



INDIA : CLIMATE, VEGETATION AND WILDLIFE

You read in newspapers daily and watch on T.V. or hear others talking about weather. You must know that **weather** is about *day to day changes* in the atmosphere. It includes changes in temperature, rainfall and sunshine etc. For example, as such it may be hot or cold; sunny or cloudy; windy or calm. You must have noticed that when it is hot continuously for several days you don't need any warm clothing. You also like to eat or drink cold things. In contrast there are days together, you feel cold without woollen clothes when it is very windy and chilly, you would like to have something hot to eat.

Broadly, the major seasons recognised in India are:

- Cold Weather Season (Winter) December to February
- Hot Weather Season (Summer) March to May
- Southwest Monsoon Season (Rainy) June to September
- Season of Retreating Monsoon (Autumn) October and November

COLD WEATHER SEASON OR WINTER

During the winter season, the sun rays do not fall directly in the region. As a result the temperatures are quite low in northern India.

HOT WEATHER SEASON OR SUMMER

In the hot weather season sun rays more or less directly fall in this region. Temperature becomes very high. Hot and dry winds called **loo**, blow during the day.

Let's have fun :

1. People in all parts of our country drink delicious cool drinks called *Sharbat* made from fruits available in their regions. They are excellent thirst-quenchers and protect our bodies from the ill-effect of the harsh 'loo'. Have you tried 'Sharbat', made from raw mango, bel, lemon, tamarind, kokum, phalsa, watermelon and buttermilk made from curds; for example chhaachh, mattha, mori, chash, etc? Many make banana and mango milkshakes too.
2. After a hot summer, the first rains bring much joy. All our languages have melodious songs on 'rains'. They sound happy and bring cheer. Learn two songs on rains and sing them together.

Write or collect five poems on rains.

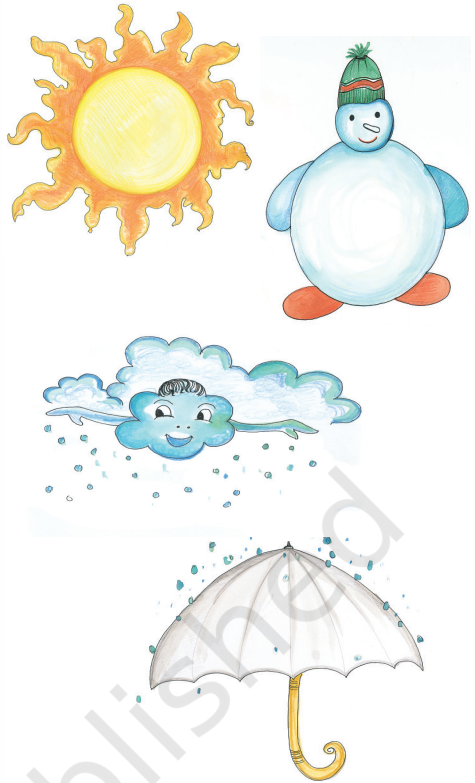
Ask your friends, neighbours and family members for names for rains and other seasons in different languages. For instance,

Varsha – Hindi

Pous – Marathi

Barish – Urdu

Borsha – Bengali



SOUTH WEST MONSOON SEASON OR RAINY SEASON

This season is marked by the onset and advance of monsoon. The winds blow from Arabian Sea and Bay of Bengal towards the land. They carry moisture with them. When these winds strike the mountain barriers, rainfall occurs.

SEASON OF RETREATING MONSOONS OR AUTUMN

Winds move back from the mainland to the Bay of Bengal. This is the season of the retreating monsoons. The southern parts of India, particularly Tamil Nadu and Andhra Pradesh receive rainfall in this season.

However, the **climate** is about the average weather condition, which have been measured *over many years*.

The climate of India has broadly been described as Monsoon type. **Monsoon** is taken from the Arabic word '**mausim**', which means seasons. Due to India's location in the tropical region, most of the rain is brought by monsoon winds. Agriculture in India is dependent on rains. Good monsoons mean adequate rain and a bountiful crop.

What would happen if monsoons were weak, or even worse, failed to occur one year? Tick (✓) the correct answer.

