** differ from a national park usually in being smaller and having as its sole purpose the protection of nature.

- They protect very specific habitats and form a representative network of the richness of the territory.
- These are created by the State and under its responsibility.
- Since 2002 the regions have the possibility of creating regional reserves.
- The national and regional nature reserves form the network Nature Reserves of France.
- **Nature Reserves** are protected under the ***Special Places Protection Act***.
- Many countries have adopted the International Union for the Conservation of Nature (IUCN) system of categorization to classify their protected area in accordance to their management objectives.

➤ The different categories consist of:

- *Strict Nature Reserve*
- *Wilderness Area*
- *National Park*
- *Natural Monument of Feature*
- *Habitat/Species Management Area*
- *Protected Landscape/Seascape*
- *Protected Area with sustainable use of natural resources*

➤ The objectives of **nature reserves** conservation are enumerated by law:

- *Protection of animal and plant species and habitats in danger of disappearing*
- *Protection of remarkable habitats (biological or geological)*
- *Protection or creation of stages on the great migration routes of wildlife*
- *Realization of scientific or technical studies that are indispensable for development of human knowledge*

➤ **Nature reserves** are established to:

- *Provide areas suitable for scientific research and education*
- *Protect representative examples of natural ecosystems*
- *Provide examples of ecosystems that have been modified by humans and offer an opportunity to study the natural recovery of ecosystems from modification*
- *Protect rare or endangered native plants or animals in their natural habitats*
- *Provide educational or research field areas for the long-term study of natural changes and balancing forces in undisturbed ecosystems*

Human Population and Growth:

- A **population** is defined as a group of individuals belonging to the same species, which live in a particular geographical area at a given time and have the capability of interbreeding.
- All individuals within a certain **population** usually have a common, binding characteristic. **Population growth** is the increase in the number of people living in a particular area. **Global human population growth** is around 75 million per year or 1.1% per year.

- The global population has grown from 1 billion in 1800 to 7 billion in 2012.
- Out of which 93 % is growing in developing countries.
- Reasons for **population growth** are:
 - Spread of public health programmes in developing countries.
 - Rise in food production after World War II.
 - Every second 4-5 children are born and 2 people die.
 - Nearly 2.5 persons get added every second.

- The last 100 years have seen a massive fourfold increase in the population, due to Medical advances, lower mortality rates and an increase in agricultural productivity made possible by the Green Revolution.
- The rapid growth of the global population results from the difference between the rate of birth and death.
- **Population growth** shows the dramatic increase in global population in the past 160 years.

- It will continue till equilibrium is achieved (no. of births = no. of death).
- Year wise **global population growth** trends in billions are given as:

Years	Population (in billions)	Years	Population (in billions)	Years	Population (in billions)
1700	0.6	1960	3	2050	9.1
1850	1	1987	5		
1930	2	2000	6.1		



➤ The projected population for first 10 largest countries for 2050 is:

S. No.	Countries	Population (In Millions)	S. No.	Countries	Population (In Millions)
1	India	1628	6	Pakistan	285
2	China	1369	7	Brazil	244
3	United States	404	8	Bangladesh	211
4	Indonesia	312	9	Ethiopia	188
5	Nigeria	304	10	Congo	182