

"Becoming"

Grades 4

Hundreds of plants and animals around the world are threatened with extinction. As of January 2000, Tennessee is home to 102 threatened and endangered species. Sometimes, when a problem is close to home, it becomes more real to young people. After this activity, students will understand more about the endangered and threatened species in their own state.

Objectives

Students will be able to (1) list some of Tennessee's endangered, threatened, extirpated, and extinct species. (2) know the facts about one species and (3) communicate the information to their classmates.

Age

Grade 4

Time

One classroom period of approximately 45 minutes.

Setting

This activity can be conducted either indoors or out. Should you decide to conduct the activity indoors, make sure there is plenty of room for the students to move around.

Correlation

C: Life Science

D: Earth Science

E: Science and Technology

F: Science in Personal and Social Perspectives

G: History and Nature of Science

Materials

- One copy of each of the species descriptions from this guide, pgs. 24-79.
- "Becoming" species cards
- Paper for drawing
- Coloring materials—paints, crayons, or markers

Preparation

- The "Learn the Terms" vocabulary activity should precede this activity.
- Read the species descriptions found in this guide, pgs. 24-79.
- Make copies, cut out, and separate the "Becoming" species cards, pgs. 120-124.
- Make one copy of each of the species descriptions found in this guide. The picture on each description will be needed for this activity.
- Organize these materials so that each description is attached to its corresponding "Becoming" species card.

Procedure

1. Give each student a "Becoming" species card and the copy of its corresponding species description. If there are more students than there are cards, have students pair up or form teams of three and pass the cards out to the teams.
2. Explain to the class that they will be learning about an endangered, threatened, extirpated, or extinct species that is or was once found in Tennessee. After they have read about their species on the cards, they will tell the rest of the class about their species and teach the class an action to help everyone "become" that species.
3. Give the students several minutes to look over their cards and pictures on the species descriptions. Depending on the reading level of your class, they may need your assistance with this step.
4. Have each team or student tell the rest of the class the information found on the "Becoming" species card. Then have them teach the class the action that represents each species.

5. Get in a large circle. Pass out species names at random. Have students take turns performing the action for their randomly-assigned species while the other students guess the species.

Extension

1. Once the class has learned about the different species, have them draw pictures of their species, either alone, in its ecosystem, or performing the action. Discuss with the students, or have students research (from the species descriptions) reasons for each species' decline. Have them draw or list ways to help prevent extinction.
2. Have the students display their pictures on a classroom bulletin board or in a scrapbook.
3. Discuss Tennessee's diversity; so many species are found in the state. Explain to the students that, in addition to the species described in this activity, there are many more species that are endangered and threatened throughout the state and the rest of the world. Lead a discussion with the students about other threatened and endangered species they are familiar with.

Evaluation

Mix up all the cards in a pile, and ask the students to come up one at a time and draw a card from the pile. Have them match the cards to the picture of the species or the person who "became" that species.

"Becoming" Species Cards

I am a Tennessee yellow-eyed grass. I am an endangered species.

I live in moist, calcium-rich soil.

I depend on the spring and seep ecosystems in Tennessee.

Action: My flowers open in the morning and wither away each afternoon. (Slowly open arms wide, then slowly close them.)

I am a royal snail. I am an endangered species.

I live on leaves and twigs in quiet spring pools. Sometimes I hide in the mud.

I depend on the spring and seep ecosystems in Tennessee.

Action: I move very slowly as I search for tiny food items. (Clench fist with thumb extended and slide it slowly over your other arm.)

I am a slackwater darter, a tiny fish. I am a threatened species.

I live in slow, quiet streams, and I lay my eggs in grassy, shallow seepage springs.

I depend on the spring and seep ecosystems in Tennessee.

Action: Each summer we females attach our eggs to seepage vegetation, and the males guard the eggs. (Use your hand to represent the fish and make it "swim.")

I am a bog turtle. I am a threatened species

I live in soft, muddy soil, where I hide behind sedges and in deep moss.

I depend on the mountain bog ecosystems in Tennessee.

Action: To escape from predators, I burrow into the mud. (Use one hand to burrow under the other.)

I am an Indiana bat. I am small, soft, and brown. I am an endangered species.

I live in caves in the winter, and in the summer I raise my young underneath tree bark.

I depend on the cave ecosystems in Tennessee.

Action: I can eat up to 3,000 insects in one night! (Use your arms like wings as you “fly” around pretending to catch imaginary insects.)

I am an American hart’s-tongue, a type of fern. I am an endangered species.

I live in shady, moist soil near the entrances to caves.

I depend on the cave ecosystems in Tennessee.

Action: I grow in dark moist places. (Use hands to create a “cave.”)

I am a Tennessee coneflower. I am an endangered species.

I live in open, shallow soil in Tennessee’s cedar glades.

I depend on the cedar glade ecosystems in Tennessee.

Action: I am an ingredient in some types of medicine. (Pretend to take bad-tasting medicine.)

