

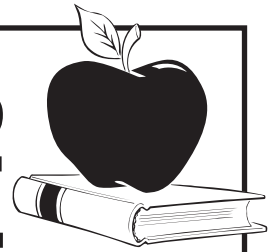
GRADE LEVEL: PreK

ILLINOIS EARLY LEARNING STANDARDS: 11.A.ECa, 11.A.ECb, 11.A.ECf, 11.A.ECg

SKILLS: observation, critical thinking, library research

OBJECTIVE: Students will learn how “dead” trees are actually alive with activity and return nutrients to the soil.

TEACHER'S GUIDE



UNIT ONE ■ LESSON THREE

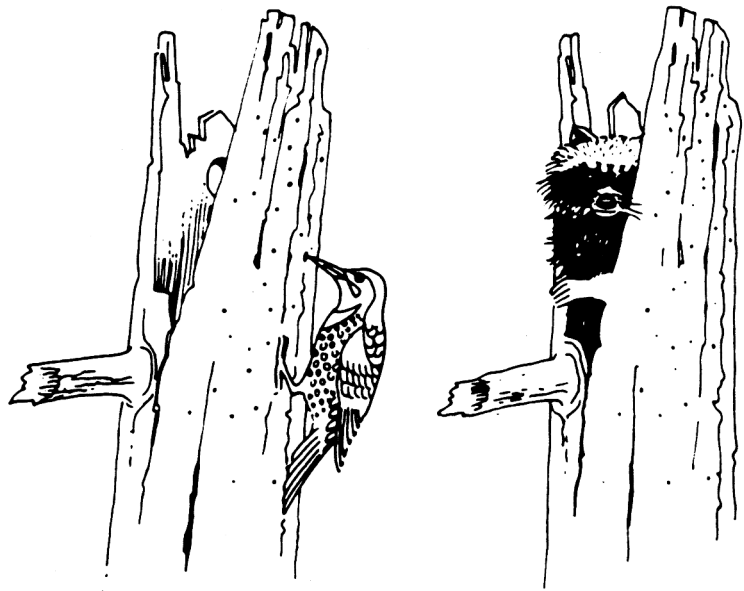
Dead and Alive

BACKGROUND

A dead tree may look lifeless, but actually it is teeming with activity—the activity of live animals. Dead trees have features that live trees do not—features that attract more than 85 species of animals in Illinois.

Bugs Love Them. Many species of insects and other invertebrates (animals without backbones) feed on and live in dead trees. They bore holes in these trees to build their nests. These tiny animals provide food for many other larger animals. But that's just the beginning of the story.

So Do Birds. Many birds, especially woodpeckers, love to feed on the insects that live in dead trees. These birds feed on insects by enlarging holes that insects have bored. They eat the insects and sometimes make the holes so large that they move into them themselves. When they leave the holes, other animals move in, including squirrels, raccoons, opossums and wood ducks. Lots of other birds may live in dead trees or at least use them. Owls, hawks and flycatchers, for instance, perch in dead trees looking for prey to eat (mice, insects and small birds). They have a very good view because there are no leaves to block their vision.

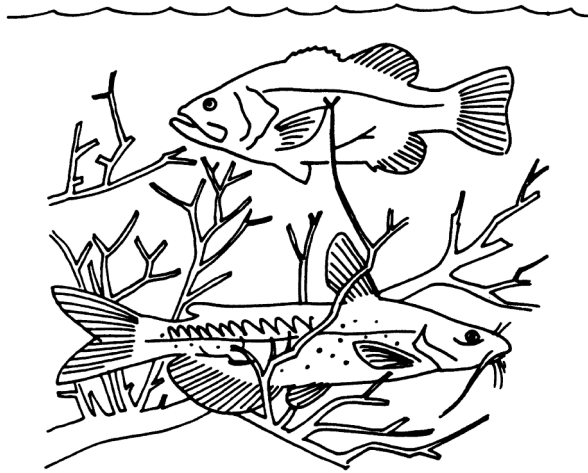


Home Sweet Home. When limbs fall off trees they make brush piles on the ground. These piles provide homes for many animals. Insects move right in. And so do the animals that eat insects, including skunks, lizards, birds and many others. Rabbits don't eat insects, but they are quite comfortable living in the shelter of brush piles.