- Crops will be-
affected/not affected
- The level of the water in a well will-
come-up/go-down
- Summer will be-
longer/shorter



Let's Do

On a map of India, locate the places mentioned in the paragraph.

The climate of a place is affected by its **location**, **altitude**, **distance from the sea**, and **relief**. Therefore, we experience regional differences in the climate of India. *Jaisalmer* and *Bikaner* in the desert of Rajasthan are *very hot*, while *Drass* and *Kargil* in Jammu and Kashmir are *freezing cold*. Coastal places like *Mumbai* and *Kolkata* experience *moderate climate*. They are neither too hot nor too cold. Being on the coast, these places are *very humid*. *Mawsynram* in *Meghalaya* receives the *world's highest rainfall*, while in a particular year it might not rain at all in *Jaisalmer* in Rajasthan.

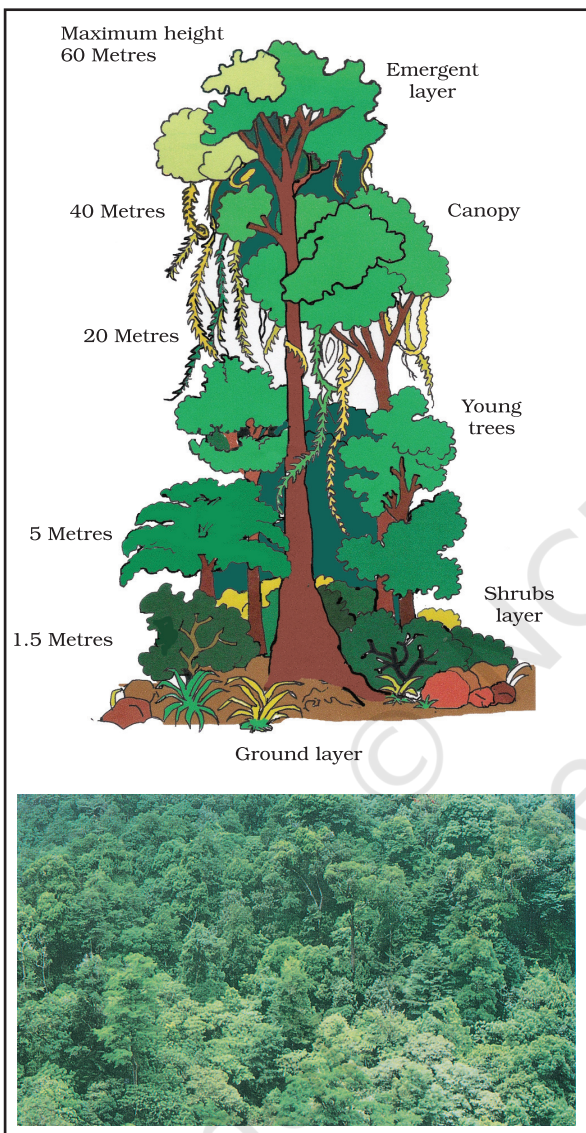


Figure 8.1 : Tropical Rain Forests

NATURAL VEGETATION

We see a variety of plant life in our surroundings. How nice it is to play in a field with green grasses. There are also small plants called bushes and shrubs like cactus and flowering plants etc. Besides there are many tall trees some with many branches and leaves like neem, mango or some which stand with few leaves such as palm. The grasses, shrubs and trees, which grow on their own without interference or help from human beings are called natural vegetation. Do you wonder how these differ from each other. Different types of natural vegetation are dependent on different climatic conditions, among which the amount of rainfall is very important.

Due to varied climatic conditions, India has a wide range of natural vegetation. Vegetation of India can be divided into five types – Tropical evergreen forest, Tropical deciduous forest, Thorny bushes, Mountain vegetation and Mangrove forests.

TROPICAL RAIN FOREST

Tropical Rain Forests occur in the areas which receive heavy rainfall. They are so dense that sunlight doesn't reach the ground. Many species of trees are found in these forests, which shed their leaves at different times of the



year. Therefore, they always appear green and are called evergreen forest as you may notice in Figure 8.1. Important trees found in these forests are *mahogany*, *ebony* and *rosewood*. Andaman and Nicobar Islands, parts of North-Eastern states and a narrow strip of the Western slope of the Western Ghats are home of these forests.

