

# 3

## Natural Resources (Natural Vegetation and Wildlife)

### Lesson Plan

#### Contents

- ▶ An overview of the biosphere and the ecosystem
- ▶ Understanding the natural vegetation and wildlife that are a part of the ecosystem

#### Objectives

- ▶ To understand what constitutes the biosphere and the ecosystem
- ▶ To learn about two more natural resources: Natural vegetation and wildlife
- ▶ To know about the interaction of the elements of the ecosystem
- ▶ To appreciate the need to preserve the ecosystem and its components

#### Teacher's Aids

- ▶ Globe
- ▶ Pictures, charts, atlas and wall maps
- ▶ Blackboard
- ▶ Internet

#### Tips for Teacher

- ▶ Explain the biosphere and the ecosystem in it as well as the natural resources that are components of it.
- ▶ Show pictures, videos, etc., to explain the connection between vegetation and wildlife in different regions.
- ▶ Wherever required, brush upon what has been learnt in the previous classes, such as lithosphere, atmosphere and hydrosphere.
- ▶ Students should be encouraged to know places, locations and their placement on the maps.

#### Background and Reading

- ▶ Read the lesson aloud and explain, sharing the aids, etc., pausing to examine and explain the data in the boxes.

- ▶ Particularly focus on natural vegetation and wildlife, and their interdependence and interaction.

### **The Biosphere and the Ecosystem**

- ▶ Earth unique in sustaining various forms of life–water and air–conditions favourable for evolution and growth of plants [the first form of life on Earth]–followed by animals and human beings–life-bearing layer of the Earth is called biosphere–narrow zone of contact between atmosphere, lithosphere and hydrosphere.
- ▶ Approximately 3 lakh plants; 10 lakh species of animals–the types of plants and animals in a region depend on their physical conditions.
- ▶ All organisms interact with the physical environment and with one another for survival–the life-supporting system on Earth is called the ecosystem.

### **Natural Vegetation**

- ▶ The different types of plants growing naturally–natural vegetation–distribution influenced by amount of sunlight and rainfall.
- ▶ Classified as forests, grasslands, shrubs.
- ▶ Plants provide timber, natural habitat for animals, oxygen we breathe, fruits, nuts, gums, medicine, etc.

### **Forests**

- ▶ Cover about 30% of land surface–being cleared to provide land for cultivation, mining, industries, settlements, roads and railways.
- ▶ Variation in temperature and amount of rainfall from place to place and time to time–hence forests also vary–no forests where it is too cold or too dry.
- ▶ Forests are places where trees grow closely together–two main types: Evergreen and deciduous.
- ▶ Evergreen–trees of different species shed their leaves at different times so forest always appears green.
- ▶ Deciduous–shed their leaves during dry season–helps conserve moisture and reduces loss through transpiration.
- ▶ Classification based on location–tropical and temperate.
- ▶ Tropical forests–equatorial and monsoon regions–equatorial: Dense; valuable hardwood like mahogany, ebony, rosewood–monsoon: Deciduous; economically valuable trees like sal, teak, shisham and also bamboo.
- ▶ Temperate forests–mid-latitude belts–broad-leaved evergreen forests–temperate deciduous forests–oak, fig, beech, eucalyptus, ash, maple, hemlock.
- ▶ Coniferous forests–also called boreal forests–only in Northern Hemisphere–tall trees, conical fruit, thick needle-shaped leaves–softwood, such as pine, spruce, cedar, fir.

## **Grasslands**

- ▶ Large areas covered – regions of low rainfall – main occupation of people is rearing sheep and cattle.
- ▶ Tropical grasslands – savanna – between equatorial forests and hot deserts – temperate grasslands – more widespread – prairies, steppes, downs, etc.
- ▶ Distribution studied in Class VII – now we study how to conserve the natural vegetation and meet people's needs.

