

# CHAPTER 7

**S**o far, you have looked at grasslands and three different types of forests: deciduous, coniferous and tropical rain forests. Now you will study two more biomes:



("tun-dur-ah")

and



("dez-urts")

The **tundra** is the coldest biome that is on the planet! Because it is so cold, very few plants and animals live here.

**In fact, there are no trees in the tundra!**

It is so cold in the tundra that the top layer of soil is almost always frozen!! This layer of frozen soil is known as **permafrost**.

This soil is also very low in nutrients. Plants that grow in the tundra are usually very small. Their roots may take hundreds of years to grow because of the poor habitat!

If any of these plants could grow tall, they would probably be knocked down by the powerful winds that sweep over the tundra.

**Are you getting the idea that the tundra is not the best place to live?**

The tundra can be split into two different types:

## **Arctic** and **Alpine**

The **Arctic** tundra is found around the North Pole. It is always cold and the permafrost stays frozen all year long!

Polar bears, caribou and wolves are the largest animals you would find in this biome. These animals spend the short summers eating as much as they can. The more they eat, the more fat they put on their bodies!

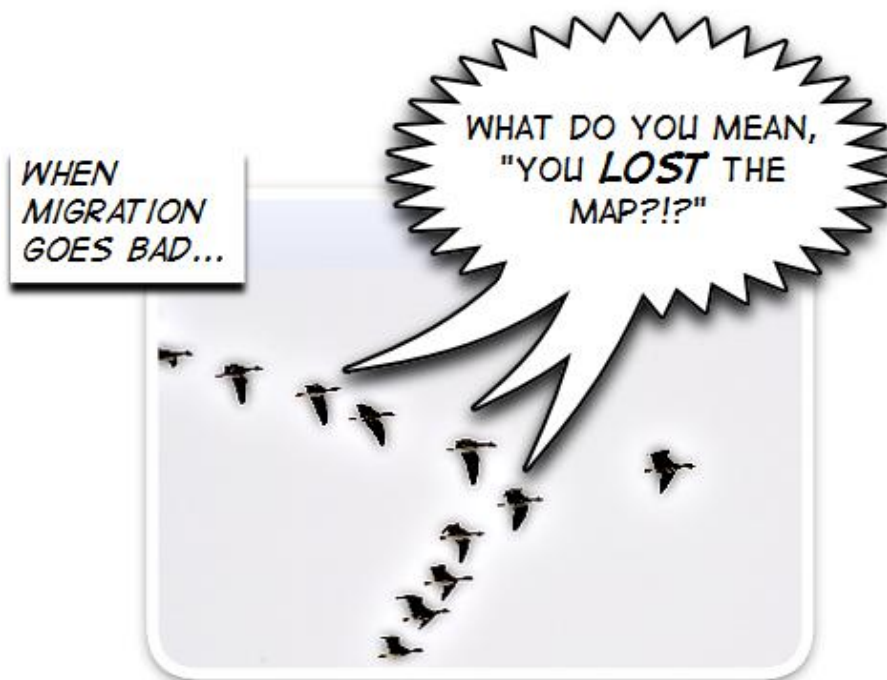
**But I thought fat was bad for animals?**

**Not these animals!**



The extra fat protects the animal from the cold weather. This is the same as you wearing a thick coat in the winter! The extra layer of fat on the animal works the same way as your thick coat... it keeps you warm! This form of protection is very important for animals on the tundra. But With so little resources in this biome, many animals still hibernate during the long cold winters.

Other animals choose to leave this biome during the winter months. This is known as **migration** ("my-gray-shun"). Many different birds migrate from the tundra when it gets too cold. Ravens and falcons are two kinds of birds that migrate from the tundra during the winter. They travel south from the North Pole, towards warmer areas. These birds return to the tundra during the summer.



The **alpine** tundra is found on the tops of mountains all over the world. If you look on the top of a mountain, you will see a large area where no trees are growing. This is the alpine tundra!

The alpine tundra is almost always:

**Cold, snowy  
and windy**

This biome gets more snow than the arctic tundra every year. But it also gets a little warmer during the summer.



The layer of permafrost is not as thick in the alpine tundra. In the summer, the top layer of permafrost thaws just enough to let plants to grow... but they do not grow very fast at all! This is because many plants do not grow fast when it is very cold outside. Also, many plants cannot live when there are strong, cold winds blowing all of the time.

The plants that grow here are the same kinds you would find in the arctic tundra. However, the soil is a little better here, but not much. The soil still does not have many nutrients!

Animals in the alpine tundra are similar to animals in the arctic tundra. Many animals burrow into the ground to keep warm like foxes and ground squirrels. Some animals migrate to warmer areas. And, the larger animals, like elk and mountain goats, are always eating to put more fat on their bodies!

