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• Ecosystem • Forest • Animal • Environmental Issue • Actions



TYPES OF ECOSYSTEMS

An ecosystem is a community of lifeforms in concurrence with non-living components that interact with each other. The origin of the word ecosystem, derived from the Greek word oikos means "home," and systema, or "system." In other words, an ecosystem is a chain of interaction between organisms and the environment. The term "Ecosystem" was first introduced by A.G.Tansley, an English botanist, in 1935.

There are two types of ecosystems, terrestrial ecosystem and aquatic ecosystem. Terrestrial ecosystems are land-based ecosystems present in different geological areas such as forest ecosystems, grassland ecosystems, tundra ecosystems, and desert ecosystems. On the other hand, aquatic ecosystems can be classified as freshwater ecosystems and marine ecosystems.

Let's break down each ecosystem and talk about them in detail.



Have you ever wondered what makes the forest an ecosystem? A forest ecosystem describes the community of plants, animals, microbes and all other organisms in interaction with the environment's chemical and physical features. The organisms in an ecosystem are interdependent for survival. Meanwhile, the organisms play different ecological roles such as producers, consumers and decomposers. Tropical Bornean rainforests are a great example to describe forest ecosystem dynamics. An example is the relationship between ants and caterpillars. The ants feed on sweet juices produced by the spots on caterpillars' back. In return, they protect the caterpillars from attacks. This is an interactive relationship between two organisms called symbiosis.

We cannot undermine the importance of the forests. From the air we breathe to the wood we use, we depend on the forest. Forests also offer watershed protection, prevent soil erosion and mitigate climate change besides providing habitats for animals and livelihoods for humans.

The Grassland Ecosystem covers about 10 percent of the Earth's surface and approximately 20 to 40 percent of the land area on Earth. Grasslands go by many names. In the U.S. Midwest, they're often called prairies. In South America, they're known as pampas. Central Eurasian grasslands are referred to as steppes, while African grasslands are savannas.



Even though they have different names they have the same natural dominant vegetation, which is grass. Grasslands are found where there is not enough regular rainfall to support the growth of a forest. It is found where rainfall is about 15 to 75 cm per year, not enough to support a forest, but more than that of true desert.

Despite not having enough rainfall, grasslands provide many essential ecosystem services, including climate regulation, sand fixation, prevention of wind damage and biodiversity, water and soil conservation. In fact, grasslands often lie between forests and deserts, which also act as the foundation of agriculture, providing grain and cereal crops. Some people might think that grasslands are just an ecosystem filled with grasses; however, it actually offers good economic value to the community who live in the grassland areas.

Tundra ecosystems are treeless regions found in the Arctic and on the tops of mountains, where the climate is cold and windy, and rainfall is minimal. Tundra lands are covered with snow for much of the year, but summer brings bursts of wildflowers.

The average temperature in Arctic tundra is -30 to 20 degrees Fahrenheit (-34 to -6 degrees Celsius). Besides having very cold weather, the tundra ecosystem supports a variety of animal species, including Arctic foxes, polar bears, gray wolves, caribou, snow geese, and musk oxen.



For flora in the tundra ecosystem, the community depends on the summer season. The summer growing season is just 50 to 60 days, when the sun shines up to 24 hours a day. Hardy flora like cushion plants survive in the mountain zones by growing in rock depressions, where it is warmer, and they are sheltered from the wind. It is interesting to know that each ecosystem has different species of flora and fauna, which is adaptable with each ecosystem.

