



WHO'S AT RISK?

GET READY

Bioaccumulation, aka *biomagnification*, is the concentration of toxins in an organism as a result of ingesting other plants or animals that contain smaller amounts of the toxin.

Therefore, animals higher on the food chain will contain the highest levels of toxins, which could lead to death.

CAREER CONNECTION

A *toxicologist* is a scientist that studies the effect of toxins on ecosystems and the environment.

WHAT YOU NEED

You can observe ecosystems just outside your door. Go for a nature walk to find a shady spot or sit in your yard with the following:

- * Notebook (option to use paper and a drawing surface)
- * Pen or pencil (colored pencils, crayons or markers optional)
- * Scissors



TRY THIS:

Create a food web out of the living parts of the ecosystem you are observing.

Step 1: Choose Your Setting

Find a natural location to sit and observe. Since you will want to spend time observing, we suggest finding some shade. Rachel Carson began with tide pools. Pick somewhere that interests you!

Step 2: Look for Living Things

The living parts of an ecosystem include the grass, flowers and trees. It includes insects, spiders, birds and bigger animals!

Step 3: Draw Your Observations

Depending on your time constraints, you can sketch or list the plants and animals you see. If you do not sketch in the field, draw the discoveries you list when you get home. Space the drawings so you can cut them out!



WHAT YOU DISCOVERED:

In the book, there were three different paths showing how the levels of a toxic chemical add up and can lead to the death of a larger animal like a bird or a fox. Lay out the plants and animals you drew from your observations on a flat surface like a table or floor. Arrange them by interactions with each other.

Begin with producers (plants). If you have a primary consumer (that only eats plants) place it above the plants. If you have a secondary consumer (eats plants, insects/animals) place it above the primary consumer(s). If you have a tertiary consumer (eats other animals) place it at the top.



EXPLORE FURTHER:

DDT had a significant negative effect on Catalina bald eagles. Not only do bald eagles eat fish, but they also eat other shorebirds and will even eat dead sea lions. Their diet led to higher levels of the toxin.

Using the items in your observed ecosystem, what organism would be the most at risk if a toxic chemical were present in your area?