When Fish Live in Trees.

When trees that live on the edge of lakes or streams die they drop their branches into the water. Eventually, the tree may fall into the water. These branches and trees make excellent places for small fish to hide, a place where many fish raise their young and a very good hunting ground for larger fish.



In stories, dead trees are often portrayed as scary. Find a picture of a dead tree in a story book and discuss how it is portrayed. Have the class create a scary story involving a dead tree. Students must be able to explain any scary happenings with natural causes. Snakes, for instance, might be around dead trees to catch mice.

How Old Trees Become New

Trees. Eventually, dead trees fall down. Insects, other animals and bacteria continue to live in them as they decay. On the ground a dead hollow tree might become a home for rabbits or a den for foxes. Finally the tree decays completely and returns its nutrients to the soil. Good soil is made up of plants that have died and rotted, becoming organic matter. Succession is the natural process of change on a site from one form of vegetation to another. Dead trees live on as part of other organisms that take up the nutrients from the soil and pass them through the food chain.

PROJECTS AND ACTIVITIES

Write each of these animal names on an index card and distribute them to your students: squirrel, raccoon, hawk, opossum, bluebird, black snake, owl, bat, woodpecker, treefrog, wood duck, beetle, mouse, flying squirrel. Have pictures of the animals on the bulletin board. You may wish to utilize the *Biodiversity of Illinois* CD-ROM series from the Illinois Department of Natural Resources or Internet sites to find photographs of the species. Each of these animals uses dead trees. Ask your students to imagine ways that these animals might find a dead tree useful. Students might be assigned an animal and asked to draw or find a picture of it. Pictures could be collected and pasted onto a poster-sized diagram of a dead tree. Features like holes and nests should be added.

Ask students where the leaves that fall to the ground in autumn have gone by spring. Explain that dead trees eventually lose their branches and fall down, returning to the soil nutrients for other trees and plants. Discuss with students how this same principle is used by people who return their grass clippings to the lawn, make compost piles or turn their garden under in the fall. Visit the perimeters of the school yard to find evidence of plant material that is decaying and returning to the soil. Is there evidence of insect activity in this decaying material?

Owls at night make ghostlike sounds. Bats may live under loose sections of bark. White trunks and branches might look like skeletons in the moonlight. Go outside and look for dead trees and branches and any animals living in them.

EVALUATION

Have students draw a picture with the title "What Good Is a Dead Tree?." The picture should show as many ways as students can think of that dead trees are useful. Ask the students, "Do fish live in trees?" Did any students include fish in their pictures?

EXTENSION

As a class project, make a mini compost pile in a suitable container such as a three-pound coffee can with ventilation holes or two-liter plastic beverage bottle (see "References," page 49, *Bottle Biology Resources Network*). Add dead leaves and small twigs during the school year, stirring frequently. Measure and keep a record of the amount of decomposition that takes place each month. Have older students calculate the rate of decomposition. At the end of the school year, make a special short field trip to a young tree and fertilize it with this compost.

VOCABULARY

bore	nutrient
decay	succession
invertebrate	

Dead and Alive

STUDENT'S GUIDE

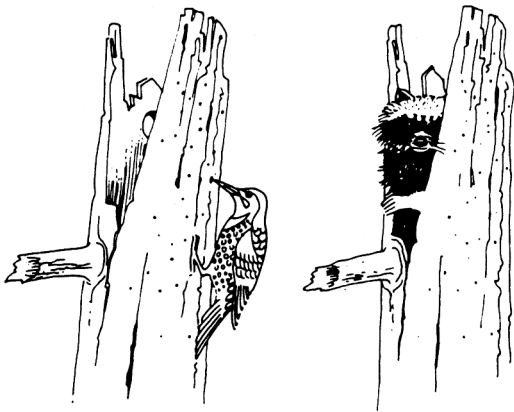
Even when a tree is dead, it is full of life.

Bugs Love Them

Many kinds of bugs love dead trees. They eat the wood and build their homes in them.

So Do Birds

Some birds love to eat the bugs that live in dead trees. Birds make big holes in dead trees and move right in. Birds that hunt like dead trees. There are no leaves so they have a good view.

