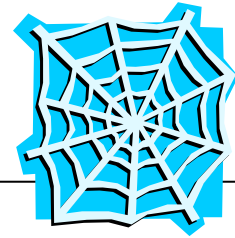


Food Webs



A food web is a diagram. It shows all the main organisms in an ecosystem. Links between organisms show feeding relationships. Organisms are connected on the basis of who eats whom.

Each link between organisms indicates a transfer of nutrients and energy. When an organism is eaten, its matter is digested and metabolized by the other organism. Some matter that gets eaten is not digested. It goes in and comes back out as feces. Thus, most molecules of an organism that is eaten become new molecules in the feeding organism. It's true when people say, "You are what you eat!"

When you string together several feeding links you create a pathway. Notice how many complex food pathways there are in a food web. When a pathway makes a complete loop, the molecules have been recycled.

Ecosystems are perfect examples of recycling factories. Nothing goes to waste in an ecosystem! Even feces eventually "come back to life." When animals leave feces, the nutrients in the feces fertilize the soil. Plants use these nutrients to live and grow. (Feces are full of nutrients! They are, after all, composed of undigested food and bacteria.)

There is something very unusual about the food web of an estuary. Spartina, an emergent cordgrass, is the basis of the food web. This is not unusual-plants, which are the Producers in an ecosystem, make up the basis of food webs. What is very unusual is that most of the Spartina is consumed after it has died! Bacteria and fungi (Decomposers) feed on the dead Spartina. They break it down into smaller bits known as detritus. This detritus, along with phytoplankton, becomes the most abundant source of food in the estuary. These food particles drift in the water throughout the estuary. Thus, in an estuary most food pathways begin with Producers being eaten by Decomposers. Almost all other ecosystems have food pathways that begin with Producers being eaten by Herbivores (animals that eat only live plants).

Many organisms feed on the soupy water of this aquatic habitat. Some animals are "filter feeders." They use special body parts to filter food particles out of the water and eat them. Oysters, mussels and clams are examples. Some animals, like snails and shrimp, creep along the bottom of the estuary and underwater plants. They graze on detritus and algae settled out of the water. Small fish, such as mullet, also dine on these food items.

Other animals eat the organisms that eat detritus and algae. Raccoons pry open oysters, mussels and clams. Large fish eat smaller fish. Herons and sandpipers catch fish. They also hunt for shrimp, worms and aquatic insects in the mud. Some can even open the shells of oysters.

Some animals eat live plants. Grasshoppers and other insects feed on live Spartina. Ducks graze on floating plants. Carnivorous animals eat these herbivorous animals. Spiders, sparrows, and mice feed on plant-eating insects. Hawks hunt mice, sparrows, and ducks.