



What If We Run Out?

National Education Standards

Science

✧ Standard C: *Life Sciences* — Populations and ecosystems.

✧ Standard F: *Science in Personal and Social Perspectives* — Populations, resources, and environments.

Geography

✧ *Environment & Society*— Understand how human actions modify the physical environment.



OVERVIEW

In this activity, students will play an active, outside game that will help them understand the consequences of shrinking and fragmented habitat and human impacts on wildlife populations.

OBJECTIVES

Students will:

1. Be able to describe the consequences of shrinking habitat and to describe the role of public lands in preserving habitat.
2. The students will be able to describe at least three ways they can help preserve wildlife habitat.

SUBJECTS

Science, Geography

VOCABULARY

Public lands, habitat, competition, carrying capacity, habitat fragmentation, urban sprawl

TIME

1, 50-minute session

MATERIALS

One name tag for each child.

Enough food, water and shelter cards to satisfy the following guidelines. You will be playing four rounds of this game. For the first round, make enough of each card for each child to get one of each. For each of the next three rounds, subtract six from the original numbers of cards.

At least fifteen yards of yarn or twine.

A large open area or playing field.

A bucket or cardboard box for collecting cards in between each game round.

Masking tape.

BACKGROUND

As more and more land becomes habitat for humans, there is less and less room for wild plants and animals. National Forests and other public lands become increasingly important, not only for wild animals, but also for us - as living laboratories, as recreation spots and as sanctuaries from our own busy habitats.

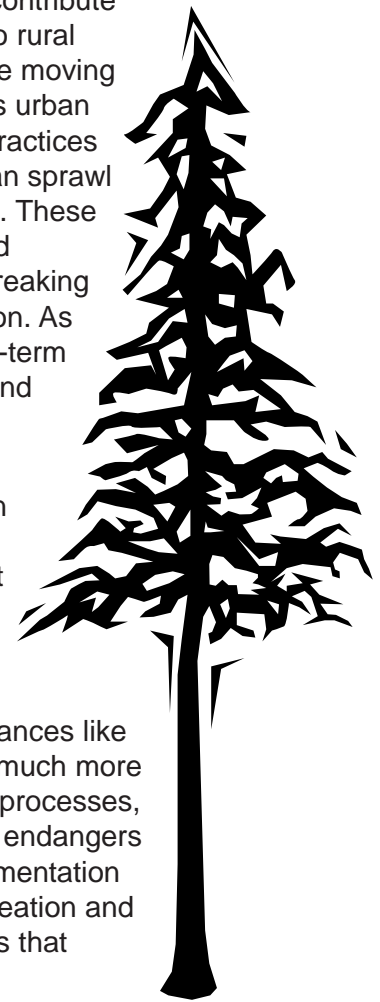
Between 1997 and 2001, approximately 8.7 million acres of open space were lost to development – approximately 3 acres per minute or 6,000 acres a day. In 34 years, from 1953 to 1997, 10 million acres of forestland yielded to homes and other uses. The prospect of losing more forestland to development as U.S. population rises is great.

Across the nation, forests and rangelands are being broken up into smaller parcels, leading to the loss of habitat, affecting air and water quality, and reducing economic viability of farming, ranching, and forest management enterprises.

The American lifestyle, and the public policies supporting that lifestyle, contribute to the fragmentation of forests. More and more Americans are moving to rural areas in search of peaceful country settings. The phenomenon of people moving out of congested urban environments to settle in rural areas is known as urban sprawl. Urban sprawl is characterized by wasteful, inefficient land-use practices because development takes place horizontally instead of vertically. Urban sprawl leads to the parcelization of land as people buy, subdivide, and sell land. These land transfers divide forest resources into more numerous, smaller-sized parcels. Parcelization is often a precursor to forest fragmentation, the breaking up of large tracts of forest into smaller fragments through land conversion. As a result of human development, many forestlands are converted to long-term or permanent non-forest use. Approximately 2.4 million acres of forestland in the nation is being converted to developed land every 2 years.