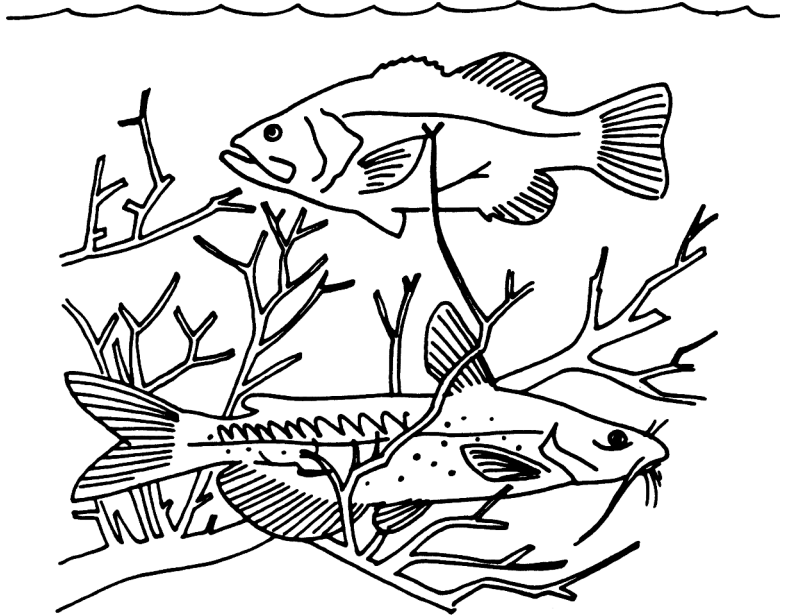


Home Sweet Home

When limbs fall on the ground, animals make homes in them.

When Fish Live in Trees

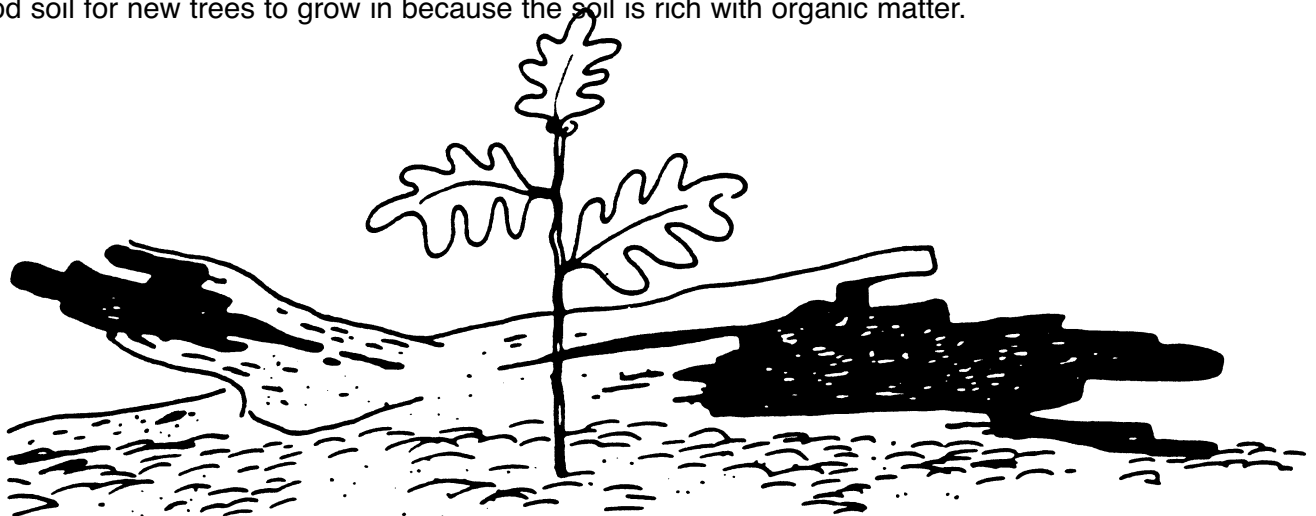
When limbs or trees fall in the water, they make homes for



fish.

How Old Trees Become New Trees

After dead trees fall down, they become part of the soil. Soon there is no more tree. But there is very good soil for new trees to grow in because the soil is rich with organic matter.



Who's at Home in this Dead Tree?

Connect all the dots to discover the mammals and birds that live in this dead tree. Can you name all of them? Color the tree and the mammals and birds.