TROPICAL DECIDUOUS FORESTS

In a large part of our country we have this type of forest. These forests are also called monsoon forests. They are less dense. They *shed* their leaves at a particular time of the year. Important trees of these forests are *sal*, *teak*, *peepal*, *neem* and *shisham*. They are found in Madhya Pradesh, Uttar Pradesh, Bihar, Jharkhand, Chhattisgarh, Odisha, and in parts of Maharashtra.



Figure 8.2 : Tropical Deciduous Forests

THORNY BUSHES

This type of vegetation is found in dry areas of the country. The leaves are in the form of spines to reduce the loss of water. *Cactus*, *khair*, *babool*, *keekar* are important and are found in the states of Rajasthan, Punjab, Haryana, Eastern slopes of Western Ghats and Gujarat.



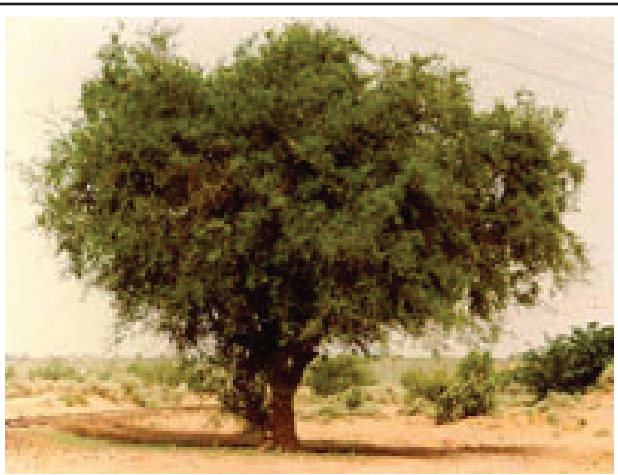
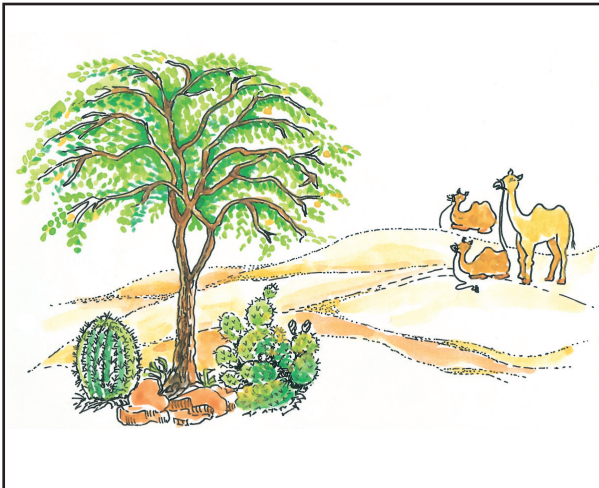


Figure 8.3 : Thorny Bushes

MOUNTAIN VEGETATION

A wide range of species is found in the mountains according to the variation in height. With increase in height, the temperature falls. At a height between 1500

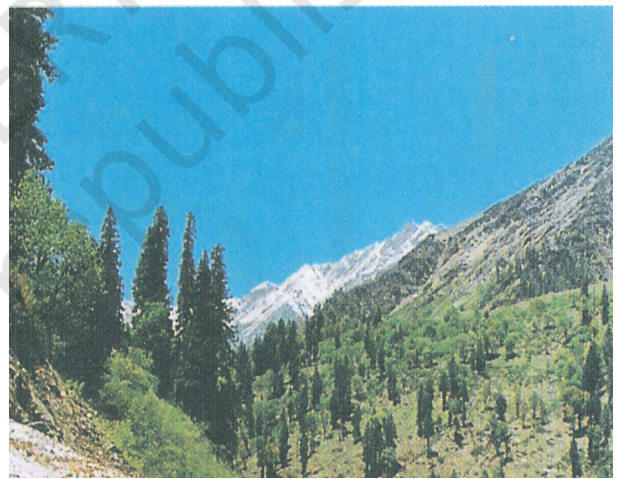
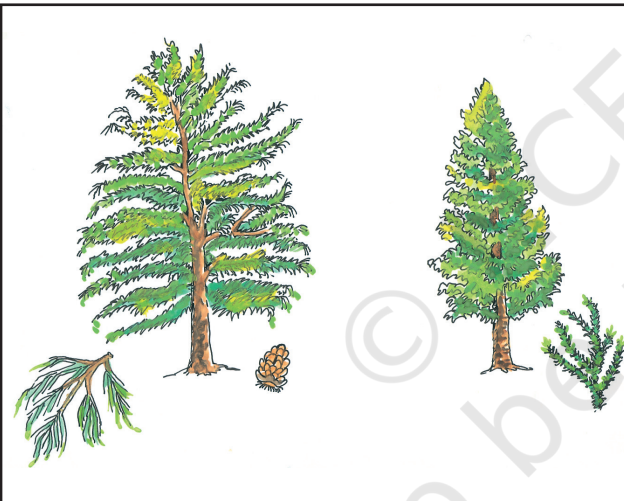


