Ecosystem Resources

Definition of an Ecosystem

- An ecosystem consists of living (plants, animals) and non-living (soil, water, air) components that interact with each other.
- Provides essential resources such as clean air, water, and fertile soil.

Importance of Ecosystem Resources

- Ecosystems sustain life on Earth by providing natural resources like forests, rivers, minerals, air, and soil.
- These resources are necessary for survival and human development.

Examples of Natural Resource Usage

- **Sunlight** Provides light and heat.
- Water Supports hydration, agriculture, and energy production.
- Plants and Animals Provide food and raw materials.
- Minerals & Forests Used for construction, tools, and industries.

Human-Made Resources

• Natural resources are transformed by human effort into useful products.

Examples: Furniture, electric bulbs, solar panels, bicycles, etc.

Historical Use of Natural Resources

1. Indus Valley Civilization (3300–1300 BCE)

Relied on Indus River for irrigation, transportation, and fertile soil.

2. Ancient Egypt

The Nile River was crucial for agriculture due to its annual floods.

3. Coal and Oil Usage in History

- 2000 BCE (China): Coal used for smelting copper.
- 347 CE (China): First recorded oil well, using bamboo pipes.
- **1859 (USA):** Edwin Drake drilled the first commercial oil well in Pennsylvania.

4. Forest Conservation in History

- 3rd century BCE (India): Emperor Ashoka established forest reserves.
- **1872 (USA):** Yellowstone National Park became the world's first national park.

Types of Natural Resources

- **1.** Renewable Resources (Replenished naturally in a short time)
- Air Constantly cycled through natural processes.
- Water Renewed through the water cycle.
- Forests Trees regrow if managed sustainably.
- Soil Replenished through organic decomposition and weathering.
- 2. Non-Renewable Resources (Limited supply, take millions of years to form)
- Coal

Minerals

Petroleum

Rocks

Natural Gas

Impact of Human Activities on Natural Resources

- Burning fossil fuels (coal, petroleum, gas) leads to air pollution.
- Industrial and vehicle emissions contribute to poor air quality.
- Urban areas suffer from higher pollution levels compared to rural areas.

Solutions: Development of electric vehicles to reduce pollution.

Conservation of Natural Resources

- Sustainable practices to protect natural resources:
 - Walking or cycling to reduce vehicle emissions.
 - o Using public transport to lower carbon footprints.
 - o Switching to renewable energy (solar, wind) to reduce reliance on fossil fuels.
 - Reducing waste through recycling and reuse.
 - o Planting trees and preserving forests to maintain ecological balance.
- Quote on Resource Conservation (Mahatma Gandhi)

- "Earth provides enough to satisfy every man's need but not for every man's greed."
- Emphasizes moderation and sustainable living.

Conclusion

- Natural resources are the foundation of life and development.
- Their sustainable use ensures availability for future generations.
- Conservation efforts help maintain ecological balance and support long-term survival.