You would find some animals in the alpine tundra, like the bighorn sheep, that have very strong legs. This is needed to climb the rocky hills that are found in this area.

**The alpine tundra is a rough place and the plants and animals that live here have to be prepared to survive!**

The next biome you will be looking at is the...



Deserts may be the hardest biome to live in! Many of you have a picture in your mind of what a desert looks like.

**But did you know that it can be very hot during the day and freezing cold at night?**



It is true that **deserts** are hot during the day and very cold at night.

There is not a lot of water in a desert. So there are very few plants in this biome. The most well known desert plant is the cactus.

This plant has a waxy covering all over just like the needles on a conifer tree! The cactus uses this waxy covering to keep water inside when there is no water.

The soil in a desert is made up mostly of sand. There are very few nutrients in the soil of a desert!

Most animals that live in a desert are very small. A desert does not have a lot of resources so they do not tend to grow very large.

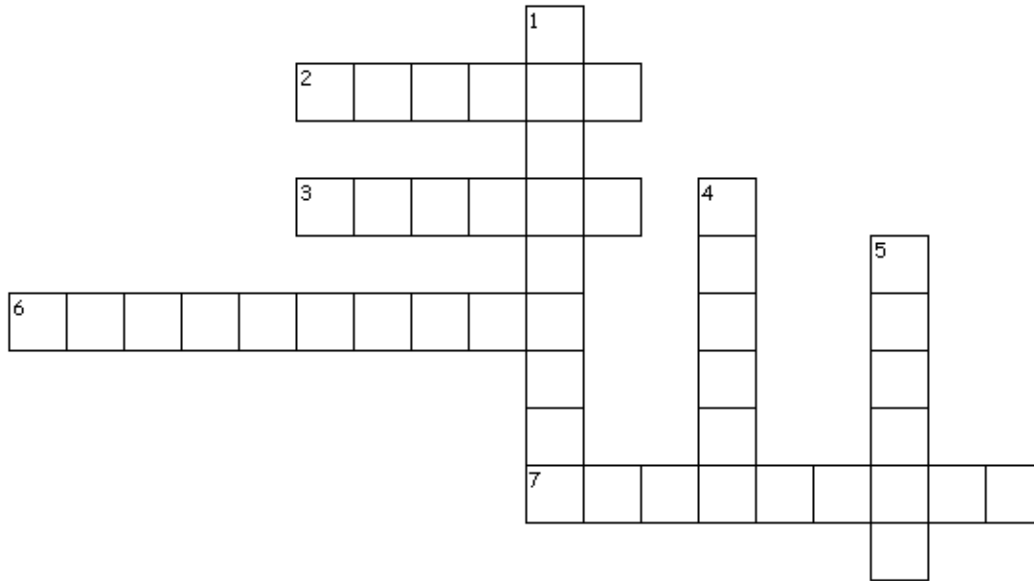
Many of these animals burrow into the ground during the day to avoid the very hot temperatures. Most animals in the desert are **nocturnal**. An animal that is nocturnal will sleep during the day and wake up at night. This is because it is much cooler at night. Also, animals do most of their hunting for food during this time.

That's right! They get to sleep in all day long! But this is not a treat. It is very, very hard to live in a desert. Animals in a desert wake up to a very cold evening almost every night and search for food! Most of these animals do not need to drink much water because they get their water from the food they eat.

**The tundra and desert are the most dangerous biomes because resources are hard to find and the temperatures are very cold or very hot!**



Place the answers to the following clues in the boxes below. Each box should contain one letter.



### Across

2. a tundra that is found around the north pole
3. the coldest biome on the planet; contains no trees and very few different kinds of plants and animals
6. a layer of frozen soil usually found in the tundra
7. being able to sleep during the day and wake up at night

### Down

1. an action by animals in which they leave a biome during the winter months and return in the spring
4. a biome that has very hot days and cold nights with very little water and few organisms
5. a tundra that is found on the tops of mountains

**Match the words in the first column to the best available answer in the second column.**

- |                     |   |
|---------------------|---|
| _____ Tundra biome  | 1) an action by animals in which they leave a biome during the winter months and return in the spring       |
| _____ Permafrost    | 2) a tundra that is found around the north pole   |
| _____ Migration     | 3) a layer of frozen soil usually found in the tundra   |
| _____ Alpine tundra | 4) the coldest biome on the planet; it contains no trees and very few different kinds of plants and animals |
| _____ Arctic tundra | 5) being able to sleep during the day and wake up at night  |
| _____ Desert biome  | 6) a biome that has very hot days and cold nights with very little water and few organisms                  |
| _____ Nocturnal     | 7) a tundra that is found on the tops of mountains  |

# Compare and Contrast

the

## Tundra biome and the Desert biome

<b>Compare</b> (things that are the <b>same</b> between the two biomes)	<b>Contrast</b> (things that are <b>different</b> between the two biomes)