Figure 8.4 : Mountain Vegetation

metres and 2500 metres most of the trees are conical in shape. These trees are called coniferous trees. *Chir, Pine and Deodar* are important trees of these forests.



Figure 8.5 : Mangrove Vegetation

MANGROVE FORESTS

These forests can survive in *saline water*. They are found mainly in *Sunderbans* in

West Bengal and in the *Andaman and Nicobar Islands*. *Sundari* is a well-known species of trees in mangrove forests after which *Sunderbans* have been named.

WHY ARE FORESTS NECESSARY?

Forests are very useful for us. They perform various functions. Plants release oxygen that we breathe and absorb *carbon dioxide*. The roots of the plants bind the soil; thus, they control soil erosion.

Forests provide us with timber for furniture, fuel wood, fodder, medicinal plants and herbs, lac, honey, gum, etc.

Forests are the natural habitat of wild life.

Natural vegetation has been destroyed to a large extent because of the reckless cutting of trees. We should plant more trees and protect the existing ones and make people aware of the importance of trees. We can have special programmes like *Van Mahotsav* to involve more people in making our earth green.

Leela's parents planted a sapling of "neem" to celebrate her birth. On each birthday, a different sapling was planted. It was watered regularly and protected from severe heat, cold and animals. Children took care not to harm it. When Leela was 20, twenty-one beautiful trees, stood in and around her house. Birds built their nests on them, flowers bloomed, butterflies fluttered around them, children enjoyed their fruits, swung on their branches and played in their shade.

