7.Habitat

Uma was swimming in the village pond with her elder brother. She enjoyed swimming there as she saw several things in the pond different from what she could see around her house. Her brother would show her eggs of all sorts of creatures. Right below the lotus leaf was the snail's egg, within leafy bushes at the side of the pond were eggs of a fish and so much more. There were several organisms vary - from very small to quite large ones like the fish that grandpa was rearing. Human beings would often hold their breath underwater for such explorations. But we would gasp for breath just after a short time and come to the surface.

Uma often wondered how the organisms underwater could live there easily while it was so difficult for her to breathe?

Do all organisms have different needs which are fulfilled by their surroundings?

We see organisms living everywhere around us. We see them living on the ground or under the ground, in the water or on its surface etc.

Let us explore all the places where organisms (plants and animals) live.

Fig. 1

Activity-1: Who lives where

Here is a list of some organisms. Ant, human beings, elephant, lotus, wall spider, oyster, fish, rabbit, bee, sparrow, dung beetle, earthworm, korameenu (murrel), squirrel, rat, crab, snail, bat, pistia, water hyacinth, monkey, prawn(royyalu), tiger prawn. You may add the names of even more animals and plants that you see around you or remove those from the given list which are unfamiliar to you.

Where is each organism found most often? In table 1 write the names of the organisms in the appropriate box according to where they can be found. You could put the name of one organism in more than one column.

If you put the organism in the column 'some other place', try to mention the place where you could find it.

Some examples are filled in to help you. Copy the table 1 in your notebook. Try to enrich the list as much as you can.

How many organisms are present in more than one column? Why did you place them there?

Table 1

Underground	On the ground	In/on water	Some other place
snake	snake	snake	
earthworm			

cat lotus

Sparrow (in homes)

• In which column will you put a frog?

We have seen that different organisms live in different places but many of them live in the same place. Living organisms have different needs. They usually stay in the places where most of their needs are met, that is, they get sufficient food, shelter and other conditions necessary for life.

All organisms depend on their surrounding for their needs like food, water, air and shelter. The surrounding which meets the needs of a particular organism in the best manner is the **habitat** of that organism. For example, pond is the habitat of royyalu or the fresh water prawn. Fish lives in ponds so it is a habitat for fish as well.

Can you say what is the habitat for crow? A crow makes its nest on the tree. So tree is a habitat for the crow. We often find some insects on the skin of buffalo. So, buffalo skin is the habitat for that insect.

With such a lot of different types of organisms it is difficult to find areas with just one type of plant or animal. It is also difficult to study the needs of each organism separately, so usually we study them collectively according to the habitat.

Now lets see what are the different habitats around us.

We find animals living on trees, in our houses, in different areas in the ponds, in a small pool of water after rains and several other places. As the area increases, the type and number of organisms living there usually increase.

You would find more types of organisms living in your house than your hair, and more in the pond than your house, more in the lake than your pond and so on. These larger areas are suitable for supporting the life of more organisms.

Now let us study some habitats more closely.

Pond as a habitat

There are several organisms in a pond. To study them more closely we need to see the different regions in the pond where communities of some organisms are present.

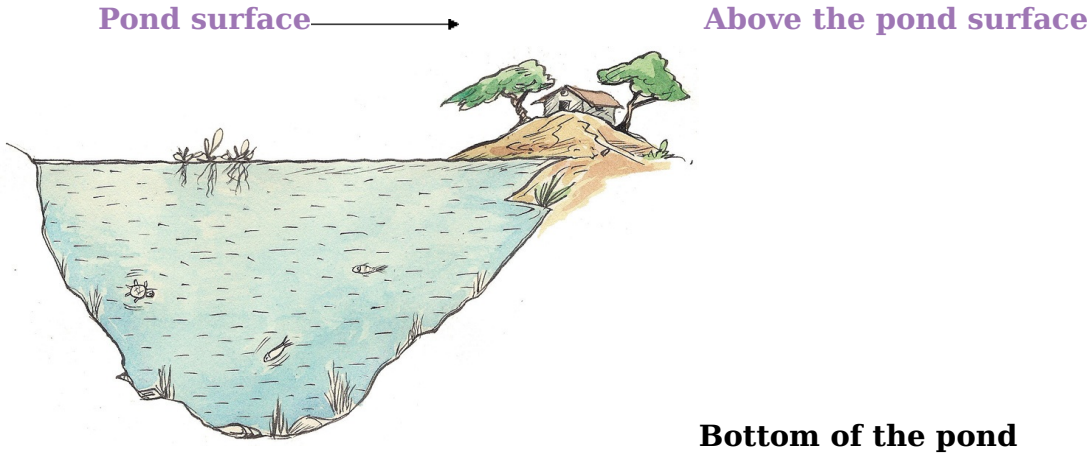


Fig. 2

• Which animals and plants do you think would live on the surface of the pond?

