

# Texas Ecosystems

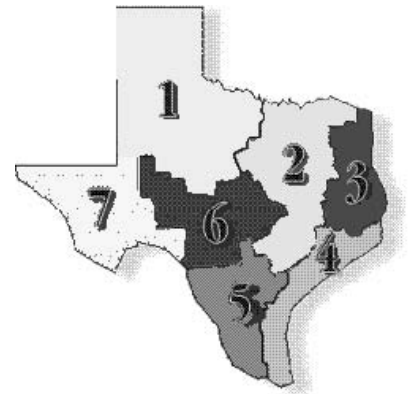
**Purpose:** To identify components of an ecosystem; and describe how organisms including producers, consumers, and decomposers live together in an environment

**The Task:** To create a poster that shows interacting food chains in one of the Texas Ecoregions.



**Background Information:** Texas is a BIG state. So big, in fact, that it can be divided into several large ecosystems. Each of these regions has different plants, animals, landforms, and weather. There are different ways of dividing the state into regions; the different regions are sometimes given different names. For this project we will use the seven regions described by the Texas Department of Parks and Wildlife. These seven regions are:

1. Panhandle Plains (Rolling Plains, High Plains, Llano Estacado)
2. Prairies & Lakes (Blackland Prairies)
3. Piney Woods
4. Gulf Coast
5. South Texas Plains
6. Hill Country (Edward's Plateau, Llano Uplift)
7. Big Bend Country (Maintains & Basins, Trans-Pecos)



**Food Chains** are models that describe how energy in the form of food passes from one organism to another; in other words, they show the transfer of energy in an ecosystem. The sun is the original source of energy, in the form of light, for the food chain.

A **Food Web** is made up of two or more interconnected food chains. It is a model that describes how energy in the form of food moves through a **community**. A food web is a series of overlapping food chains that show the food relationships among organisms in a community.



Food chains and food webs start with the Sun. Green plants capture energy from the sun, carbon dioxide from the air, and water from the soil and convert it to glucose in the chemical reaction we call photosynthesis. Glucose can be converted into energy during

another chemical reaction called cellular respiration. Most of the energy made by plants is used to carry on the plant's life activities. Because green plants can make their own energy during photosynthesis, they are known as PRODUCERS.

The energy not used by a plant is passed on as food to the next level of the food chain.

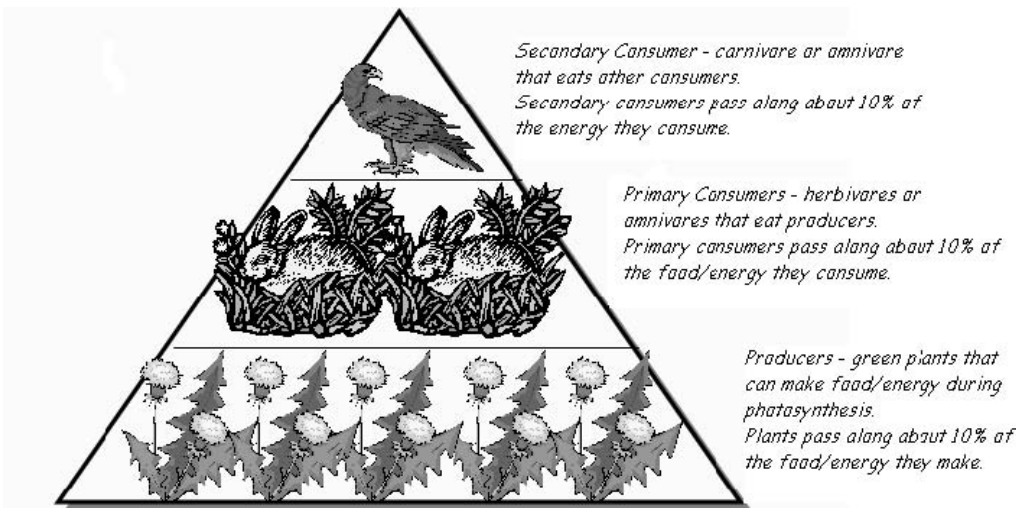
All animals get energy from their food. Nutrients (glucose) from digested food and oxygen brought into the body by the respiratory system are converted into energy in cells through cellular respiration. Because animals cannot make their own food (energy), and must get it from other sources, they are known as CONSUMERS.

A food chain models how each organism gets its food. Some animals eat plants and some animals eat other animals. Some animals eat plants and other animals. Each link in a food chain is food for the next link. A food chain always starts with plant life and ends with an animal. Animals that eat only plants are called herbivores. Animals that eat other animals are called carnivores. Animals that eat both are called omnivores.

There are more herbivores than carnivores in a food chain.

**Energy** is transferred from one organism (one link in the chain) to another. When an herbivore eats, only about 1/10 of the energy (that it gets from the plant food) is used by the animal; the rest of the energy is lost as heat or used up by the herbivore as it moves. Similarly, when a carnivore eats another animal, only about 1/10 of the energy from the animal food is stored in its tissues. In other words, organisms along a food chain pass on much less energy than they receive.

The further along the food chain you go, the less food and energy is available.



An **Energy Pyramid** models the decreasing amount of food/energy available to organisms in a food chain.

Most food chains have no more than four or five links. There cannot be too many organisms in a single food chain because the animals at the end of the chain would not get enough food / energy to stay a live.

**Your Task:** Use the information provided to create three possible food chains for your assigned ecoregion. The chains should form a food web. Each food chain must have at least two consumers.

Draw the food web on a poster.  
Label each part of the web.

Illustrate your poster to show the features and characteristics of your ecoregion. (For example, tall pine trees in the piney woods, seas shells & dolphins in the gulf coast)

### Important Stuff to Remember:

Every food chain begins with the sun.

Every food chain must have a producer.

Three food chains means there must be three producers.

You may have to research some of the plants and/or animals in your ecoregion.

Neatness counts!