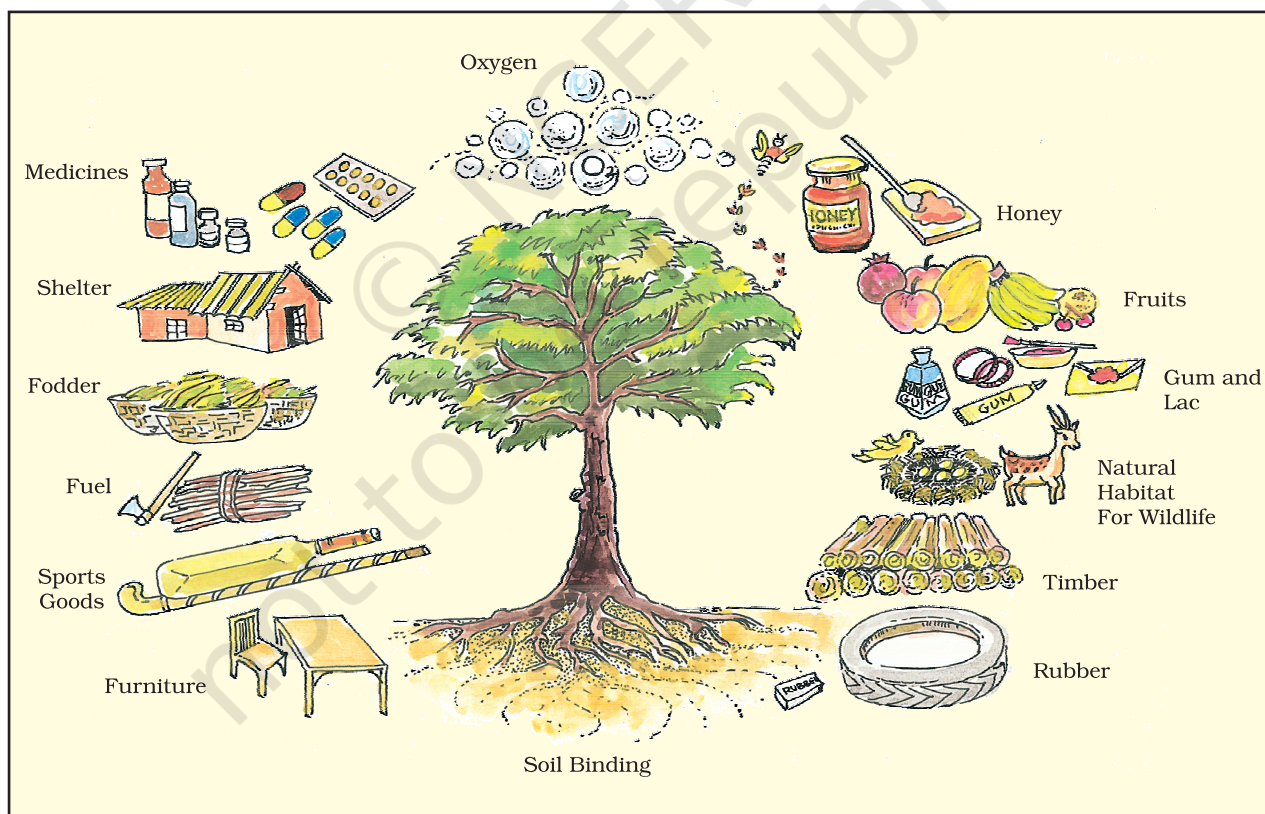


Figure 8.6 : What we get from forests

WILD LIFE

Forests are home to a variety of wild life. There are thousands of species of animals and a large variety of reptiles, amphibians, mammals, birds, insects and worms which dwell in the forest.



Figure 8.7 : Wildlife

The tiger is our **national animal**. It is found in various parts of the country. Gir forest in Gujarat is the home of Asiatic lions. Elephants and one-horned rhinoceroses roam in the forests of Assam. Elephants are also found in Kerala and Karnataka. Camels and wild asses are found in the Great Indian desert and the Rann of Kutch respectively. Wild goats, snow leopards, bears, etc. are found in the Himalayan region. Besides these, many other animals are found in our country such as monkey, wolf, jackal, nilgai, cheetah, etc.

India is equally rich in bird life. The peacock is our **national bird**. Other common birds are parrots, pigeons, mynah, geese, bulbul and ducks. There are several bird sanctuaries which have been created to give birds their natural habitat. These provide the birds protection from hunters. Can you name five birds that are commonly found in your area?

There are several hundreds of species of snakes found in India. Cobras and kraits are important among them.

Due to cutting of forests and hunting, several species of wildlife of India are declining rapidly. Many species have already become extinct.

In order to protect them many national parks, sanctuaries and biosphere reserves have been set up. The Government has also started *Project Tiger* and *Project Elephant* to protect these animals. Can you name some wildlife sanctuaries of India and locate them on a map?

You can also contribute in conserving wildlife. You can refuse to buy things made from parts of the bodies of animals such as their bones, horns, fur, skins, and feathers. Every year we observe wildlife week in the first week of October, to create awareness of conserving the habitats of the animal kingdom.

Largescale poaching alleged in Simlipal reserve

By Arun Kumar Das/TNN

New Delhi: Yet another tiger sanctuary appears headed the Sariska way. Though officially there are 101 tigers in Orissa's Simlipal reserve, sightings have dropped to five this year, raising fears of largescale poaching in the state's largest tiger sanctuary.

Not only are fewer tigers visible, villagers have also stopped complaining about cattle kills by the jungle cats. There are 64 villages with 4 lakh residents in the areas surrounding Simlipal and 12,000 people live inside the sanctuary area.

Apart from tigers, the 2,750-sq-km sanctuary is home to 127 leopards, 465 elephants and hundreds of bison, barking deer, sambar and wild boars.

Park records say there were 13 tiger sightings in 2003. The figure dropped to 7 in 2004.

Jitendra Kumar, district forest officer, Baripada, who is also in-charge of Simlipal, insists low sightings don't translate to fewer tigers.