• Which animals and plants do you think would live in mid-water?

• Which animals and plants do you think would live in the pond margins?

• Which animals and plants do you think would live at the bottom of the pond?

In the pond, we find that different organisms live in different regions. This is due to some conditions like availability of different amounts of food, air, light etc.

We find organisms like dragonfly, mayfly and kingfisher living above the surface, that is, hovering above the pond and then resting over a bamboo pole or a stick jutting out of the surface of the pond. They get food from the surface of the pond.

Organisms like snail, whirling beetle and pond skater live on the surface. The larva of mayfly and dragonfly also live on the surface of the pond. Plants like pistia float on the surface completely while those like the lotus have roots going deep under. On the surface organisms are easily eaten up by others because there is little protection for them. However, there is plenty of food and air and this is why fish usually come to the surface to feed.

Great water boatman, leech and mosquito larva are found in midwater. Fish and crabs also swim around this region.

Pond margins have several grasses, frogs, cranes, crabs etc. Fish usually lay eggs here.

The bottom of the pond has plants like Hydrilla and animals like mussels, flatworms and some maggots larva of some insects like fly. Light is minimum here, but food, in the form of dead and decaying matter is in plenty.

Activity-3: Organisms that live in different levels of a pond

Try to answer the following questions on the basis of what you have read so far :

- Name some organisms in the pond that can stay in different regions in the same pond? What makes them stay in different regions in the pond?
- Can different places in the pond also be called as habitat? Why or why not?
- Is there any animal with legs in the pond?
- Do all animals in the pond have tails?
- Do all animals in a pond swim?
- What are the animals that share the surface of the pond as habitat?
- Are leaves of all plants growing in the pond similar? What is the difference between the leaves of a plant growing at the bottom (hydrilla) and that floating on the surface (lotus)? Try to think and write why such difference may be there.

In all ponds we can see both plants and animals. The plants that we see in water are called aquatic plants. Animals are called aquatic animals. This type of habitat is said to be an **aquatic habitat.** There are several aquatic habitats on earth, from very small ones like water tanks, ponds, different places in the water tank or pond, small garden pools, pools that form after rain to large ones like saltwater lakes, rivers, seas etc.

Tree as a habitat

Now, in the same way, let us study a plant or a tree as habitat.

Birds, monkeys, squirrels, snakes, ants, spiders, caterpillars, moths, bees, wasps, small plants (mosses), mosquito, are some organisms that you may find on a tree. Try to classify them in table 2 based on where you find them. Add some more examples that you know.

Table 2

At the base of the tree	ants, ...
On the trunk	
Between the branches	monkeys, ...
On or within leaves	

Fig. 3 has been drawn for your help.

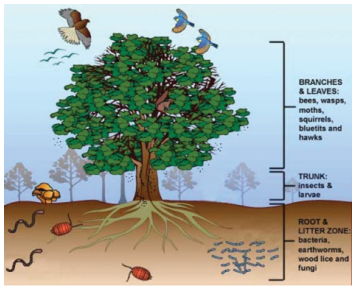


Fig. 3

Now try to explore the types of organisms that you may see living on a tree or even a medium sized plant found in your surroundings.

Activity-4

- Select a tree/plant in your school (you may work in a group of 4-5 students of your class).
- Observe the tree that you have selected over a period of time, say a week, by visiting it at least at two different times a day. Do this everyday.
- Let each member of your group note the observations individually whenever they can.

Note the following :

- Make a list of all the organisms seen by you on your first visit. Add the names of organisms that you may find in your next visits.
- Make a rough sketch of the tree in your note book and mark the places on the tree where you spot these organisms. Take the help of Fig. 3.

Carry out your exploration by trying to find out the following :

- Did you find some small plants growing on the tree? (You can touch the bark and look for a green velvety growth for this).
- Is the tree chosen by you a habitat for this plant?
- Did you find that some animals were always present on the tree? Name them.
- Did you find some animals coming to and going away from the tree? What were they?
- Did you spot the same animals everyday?
- Is the tree a habitat for the organisms that came on some days and could not be found on the other days?
- Based on your observations, for which organisms is the tree observed by you a habitat?

