The Freshwater Marsh at Playa Del Rey

IDEAS

Some Ideas You Can Use: A Freshwater Marsh Ecosystem

Ecosystems are complex systems that include both living (biotic) and non-living (abiotic) components of the environment. Ecosystems have a hierarchical structure. A group of the same type of living thing (a **species**) forms a **population**, multiple populations interacting with each other form a **community**, and multiple communities interacting with the physical environment create an **ecosystem**. The freshwater marsh is an example of an ecosystem because it includes multiple populations interacting with each other and the physical environment. The picture below is an example of a marsh.



The living things found within a marsh ecosystem need to obtain matter and energy to survive. One way a living thing can obtain the matter and energy it needs to survive is to create food. **Producers** are organisms that create food by harvesting energy from other sources, such as the Sun. Plants and algae are examples of producers found in freshwater marsh ecosystems. **Consumers** are living things that eat other living things to obtain the matter and energy they need. Some consumers will eat only the plants or algae in an ecosystem. These consumers are called **herbivores**. Beetles and other insects are examples of herbivores that are found in a marsh. Some consumers will eat other animals. These consumers are called **carnivores**. Frogs and brown bats are examples of carnivores that are found in marshes. Some consumers will eat both plants and animals. These consumers are called **omnivores**. Red-winged blackbirds and turtles are examples of omnivores that live in a freshwater marsh.

Some things I **know** from what I read…

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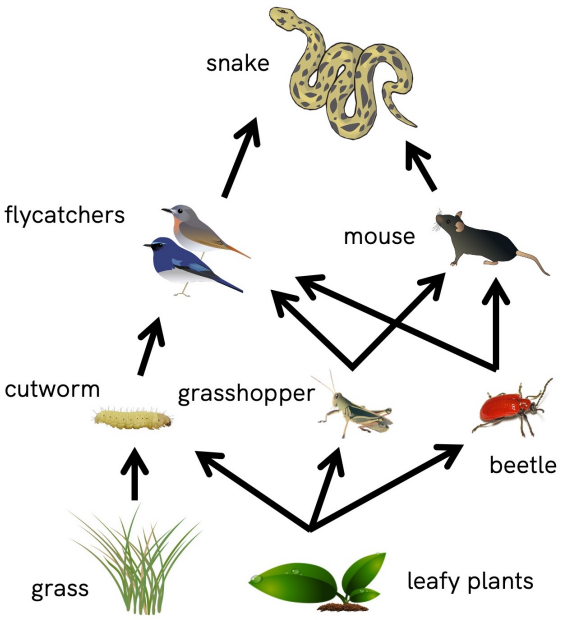
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IDEAS

Some Ideas You Can Use: Food Webs

One way that scientists try to understand how different populations of living things interact with each other within an ecosystem is by creating a food web. A **food web** is a diagram that models the feeding relationships in an ecosystem. A food web is a combination of all the unique food chains present in an ecosystem. A **food chain** is a model that shows how matter and energy, in the form of food, transfers from organism to organism. There are many different food chains in an ecosystem because most consumers eat more than one type of food. Food webs are therefore useful because they help show all the individual food chains in an ecosystem and how they overlap.

The picture on the right is an example of a food web. Notice how the organisms have arrows pointed into them and other arrows coming out from them. The direction of the arrow shows the path of matter and energy flow in the ecosystem. Take the feeding relationship between the cutworm and the flycatchers as an example. In this relationship, the flycatchers eat cutworms, so the matter and energy found in the bodies of the cutworms transfer to the bodies of the flycatchers. This food web also shows how one type of organism, such as the grasshopper, can be a source of matter and energy for several different organisms in the same ecosystem.



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