With increased development, public lands become more and more isolated too, functioning like natural islands in a sea of human habitat. In recent years, scientists have become concerned that these islands of habitat may not be enough for the survival of some species. Throughout the National public lands system, National Forests, Parks and Wildlife Refuges are beginning to work with their neighbors to help protect wildlife habitat outside park boundaries.

Contiguous forest habitat can also be fragmented due to natural disturbances like storms and fires. However, human-caused forest fragmentation can be much more destructive than natural disturbances. Since it disrupts many ecological processes, forest fragmentation threatens the health and sustainability of forests. It endangers wildlife habitats, both plant and wildlife diversity, and water quality. Fragmentation can also impair the viability of a forest as an economic resource for recreation and timber. Additionally, fragmentation destroys irreplaceable, pristine forests that enhance the natural beauty of many regions.





BEFORE THE ACTIVITY

For the first round, make enough of each card for each child to get one of each. Use a different color for food, water, and shelter. For each of the next three rounds, subtract six from the original numbers of cards. *(If you start out with 30 of each color for Round One, make 24 for Round Two. 18 for Round Three, and 12 for Round Four, giving a total of 84 cards of each color.)*

Before going outside, have each student choose a forest animal that they'd like to be. Have them write the name of their animal on a name tag and tape it onto themselves.



ACTIVITY

Round One

1. Find the center of your play area. Have the students stand in a large circle. Explain to them that they are forest animals, constantly searching for food, water and shelter for survival. Life is good though, and they have plenty of space in which to wander and find what they need.
2. Randomly scatter the Round One cards over a large area and tell the students they need to gather at least one of each color card in order to survive. Make sure they know that they must walk, not run and that pushing is not allowed.
3. After the students have gathered up all the cards, find out who has enough cards and who does not. Have the "have nots" become spectators, explaining that every animal in the forest needs to work to find its food and must compete with other animals to find enough.

Round Two

1. Give the rope to the "have nots" of Round One and have them form a large circle with it. The students who "survived" Round One should stand inside the circle.
2. Scatter the Round Two cards within the circle and repeat Round One's procedure.
3. During the discussion, use the children's name tags to point out the animals that no longer live in the forest. Make the point that as the size of a habitat decreases, the available food, water and shelter also declines, making survival more of a challenge.

Round Three

1. Tighten the rope circle now, making the "habitat area" smaller, barely large enough for the remaining students to stand in. *(There will only be room for a few rope-holders, so have the remaining spectators stand to one side where they still can see.)*
2. Repeat the procedure, using the Round Three set of cards. Again briefly point out that as the habitat area decreases, so does the number of animals and the variety of animals.

Round Four

1. Make the circle even smaller, too small for all the remaining students to fit.
2. Using the Round Four set of cards, play the game one more time.



ACTIVITY—DISCUSSION

In your final discussion, point out that animals need habitat to survive. If there is not enough land to supply food, water and shelter for animals, their numbers will decline or disappear. And as illustrated in Round Four, habitat can be reduced to a point where there is not even enough space left for wildlife. One of the reasons that public lands are set aside is to provide habitat for wildlife. As development expands along public land boundaries, the remaining habitat within National Forests, Parks or Wildlife Refuges becomes more and more valuable.

Ask the students to think of ways that they can help preserve wildlife habitat outside of National or State public lands. Some answers might include not littering, picking up litter when they find it, protecting wildlife habitat in their neighborhoods by being careful along streams or forest groves, or writing letters to their members of congress and other decision-makers, asking for their help in protecting wildlife habitat. The children will likely come up with many other ideas.

EXTENSIONS

The protection of wildlife habitat can sometimes come in conflict with human needs and desires, often causing considerable controversy. For this extension, have your students follow “Wildlife Current Events” and look for news about habitat conservation on TV, radio and in newspapers and magazines. Have them bring in articles to post on a bulletin board or hold a weekly discussion period to talk about these current events.



CREDIT

This activity is adapted with permission from materials from the Olympic National Park, National Park Service. Visit their website at <http://www.nps.gov/olym/> to learn more about this magnificent temperate rain forest in the Pacific Northwest.