## **Conservation of Natural Vegetation**

- ▶ Forests and natural vegetation important components of environment and economy.
- ▶ Early man – dependent on plants and animals available – population density low then – needs limited – so did not conserve.
- ▶ Scientific progress and technological development – human beings utilising natural resources on a larger scale – main reasons for degradation of natural vegetation: Rapidly growing population, diseases of trees, forest fires – human activities changing climate.
- ▶ Human activity and climatic change causing loss of natural habitat for plants and animals – many on verge of extinction – destruction accelerated by deforestation, construction of roads, railways, buildings, industries, soil erosion, tsunamis, landslides, etc.
- ▶ Conservation – important method: Plant more trees – afforestation – prevent felling of young and immature trees – create awareness among people to conserve forests – conservation does not mean stopping usage, but using resources wisely.
- ▶ Awareness programmes – Van Mahotsava, social forestry, Chipko Movement, etc., be encouraged at local and regional levels – take steps against avoidable negligence.

## **Wildlife**

- ▶ Covers plant and animal life in natural habitat – in an ecosystem, all organisms interdependent – no exact idea of actual number of animals, birds, insects and reptiles on earth – about a million species listed and new ones being discovered.
- ▶ Each part of Earth – its own group of animals, some distinct there, some elsewhere too – kangaroos in Australia, llamas in the Andes, penguins in Polar regions, etc.
- ▶ Natural habitat facilitates growth, development, reproduction, shelter, food, etc.
- ▶ Wildlife in different continents given below:

### **Wildlife of Africa**

- ▶ Great variety – elephants, giraffes, zebras, lions, hippos, rhinos, pythons, etc. Many wildlife sanctuaries and national parks developed to provide natural habitat.

### **Wildlife of Asia**

- ▶ Large variety – tigers, elephants, rhinos, monkeys, leopards, yaks, pandas, lions, sloths, herons, foxes, etc. – fur-bearing animals like mink, sable, musk ox, polar bear, etc., in the arctic region.

### Wildlife of Australia

- ▶ Some unique species called marsupials–kangaroos, koalas, etc.–pouch near stomach for carrying babies–lyrebird, flightless emu, kookaburra, platypus, etc.–man hunting and killing these for food, fur and hide, etc.

### Wildlife of Europe

- ▶ Not rich in wildlife–most forests cleared for settlements, industries and agriculture–wild boars, wolves, antelopes, polar bears, partridges, cuckoos, skylarks, etc.–many farms for rearing fur-bearing animals like mink, sable, ermine, etc.

### Wildlife of North America

- ▶ Large variety still–northern part very cold: Mostly fur-bearing animals like reindeer, arctic fox, polar bear, blue fox, musk ox, etc.–other parts: Hedgehogs, beavers, bison, elks, tapirs, crocodiles, pumas, moose, mountain goats, etc.

### Wildlife of South America

- ▶ Large variety–especially in Amazon Basin–distinct animals like anteaters, rhea [a flightless bird like emu] armadillos, anacondas, in marshlands, and llamas in the Andes–pumas, jaguars, etc., constitute a large variety of birds and reptiles.

### Conservation of Wildlife

- ▶ Natural habitat of many species of wildlife disturbed by human activity–indiscriminate hunting for food, fur, feathers and skin led to extinction of many species–this upset ecological balance.
- ▶ Poaching in many places–animals like tigers, elephants, foxes, deer, black bucks, rhinoceros, crocodiles, lions, etc.–sharp decline in such animals.
- ▶ Must create awareness for conservation of wildlife–many countries have established biosphere reserves, national parks, wildlife sanctuaries, for protecting wildlife and to maintain ecological balance–many countries have laws to protect wildlife and natural vegetation–hunting for pleasure is banned–organisations like World Wildlife Fund [WWF], Greenpeace, TV channels like Animal Planet and National Geographic are trying to save wildlife and the Earth.

### **CITES**

- ▶ Convention on International Trade in Endangered Species of wild flora and fauna–helping this work through international agreements between countries–saved species like dolphins, cacti, corals, orchids, aloes, etc.

## Assessment Corner

### **Oral Assignment**

- A. Ask for answers at random from the students. Confirm the right answers. Let them write down the correct answers if they like in their books.

## Written Assignment

- B–F. The teacher has two options—(i) Either do these exercises orally first and then ask the students to write them down. OR (ii) Ask the students to write the answers on their own. Then the teacher can announce the correct answers to the students and they can ask their partners to cross-check them.

In either case, the answers can be written as homework and the teacher can check them in the class.

## Think Tank

- G. **HOTS questions:** Discuss the questions in the class and let the students write the answers to G and H as homework. Teacher should assess individual work.