Discuss with the other groups what they observed and answer the following :

- Do all the trees observed have the same animals?
- Is there any tree without animals?
- What are the animals we frequently see on trees?

Try to observe more plants and trees in your surroundings as well.

There are different types of trees in our surroundings. Tree is a place where different types of animals live. Birds, squirrels, ants, spiders etc. Some very small plants also grow on the barks of trees (you may have seen certain areas of the barks having green velvety growth especially in the rainy season). Trees are thus habitat for different organisms. Birds and squirrels come and go from a tree yet the tree is a habitat for them.

Our house as a habitat

We live in houses that protect us from heat and cold, rain etc. and are a shelter for us. We keep some animals and birds as pets in our houses. We also grow some plants which give us fruits and vegetables.

Activity-5

Discuss the different organisms living in your house. List them.

- Can animals that live in our houses as pets live in other places as well? Name the animals and also write the places where they can live.
- Animals not useful to us also live in our houses. Give examples of such animals.
- Why do only certain types of animals and plants live along with us?

We domesticate some types of animals and plants for our needs such as food.

- Think, why do we domesticate dogs and cats?

Thus we can say that our house is also a habitat, isn't it? Several animals like dogs, cats, goats, cows, birds (like hens, ducks, pigeons), spiders, ants, cockroaches live with us. Plants like the money plant and some crotons are also kept inside our houses.

We should take care of our pet animals. Most of the time we concentrate only on milk but not on cow's or buffaloe's needs. Keeping their sheds clean, supplying fodder and water to them is our responsibility. If we show concern for animals they become affectionate to us. You notice your pet dog licks your feet, wags its tail, sits near you and walks with you. Have you ever experienced the affection that a dog / cat shows towards you? Write your experience.

Do you know:

Animals are partners of our habitat. They also have a right to live. We people are encroaching their habitat. If we cut a tree, birds that live on it lose their nests and fall in danger. We often see dogs, cows, monkeys suffering from lack of food and shelter. some voluntary organisation that works for animal rights and protection.

Orchard : A wonderful avenue

While travelling by bus or train, we can see different types of crop fields and orchards. Farmers grow mango, guava, sapota, banana, citrus(battai) trees in the villages. In orchards, farmers grow a single type of fruit plants; in a mango orchard there will only be mango trees. But we find several other small plants growing on the ground and also find different types of animals there.

- Are all plants that grow in an orchard the same as the plants in a forest? Why is it so?

Tamarind, mango, amla are examples of plants that grow in forests or in the house-gardens or fields.

Plants and animals that live in different places on the land like those living on trees, in our houses, fields, forests etc are said to belong to terrestrial habitat.

All habitats on land are collectively known as **terrestrial habitats.**

Now let us do a small activity to see the difference in the ways in which plants and animals adjust or adapt to their surroundings.

A study of the difference between aquatic and terrestrial plants will help us understand this better.

Activity-6: Compare water plants with land plants

Collect an aquatic plant say a hydrilla or vallesneria. Also collect any land plant. Now compare the two and write your observations in table 3.

Table 3

Parts	Terrestrial plant (tulsi)	Aquatic plant(valisneria /hydrilla)
Stem		
Leaf		
Root		
Others		

- On the basis of your observations write how is the aquatic plant suited to living in water?

Diversity of habitats in Andhra Pradesh

The plants that grow in coastal regions differ from those of Telangana or Rayalseema. We can see mangroves only in coastal districts. Grapes are grown in Telangana. Similarly, we can see same type of plants in all places of our state.

Do you know?

Cactus, acacia, aloevera plants do not need water like chili or jasmine plants. They are called desert plants. We can see camels frequently in the desert. Desert plants and animals are suited to dry conditions and vast temperature differences. Different characteristics in the desert make up desert habitats.

Discuss with your friends and write:

- Do animals change their habitats?
- What about our domestic animals, have their habitats changed?
- Have you seen some birds in your surroundings only during a particular season? Why do they come here?
- Can we see all types of birds throughout the year? We hear songs of cuckoo only in a particular season. We see cranes on trees in rainy season, where do they come from and where do they go at other times?

Good habitat, good life!

Suppose the doors of your house are destroyed somehow? How will you feel?