"Because it is a different terrain here. There are seven rivers passing through the forest and about 500 water bodies and falls in the forest. There is no shortage of food or water in the forest, so tigers don't go for human or cattle killings," he said.

Visitors, Kumar says, don't have the patience to wait for tigers as they are always in hurry.

"Unlike other sanctuaries, there is no fixed tiger spot here. So, one has to wait patiently in different places in the core areas. So far, we have not come across any evidence of poaching in the forest."

Admitting the uncertainty, he said:



IS ORISSA'S SIMLIPAL RESERVE HEADING THE SARISKA WAY

Department official said lack of cattle kills was intriguing and hoped new sophisticated census methods would be more accurate.

In the case of Sariska and Ranthambore, two of the more important tiger reserves in India, previous census reports were either found to be exaggerated or completely wrong. Biswajit Mohanty of the Wildlife Society of Orissa, which monitors the Simlipal tiger population, says claims of the authorities aren't valid and circumstantial evidence suggests otherwise.

"Unlike in elephant poaching, where the poacher leaves behind the carcass, the tiger poacher is silent."

"Because right from its nails, eyes, toes, teeth, it is sold. There were sightings of leopards and tiger in the last four months in 4 no poaching cases were reported," he said.

According to Wildlife T dia vice-chairman Ashwini Kumar, who has moved a PIL in the Court challenging official tiger figures, "The number is not more than 30 as per estimation. It is true that the tiger is a water body in the and it is also a dense forest."

Villages in tiger reserves must be relocated

How did the PM react to the suggestions of the task force?

The PM reacted in a positive manner. We had made seven recommendations in our report and the PM accepted all of them.

Which recommendation needs to be implemented immediately?

The relocation of villages within a year.



SUNITA NARAIN
Chairman, Tiger Task Force
On the panel's meeting with

New Delhi: India's seriousness in saving its wildlife will be judged internationally by how quickly it can put in place one specialised agency to act against poachers.

It promised to do so six years ago, it still hasn't and this has created a situation which criminals are exploiting.

The message coming out is that the government doesn't threaten their survival.

China has been trying to convince India on tiger poaching. India has no tiger poaching information in India on tiger poaching.

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Will Centre, wildlife lovers finally kiss and make up?

By Chandrika Mago/TNN

New Delhi: The country's new di-

the function.

This certainly doesn't mean the two sides have kissed and made up.

More Sariskas in the making

By Chandrika Mago/TNN

New Delhi: There could be many more Sariskas in the making — and this is of great concern to wildlife lovers.

India is supposed to have about 3,000 tigers but nobody believes the figure, just as nobody is quite sure of the scale of poaching. Over the past year or so, Project Tiger officials have been mapping traditional tiger ranges across the country to detail the changes and strategies accordingly. This is an attempt to put management on a scientific footing — untested knowledge that it hasn't been so far.

As the PM will hear at an upcoming National Board for Wildlife meeting, the traditional range has been mapped on the basis of literature references. Then, they have gone down to the field to check the tiger sightings. They find the habitat is fragmented but the tiger, Western Ghats and central India are still not too bad.



Gopal says the tourist crush at Ranthambore has pushed out tigers to villages nearby and animals have been sighted close to the Chambal ravines. At least one person's death has been reported. In the Valmiki reserve, a disputed area has seen Nepalese extremists killing it there. Four years ago, tiger reserve staff which reportedly hadn't been paid salaries for nearly 18 months just walked out in protest one day. Army patrolling has reportedly been sought there.

Other reserves in the problem list are Indravati in Chhattisgarh, Manas in Assam, Nagarjuna Sagar in Andhra Pradesh and Palamuru in Jharkhand. "Some reserves are so disturbed you can forget about the tiger," says additional DG (wildlife) R P S Khatwal.

Law and order is just a piece of the puzzle. A deadly cocktail has been brewing in reserves as the terror of poachers has been spreading.

When the next tiger census begins in November, the ministry plans to —

Big cats vanishing from Uttarakhand

By Jankiran Chopra/TNN

Dehra Dun: Uttarakhand, home to some of India's most famous tiger reserves, is slowly but steadily losing its big cats. This was revealed after the state government released its Wildlife Census 2003 report.

