

18. The Environment and Us

Can you tell?



With the help of the questions below, explain what would happen if forests are cleared on a large scale.

1. Will water and food sources for living things grow or dwindle? Why?
2. Will the living things look for shelters elsewhere or stay on? Why?
3. Will the space occupied by the plants and animals increase or decrease? Why?
4. Will the number of living things increase or decrease? Why?

Deforestation

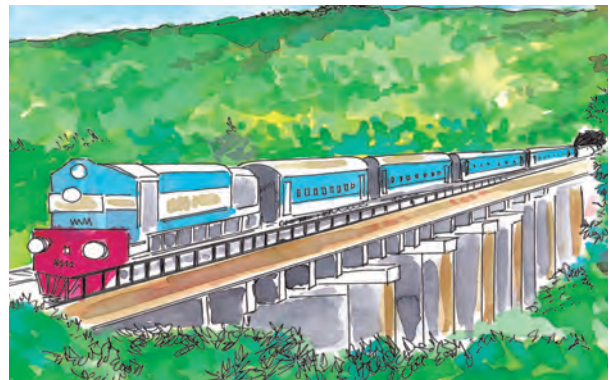
The population of the world is now close to six hundred crore. Man is developing new technology to meet the needs of all these people, and is using up more and more land and water resources for this purpose.

Open spaces are required on a very large scale for agriculture, housing, industry, and for building roads and railways. Forests are cut down to make place for them.



A road

Marshy or low-lying areas are filled to reclaim the land.



Railway

The environment provides shelter to different kinds of living things. There are many types of plants in forests. Birds build their nests in trees. Animals like the bear, deer, monkey, elephant, tiger all live in the forest, i.e. they find shelter in a forest. All their needs are met in the forest. If forests are reduced, biodiversity is also depleted.

Use your brain power !



If a dam is built at a particular place, what changes will be seen in the environment?

Can you tell?



Time and again, we hear news of certain animals and plants facing the threat of extinction. Reasons for the threats are also given. Collect such news items. Fill in that information in the following chart and display it in your class.

Animal or plant	What was the ill effect ?	Reasons given in the news

Pollution

You have seen how water sources get polluted if waste water is let into them without processing.



Waste water flowing out from a factory into the surroundings

Waste water is also given out from factories into their surroundings. If water from such polluted sources keeps soaking into the soil, the soil becomes infertile.



Waste water from factories enters water bodies

Chemical fertilizers and pesticides are used on a large scale for agriculture. They seep into the soil or finally flow into rivers with rainwater.

Due to several such reasons water and soil get polluted. This is dangerous for the plants and animals there. Their number reduces and eventually they die out altogether, that is, they become extinct.

Can you tell?



- (1) What could be the reasons of air pollution?
- (2) What are the different purposes for which fuels such as petrol, diesel, kerosene, natural gas, coal and wood are used?

Fuel is used in all homes. Besides, there are big industries and factories in which fuel is used in great quantities.



Poisonous gases spouting out of chimneys of factories

On the one hand, tremendous quantities of carbon dioxide enter the air due to burning of fuels. On the other hand, due to large scale deforestation, the number of trees available for absorbing this carbon dioxide is dwindling. As a result, the proportion of carbon dioxide in the air is rising continuously. When the proportion of carbon dioxide in the air rises, it leads to rise in temperature. We see such a temperature rise in all parts of the world.

Besides, when fuels are burnt in vehicles, they give out certain poisonous gases as well as smoke. Industries also let out some poisonous gases into the air. This leads to air pollution on a very large scale.

Can you tell?



You see a food chain in the picture above. One of the links is missing. What effect will it have on the grasshopper? On the bird? What picture should there be in the blank space? If this living thing really died out, what would be the threat to the entire living world? Discuss your answers in the class.

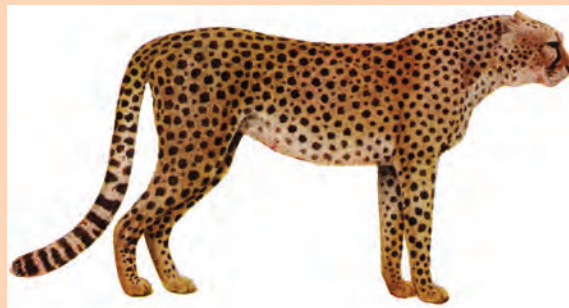
The need to maintain environmental balance

Due to human intervention in nature, large scale changes are taking place in the air, water and land. Also, these non-living or abiotic components are getting polluted. As a result, the existence of living things is threatened, while several living things have already become extinct. If one factor of the environment is damaged, its relationships with other factors also get affected, and environmental balance is disturbed. From time to time, some of the living things on the earth become extinct. But today this process is taking place at a much faster rate. This is a threat for the whole living world.

Do you know ?



If the different types of plants and animals become extinct one by one, many of the links in the different food chains will be lost. Many scientists believe that this will affect the entire living world on the earth and the balance in nature will collapse.