I am a Pyne’s ground plum. I am an endangered species.

I live in cedar glades where there is some shade.

I depend on the cedar glade ecosystems in Tennessee.

Action: I am a “nitrogen fixing” plant. This means I take nitrogen from the air and put it into the soil so that other plants can have some. Plants must have nitrogen in order to survive. (Take deep breaths through your nose, breathing loudly.)

I am an Eggert’s sunflower. I am a threatened species.

I live in sunny, dry fields. Some would say I grow in small prairies.

I depend on the barrens ecosystems in Tennessee.

Action: I have big yellow flowers, and I can grow to be 8 feet tall! (Reach up to the sky, as tall as you can, pretending to reach for the sunshine.)

I am a smoky madtom, a tiny fish. I am an endangered species.

I live in small, clean streams underneath flat, palm-sized rocks.

I depend on the river ecosystems in Tennessee.

Action: I find my food – insect larvae – along the bottoms of streams. (Use one hand as a fish and nip at the other hand like it is the river bottom and you are looking for food.)

I am a Cumberland monkeyface pearlymussel. I am an endangered species.

I live in clean, fast-flowing streams with gravel and sandy bottoms.

I depend on the river ecosystems in Tennessee.

Action: I filter tiny creatures out of the water for food, and I help keep the water clean and clear for other species. (Cup your hands together and slowly move your thumbs apart to open and close your “valves.”)

I am a pallid sturgeon, a very big fish. I am an endangered species.

I live along the bottoms of very big rivers, like the Mississippi.

I depend on the river ecosystems in Tennessee.

Action: Like other fishes, I obtain oxygen from the water with my gills. (Place your hands at your cheeks and flap them slowly back and forth while “swimming” around, getting oxygen.)

I am a Nashville crayfish. I am an endangered species.

I live in Mill Creek near the city of Nashville. I hide under rocks and near vegetation.

I depend on this river ecosystem in Tennessee.

Action: I have orange and black claws that I use to collect my food from the stream bottom and to chase off unwanted visitors. (Open and close your thumb and index finger like claws.)

I am a peregrine falcon, one of the fastest animals in the world! I am a recovered species. I was once endangered.

I live on cliff ledges and sometimes on the tops of buildings. This is where I raise my chicks.

I depend on the high-elevation ecosystems in Tennessee.

Action: I can reach speeds of 200 miles per hour! (Use your arms as wings and pretend to soar.)

I am a rock-gnome lichen, a small fungus-like species. I am an endangered species.

I live on cliffs high in the mountains where I cling to rocks and soak up rainwater for water and minerals.

I depend on the high-elevation ecosystems in Tennessee.

Action: I get minerals and water directly from the rain and am an excellent indicator of air quality. When the air quality is bad, my health is bad. (Cough, to show that poor air quality affects you.)

I am a spruce-fir moss spider, the smallest tarantula in the world. I am an endangered species.

I live on moist moss mats in shady mountaintop spruce-fir forests.

I depend on high-elevation ecosystems in Tennessee.

Action: I build tube-like webs to catch tiny creatures for food. The silk I use to spin my webs is stronger than steel! (Cross hands and wiggle fingers [not thumbs] like a spider crawling.)

I am a Carolina northern flying squirrel. I am an endangered species.

I live in spruce-fir forests and hardwood forests high in the mountains.

I depend on the high-elevation ecosystems in Tennessee.

Action: I have thin, strong skin stretching between my “wrists” and “ankles.” This helps me glide when I leap from tree to tree. (Pretend to glide and leap between imaginary trees.)

I am an eastern cougar. I am a wildcat. I have been extirpated from Tennessee.

I lived in large tracts of wilderness, where there was plenty of food to eat, like deer. I needed plenty of room to roam and privacy from human beings.

I depended on many different Tennessee ecosystems.

Action: We wildcats are secretive and quiet. (Open your mouth and make cat-like sounds.)

I am a green pitcher plant, a carnivorous plant; I eat insects! I have been extirpated from Tennessee.

I lived in wet, spongy, acidic soil.

I depended on the mountain bog ecosystems in Tennessee.

Action: We carnivorous plants are insect “traps.” (Look up and open your mouth.)

I am a Carolina parakeet. I am a brightly colored green and yellow parrot, the only parrot native to North America. I am now extinct.

I lived in swampy forests, fields, and wetlands. I liked to eat fruit, so I visited farms and gardens frequently.

I depended on many different Tennessee ecosystems.

Action: As I mentioned before, Carolina parakeets loved to eat fruit. (Fold your hands under your armpits and flap your wings.)

I am an extinct freshwater mussel; there are many of us.

I lived in Tennessee's clear, free-flowing rivers.

I depended on the river ecosystems in Tennessee.

Action: Before our habitat was destroyed, I used to pump water through my valves to help clean the water. There were so many of us then it was said that the stream bottoms were "paved with mussels." All that is left of me is my shell. (Hold hands together as though scooping up water.)