We fail to accept even little changes in our house or surroundings. We feel disturbed. Do we feel the same way for others? We are dumping wastes in nearby ponds, lakes, rivers and grounds and destroying forests on a large scale to set up industries. Think what will happen to all the organisms living in these areas. What will be the result of all this? Don't we depend on different organisms? You have already studied about the interdependence of different organisms. Try to give your answer on the basis of that. If we harm them wouldn't we be harmed as well?

Think how a good unharmed habitat leads to a better life for us.

Do you know?

Different kinds of birds come from long distances to Kolleru and Pullicat lakes of our state. During the months of October to March, pelicans appear near those lakes. In Kurnool district we can see a bird called battameke pitta which flies over long distances to come here.

Generally we can see birds flying over long distances to find suitable conditions to reproduce. Animals like turtles and fish also move from place to place. Some kinds of turtles move away from coasts of West Bengal and Orissa to the coasts of Vishakhapatnam.

Have you heard about the Pulasa fish? Gather information about them. How and why do they change their habitat in some seasons.

Keywords

Habitat, Terrestrial, Aquatic

What we have learnt

- Habitat is a dwelling place for plants and animals that gives them optimum conditions for life.
- Tree, pond, house are some examples of habitats.
- Temperature, moisture, air, water, food, shelter are the components of a habitat.
- All habitats may be broadly grouped into terrestrial (land) and aquatic (water).
- Several kinds of plants and animals share the same habitat.
- Habitats shows the diversity of nature.
- Habitats are specific to the particular organism living there.
- Birds often change habitat in search of better living conditions. For example, some birds change habitat before laying eggs.
- We must not destroy habitats of other organisms to satisfy our needs; rather we must try to protect them.

Improve your learning

1. What is a habitat?
2. Name some plants and animals that live in terrestrial habitat.
3. Why can’t fish live on land?
4. “Animal skin is a habitat for some organisms.” What do you understand by this statement?
5. Identify the habitat in which the following live. More than one organism may be present in one habitat (use information given in the help box)

Our intestine, pond margin, kitchen, garden, tree, underground, grass

6. What happens if a habitat is disturbed or destroyed?
7. Why do some animals change their habitat?
8. Observe a spider in its web and write how a spider shares its habitat.
9 Collect a hydrilla plant. Put it in a glass of water and observe for a week how it grows.
10. Take a map of Andhra Pradesh and colour the areas where mangroves grow.
11. “I am a living being. I have four legs. I live in water and also on land.” Who am I? And guess who are there in my habitat along with me.
12. Write your experiences with your pet dog / cat / cow etc. that shows its affection on you.
13. Raziya doesn’t want to distrub squirrles that eat fruits on the guava tree at her house. Why does she do so?

14. Prepare a map that represents different habitats which exist in your school.
15. Prepare an article to deliver a speech in Literary Association meeting on “Animals also have right to live.”
16. Pictures of diffrent kinds of plants and animals which live in plants and lakes in our surroundings are given below for you. Try to know their local names with the help of your teacher and write them in your note book.

Pond skater

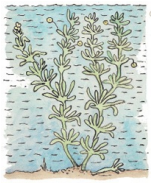
Kingfisher

Flatworm

Lotus

Dragonfly

Rat-tailed Maggot



Hydrilla

Greenfly

Mussel

Leech

Grass

Dung beetle

Mosquito larvae

Pond snail

Water Lily

Vallisneria

Mayfly

Our planet is an extraordinary mosaic of land, sea and life forms.
Alpine or montane, habitats occur in highlands and mountain ranges around the world.
Mountains provide habitat for a wide range of terrestrial animals including mammals, birds, reptiles, invertebrates and amphibians.

Coral reefs are among the world’s most diverse habitats. Coral reefs are made up of millions of tiny coral polyps.
Deserts and scrublands are landscapes that have scarce precipitation.
Forests and woodlands are habitats dominated by trees. Forests extend over about one-third of the world’s land surface and can be found in many regions around the globe.
Grasslands and savannas are habitats characterized by the predominance of grass vegetation and the absence of forests or thick tree stands
Aquatic habitats come in many forms: lakes, rivers, wetlands, marshes, lagoons, streams, rivers and swamps.

Where freshwater mixes with saltwater you'll find mangroves, salt marshes, and mud flats.

Seas and oceans stretch from pole to pole and reach around the globe. They cover more than 70 percent of the Earth's surface and hold in excess of 300 million cubic miles of water.

Where water meets land, a diverse array of animals and wildlife gather to feed, reproduce, and seek out shelter.