Indian cheetah - An extinct animal

Our needs and the environment

Food, water and clothes are the needs of all people. We use a lot of things to meet these needs. Besides, we use many means and devices for the purpose of studies, sport, hobbies and entertainment. We even stock up these things so that they will be available to us whenever we need them. All these things are obtained by using materials from our environment. All the people in the world have similar needs and desires. As a result, the environment is being degraded rapidly.

We need to be aware that we ourselves are a part of nature. If the balance of nature is disturbed, it will adversely affect human beings, too.

We need to take steps to prevent the degradation of the environment. The steps should mainly include using our means frugally and recycling used articles. Such measures should be practised sincerely by each and every person.

Let us resolve !

Let us all ensure that no action on our part will cause pollution or cause harm to living things. Let us make all possible efforts for the conservation of the living world.

Speak your mind and discuss.

- How much stock of the necessary things should we keep with us?
- Discuss with respect to each of the following : water, food, clothes.

Global efforts for protection of the environment

Several projects are being implemented at the international level to maintain the balance in nature. It is important to raise the awareness of people all over the world about the threat to environmental balance. Many countries of the world are enacting laws that will help to prevent the pollution of air, water and soil.

Efforts to maintain biodiversity

Biodiversity parks : An area which is reserved for the purpose of protecting and conserving the biodiversity of a region is called a 'biodiversity park'. In these parks, biodiversity is both preserved and studied. People visiting such a park enjoy being close to nature. This leads to more concern for nature.

National parks : Some areas which are important for the protection and conservation of wildlife are reserved for them. For example, the Kaziranga National Park, the Tadoba National Park.

Sanctuaries : Certain forest areas are reserved for the protection and conservation of a particular animal or plant. Such a reserved area is called a sanctuary. For example, the Radhanagari Sanctuary for bisons.

If the plants on the earth are destroyed the numbers of animals also fall. That is why it is necessary to protect plants in

forests. If deforestation is stopped, and instead tree plantation is stepped up, animals that depend on plants will get protection and thrive.





Mayani lake has formed due to a dam built on the Chand river in Satara district. Flamingos from the Siberia region in northern Asia migrate to this lake. Here, they build nests and lay eggs. Once the baby birds grow big enough, they return with them to Siberia.

In the recent past, as the water level in the dam had fallen, the flamingos had stopped coming. However, the lake has now been declared a sanctuary for birds.



Flamingos and their nests

There is a Maldhok (Great Indian Bustard) sanctuary at Nannaj in Solapur district. These huge weighty birds are famous for their graceful gait. These birds live in open grasslands. They feed on insects.



Great Indian Bustard – male

As they are hunted for their meat and their eggs, their number is fast dwindling. Maharashtra State has declared the Nannaj area a sanctuary for the Great Indian Bustard. Deer are also found in these grasslands.



A female bustard and deer

About 50 km from Pune on the Pune-Ahmadnagar highway, the village of Morachi Chincholi is famous for its peacock population. The old, well-looked after tamarind trees here have created a favourable environment for the birds. Peafowl have found sanctuary in this village.



Devrais- a boon for all living creatures!

Indian culture gives importance to the protection of forests. The Devrai is an example. People believe that a Devrai is really a jungle reserved for god. No tree or plant in a Devrai is ever cut. That is why, all trees in a Devrai are safe even today.

Maharashtra has many Devrais. In Madhya Pradesh, they are known as 'Sharanvan'. Devrais give shelter not only to the plants but also to the animals that live there. Hence, Devrais can be called the sanctuaries of ancient times.



Devrai

Always remember –



Nature provides enough for every man's need, but not for every man's greed.

What we have learnt –



- There are inter-relationships between all living and non-living things in the environment.
- Different kinds of plants, animals and micro-organisms are found in different regions.

- The balance between the cycles of the various gases in the atmosphere, the water cycle and food chains has been maintained for thousands of years.
- Pollution of water is a threat to aquatic plants and animals.
- We shall all have to make efforts to stop the degradation of the environmental balance caused by human intervention.
- Devrais, Bio-diversity Parks, National Parks and Sanctuaries are created for the conservation of plants and animals.

Exercises

1. What's the solution ?

Rivers and lakes are filled with water hyacinth.

2. Use your brain power !

What would happen if no kites (birds) are left in a particular region? Which living things would increase in number? Which would decrease?

3. Answer the following questions.

- (a) What is meant by migration?
- (b) Describe the lifecycle of birds.
- (c) Give two causes of air pollution.
- (d) For what purpose do we use land obtained by clearing forests ?

4. Give reasons.

- (a) It is important to conserve the living components of the environment.
- (b) The numbers of wild animals are falling day by day.

5. True or false ?

- (a) Dead plants and animals are abiotic components.

- (b) It is necessary to conserve biodiversity.

6. Classify the following as natural or man-made.

Soil, horse, stone, water hyacinth, book, sunlight, dolphin, pen, chair, water, cottonwool, table, trees, brick.

Activities

1. Collect information about the work of WWF – World Wide Fund for Nature.
2. In the activity on page 89 you studied some news items. Find out what is done in your neighbourhood to prevent such harm to living things.

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