

Biomes

PLANTSAquatic

The intertidal zone is where the ocean meets the land. The waves keep mud and sand constantly moving, so very few plants grow here. Further from the beach there is seaweed. Seaweed is made of algae. These plants do not have roots, stems, leaves or flowers although they have similar looking structures. In the Pacific Ocean, of the coast of California, there are plants called giant kelp. One plant can grow to 125 feet in length. Kelps are large brown seaweed. Kelps found on the Atlantic coast are much smaller than those in the Pacific.

Deserts

In order for plants to survive in the desert they have to be able to collect and store what water is present. They also have to be able to reduce the water evaporating from them. The cactus is the number one plant you will find living in a desert biome. The design of this plant makes it possible for them to hold onto the moisture they have. Cactus has a hairy texture that helps the plants to reflect the heat from the sun. This is why they are able to withstand that high level of heat without suffering.

Some plants survive for several years by becoming dormant and blossoming when water is available. Other plants can complete an entire life cycle in weeks. Some desert plants retain moisture by limiting water loss through their leaf surface. Many plants accomplish this by adapting the size, sheen or texture of their leaves. Small leaves or spines limit the amount of surface area exposed to the drying heat. Glossy leaves reflect the Sun's radiant heat reducing leaf temperatures and evaporation rates. Waxy leaves prevent moisture from escaping.

Desert plants have developed a number of different methods of capturing water. Some plants have developed long (20 foot) taproots that go deep into the ground and tap into groundwater sources. Other plants have developed extensive horizontal root systems. These horizontal root systems lie just below the surface and extend far beyond the plant canopy. When it rains the numerous tiny roots capture the water.

Forests - Rainforests

The tropical rainforest has dense vegetation which often forms three different layers. Frequently people think of the tropical rainforest as a "jungle" where plant growth is thick even at ground level. However, the canopy created by the tall trees (100 – 120 feet) and the understory, prevents sunlight from reaching the ground. The soil is therefore, always shaded, and very little vegetation is able to survive at ground level. Although tropical rainforests receive 12 hours of sunlight daily, less than 2% of that sunlight ever reaches the ground. Plant survival in a tropical rainforest depends on the plant's ability to tolerate constant shade or to adapt strategies to reach sunlight. Fungus is a good example of a plant that flourishes in warm, dark places created by the forest canopy and understory.

There are thousands of types of flowering plants found in the tropical rainforest biome. What is interesting about them is that the roots are not in the soil. Instead, they are in the water that comes from the rainfall. These air plants are very important as thousands of types of insects in this biome feed on them. The flowers that blossom as well as the fruit also provide sources of food for other animals that live in the tropical rainforest biome. The flowers also offer nectar that hummingbirds, bees and butterflies are able to consume.

Both vines and ferns grow all over the tropical rainforest biome. They help to connect the various layers found in the biome. For example there are herbs and mushrooms that grow on the vines in this particular biome as well. Due to the heat and the moisture of the tropical rainforest biome, the plants and animals that die in this location rot quickly. The decay though offers plenty of rich nutrients for other plants to grow from. Many of the plants that grow in the rainforest biome offer us ingredients that are used in a variety of medications.

Grasslands

There are two seasons in the grasslands – the growing season and the dormant season. During the dormant season nothing is able to grow due to the very cold temperatures. Grasslands are very windy. This can help with scattering the seeds of various types of plants and flowers. Grasses vary in size from nine inches tall to seven feet! The size of the grass correlates with the amount of rainfall that area receives. The grasses die back to their roots annually and the soil and the sod protect the roots and the new buds from the cold of winter or dry conditions.

A few trees may be found in the grasslands along the streams, but not many due to the lack of rainfall. The soil is very thin in this biome though so these trees are very thin and small. There are many herbs and flowers that also grow here.

Tundras

Only plants with shallow root systems grow in the Arctic tundra because of the permafrost. Permafrost is rock or soil that remains frozen all year long. This prevents plants from sending their roots down past the active layer of soil. The active layer is the top section of the soil that may thaw out during the brief summers. The active layer of soil is free from ice for only 50 to 90 days. Arctic plants have a very short growing season that ranges from 50 to 60 days.

However, in spite of the severe conditions and the short growing season, there are approximately 1,700 kinds of plants that live in the Arctic tundra. Some of the plants that live in the Arctic tundra include mosses, lichens, low-growing shrubs, and grasses – but almost no trees. Plants have adapted by growing close together and low to the ground. This growing pattern helps the plant resist the effects of cold temperatures and reduce the damage caused by the impact of tiny particles of ice and snow that are driven by the dry winds. Many plants have leaves that are dark red. Dark leaves allow the plant to absorb more heat from the sun in the cold tundra climate.

Match definition to word.

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|-------|------------------------|--|
| _____ | 1. intertidal zone | A. prevent moisture from escaping |
| _____ | 2. permafrost | B. where the ocean meets the land |
| _____ | 3. fungus | C. number one plant you will find living in a desert biome |
| _____ | 4. active layer | D. has dense vegetation |
| _____ | 5. cactus | E. made of algae |
| _____ | 6. tropical rainforest | F. top section of the soil |
| _____ | 7. Waxy leaves | G. example of a plant that flourishes in warm, dark places |
| _____ | 8. dormant season | H. rock or soil that remains frozen all year long |
| _____ | 9. seaweed | I. nothing is able to grow due to the very cold temperatures |

Fill in the blanks from the word bank.

1. The _____ keep mud and sand constantly moving, so very few plants grow here.
2. _____ can grow to 125 feet in length.
3. In order for plants to survive in the _____ they have to be able to collect and store what water is present.
4. Small _____ or spines limit the amount of surface area exposed to the drying heat.
5. Plant survival in a tropical rainforest depends on the plant's ability to tolerate constant _____.
6. There are thousands of types of _____ plants found in the tropical rainforest biome.
7. There are two seasons in the _____.
8. The size of the grass correlates with the amount of _____ that area receives.
9. Only plants with _____ root systems grow in the Arctic tundra.
10. Dark leaves allow the plant to absorb more _____.

Word bank

desert
leaves

flowering
rainfall

Giant kelp
shade

grasslands
shallow

heat
waves

References

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