The report shows that the state lost 10 tigers over the last four years — more than two tigers every year. While there were 251 tigers in 2001 and 245 in 2002, the number further reduced to 241 in 2003. The Corbett Tiger reserve (CTR) had two tigers less in 2003 (14) as compared to 163 in 2001.

Even though there were 17 tigers in the Corbett Tiger reserve in 2001, the figure has dropped to 14 in 2003.

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- Why do poachers kill tigers?
- What will happen if tigers vanish from our forests?
- Have you ever visited any tiger reserves or a zoo where tigers are kept?

Migratory Birds

Some birds such as the Pelican, Siberian Crane, Stork, Flamingo, Pintail Duck and Curlew migrate to our country in the winter season every year. Siberian Cranes migrate from Siberia. They arrive in December and stay till early March.



Stork – a migratory bird

EXERCISES

1. Answer the following questions briefly.

- (a) Which winds bring rainfall in India? Why is it so important?
- (b) Name the different seasons in India.
- (c) What is natural vegetation?
- (d) Name the different types of vegetation found in India.
- (e) What is the difference between evergreen forest and deciduous forest?
- (f) Why is tropical rainforest also called evergreen forest?

2. Tick the correct answers.

- (a) The world's highest rainfall occurs in
 - (i) Mumbai
 - (ii) Asansol
 - (iii) Mawsynram
- (b) Mangrove forests can thrive in
 - (i) saline water
 - (ii) fresh water
 - (iii) polluted water
- (c) Mahogany and rosewood trees are found in
 - (i) mangrove forests
 - (ii) tropical deciduous forests
 - (iii) tropical evergreen forests
- (d) Wild goats and snow leopards are found in
 - (i) Himalayan region
 - (ii) Peninsular region
 - (iii) Gir forests

- (e) During the south west monsoon period, the moisture laden winds blow from

(i) land to sea (ii) sea to land (iii) plateau to plains

3. Fill in the blanks.

- (a) Hot and dry winds known as _____ blow during the day in the summers.
- (b) The states of Andhra Pradesh and Tamil Nadu receive a great amount of rainfall during the season of _____.
- (c) _____ forest in Gujarat is the home of _____.
- (d) _____ is a well-known species of mangrove forests.
- (e) _____ are also called monsoon forests.



FOR FUN

1. Make a list of trees in your neighbourhood and collect pictures of plants, animals and birds and paste them in your copy.
2. Plant a sapling near your home and nurture it and write down the changes you observe for a few months.
3. Does any migratory bird come in your locality? Try to identify that. Be watchful in the winter season.
4. Visit a zoo in your city or visit a nearby forest or sanctuary with your elders. Look carefully at the various types of wildlife there.



State and Union Territories of India

State	Capital	Union Territory	Capital
Andhra Pradesh	Hyderabad	Andaman and Nicobar Islands	Port Blair
Arunachal Pradesh	Itanagar	Chandigarh	Chandigarh
Assam	Dispur	Dadra & Nagar Haveli	Silvassa
Bihar	Patna	Daman & Diu	Daman
Chhattisgarh	Raipur	Lakshadweep	Kavaratti
Goa	Panaji	Puducherry	Puducherry
Gujarat	Gandhi Nagar		
Haryana	Chandigarh	National Capital Territory of Delhi	Delhi
Himachal Pradesh	Shimla		
Jammu & Kashmir	Srinagar		
Jharkhand	Ranchi		
Karnataka	Bangalore		
Kerala	Thiruvananthapuram		
Madhya Pradesh	Bhopal		
Maharashtra	Mumbai		
Manipur	Imphal		
Meghalaya	Shillong		
Mizoram	Aizawl		
Nagaland	Kohima		
Odisha	Bhubaneswar		
Punjab	Chandigarh		
Rajasthan	Jaipur		
Sikkim	Gangtok		
Tamil Nadu	Chennai		
Uttarakhand	Dehradun		
Uttar Pradesh	Lucknow		
Tripura	Agartala		
West Bengal	Kolkata		

Some Internet Sources for more information

www.sci.edu/public.html

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<http://volcanoes.usgs.gov/>

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www.futureforests.com/calculators/flightcalculatorshop.asp

www.nationalgeographic.com/earthpulse

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