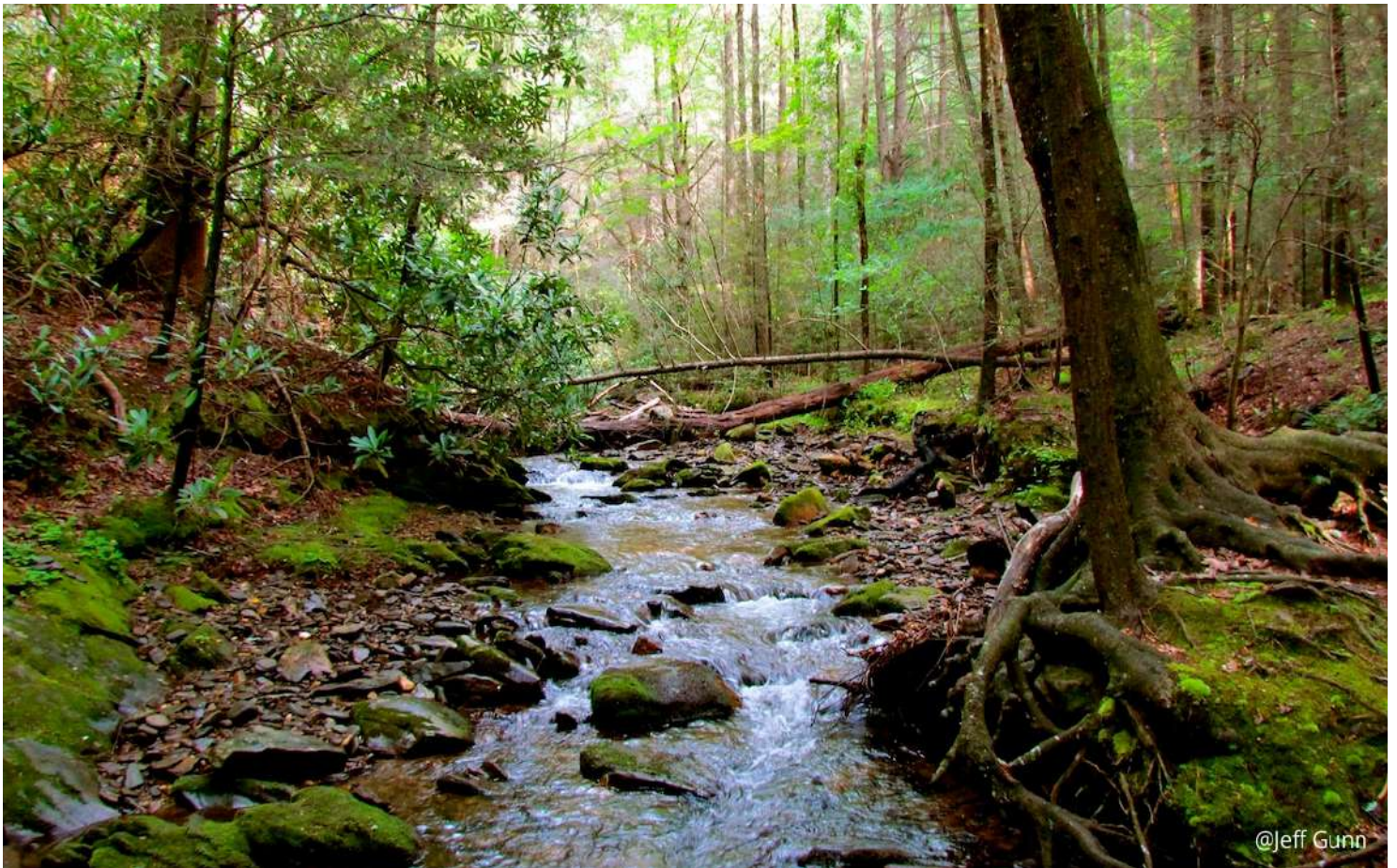
Deserts are part of a wider class of regions called drylands. It covers more than one-fifth of the Earth's land area, and they are found on every continent. These areas exist under a “moisture deficit,” which means they can easily lose more moisture through evaporation than they receive from annual precipitation. Deserts may seem lifeless, but in fact, many species have evolved special ways to survive in harsh environments.

Desert animals have evolved in many ways to keep cool and use less water. For example, camels can go for weeks without water, and their nostrils and eyelashes can form a barrier against sand. Plant species that live in desert areas also have unique characteristics. For instance, desert plants may have to go without fresh water for years at a time! Some plants have adapted to the arid climate by growing long roots that tap water from deep underground. Other plants, such as cacti, have special means of storing and conserving water.



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Wetlands, rivers, lakes, and coastal estuaries are all aquatic ecosystems which are critical elements of Earth's dynamic processes and essential to human economies and health. Every living thing on Earth needs water to survive, but more than one hundred thousand species, including our own, need a special kind of water that can only be found in certain places and is in very rare supply which is freshwater. The plants, animals, microbes, rocks, soil, sunlight, and water found in and around this valuable resource are all part of what is called a freshwater ecosystem.



Less than three percent of our planet's water is freshwater, and less than half of that is available as a liquid. The rest is locked away as ice in polar caps and glaciers. For these reasons, freshwater ecosystems are a precious resource. Therefore, we need to be wise in using our freshwater. Simple acts can conserve freshwater for the future. For example, use water in a bowl or bucket and reuse the water to water your plants instead of using running tap water.

Other than freshwater ecosystems, we also have marine ecosystems which are included under aquatic ecosystems too, but the environment has high levels of dissolved salt, such as those found in or near the ocean. Marine ecosystems are defined by their unique living and non-living factors. Living factors include plants, animals and microbes. In contrast, non-living factors include the amount of sunlight in the ecosystem, the amount of oxygen and nutrients dissolved in the water, proximity to land, depth, and temperature. All of these components make up the unique marine ecosystem.



@Alexander Safonov

Each ecosystem plays an important role in producing and shaping the earth. Healthy ecosystems clean our water, purify our air, maintain our soil, regulate the climate, recycle nutrients and provide food. They provide raw materials and resources for medicines and other purposes. They are at the foundation of all civilisations and sustain our economies. It's that simple: we cannot live without these "ecosystem services". They are what we call our natural capital.

Let's be grateful and appreciate all the differences in the ecosystem we have in the world for all those ecosystems make our world a unique and better place.