

# Born To Be Wild:

*The Current Situation and Possible Future of Wildlife in the United States*



## Meet Dr. Flather:

I like being a scientist because it is essentially problem solving—and in my case, the problems deal with the *conservation* of wildlife. Working on wildlife conservation problems can be very satisfying when their solution leads to better management of the *habitats* where *wildlife* live.



Dr. Flather:



### Thinking About Science

Scientific studies can be carried out at a variety of *scales*.

Scales can vary by size and by time. For example, a small-scale study may be conducted at the *molecular* level, or it might only cover a time period of a few seconds or minutes. A large-scale study may be focused on the stars beyond our solar system, or it might cover a period of years or decades.

The scale of this study was large, covering the entire United States and a time period of over 40 years. But there

was something very different about the long-time scale of this study! Instead of conducting the research over a period of years, the scientist predicted what might happen in the future. In this study, the scientist was asked to describe the current situation and potential future of different wildlife *populations*, 40 years into the 21<sup>st</sup> century.



### Thinking About the Environment

In the natural environment, every living thing has a role to play to help keep its *ecosystem* healthy. Animals do their part to *sustain* their environment. Bees, for example, *pollinate* flowers. Some animals eat fruit and later *defecate* the seeds, which then *germinate* in the soil. Other animals catch seeds in their fur, and later the seeds fall off and germinate. Animals such as earthworms digest dead plant and animal matter. Worm wastes, called castings, provide nutrients for the soil. Animals use plants for food, shelter, and as a place to raise their young. As you can see, plants and animals depend upon each other

In this study, the scientists wanted to predict the future of different types of wildlife. Will the populations of different animal *species* go up, down, or stay the same in the future? By knowing something about the possible

## Glossary

**conservation** (kän sūr va shun): The care and protection of natural resources such as forests and water.

**habitats** (hab uh tat): Environments where a plant or animal naturally grows and lives.

**wildlife**: (wild lif): Animals that live in the wild.

**scales** (skā lz): A series of steps or degrees based on size, amount, rank, etc.

**molecular** (mō lek yoo lūr): Having to do with molecules, which are the smallest particles of a substance that can exist alone without losing their chemical form.

**populations** (pop yoo la shunz): The total number of individuals of separate types of plants or animals occupying an area.

**ecosystem** (e kō sis tem): Community of plant and animal species interacting with one another and with the nonliving environment.

**sustain** (suh stan): To keep up or maintain.

**pollinate** (pāl uh nat): To place pollen on the pistil of a flower, which fertilizes the flower and causes seeds to develop.

**defecate** (def uh kat): To get rid of waste matter from the bowels.

**germinate** (jūr muh nat): To start growing or developing.

**species** (spe sez): Groups of organisms that resemble one another in appearance, behavior, chemical processes, and genetic structure.

**status** (staht us): The state or condition of something.

**trends** (trendz): The directions or courses that things take.

**grasslands** (gras landz): Open lands with grass growing on them.

**cavities** (kav i tez): Hollowed out spaces.

**migrate** (mi grat): To move from one place to another.

**habitat** (hab i tat): Environment where a plant or animal naturally grows and lives.

### Pronunciation Guide

|          |           |           |            |
|----------|-----------|-----------|------------|
| <b>a</b> | as in ape | <b>ô</b>  | as in for  |
| <b>â</b> | as in car | <b>û</b>  | as in use  |
| <b>e</b> | as in me  | <b>ü</b>  | as in fur  |
| <b>i</b> | as in ice | <b>oo</b> | as in tool |
| <b>o</b> | as in go  | <b>ng</b> | as in sing |

Accented syllables are in bold.

future of different animal species, we can perhaps help those species to stay healthy, and, therefore, help to keep the natural environment healthy.

## Introduction

As you know from reading “Thinking About the Environment” (above), animals play an important role in maintaining the health of our natural environment. It is important to know the *status* of different kinds of animal populations, both now and into the future. This is important for many reasons.

One reason is that healthy animal populations probably mean that the whole natural environment is also healthy. If some species become endangered, it might be a clue that the environment is not as healthy as it could be.

Another reason is that different animal species have different values for people. For

example, some people like to feed and watch birds in their backyard (figure 1). For these people, it is important to know whether the number of birds in their backyard might go up, go down, or stay the same in the future.

One of the questions the scientist in this study wanted to answer was: What are the *trends* in different wildlife populations? In other words, the scientist wanted to predict whether the population of certain animals species will go up, go down, or stay the same into the 21<sup>st</sup> century.



## Reflection Section

- What kinds of wildlife live near your home or school? Wildlife

includes all kinds of animals that have not been tamed by people. Make a list of as many different kinds of wildlife as you can.

- How are different kinds of wildlife important to different people? List at least four reasons people might value wildlife.

## Method

Often, scientists like to collect their own information. Sometimes, however, the questions they are trying to answer cannot easily be answered by collecting their own information. When scientists have to collect information at a large scale, it takes a lot of time and money. To answer his question, the scientist in this study asked other scientists who had been collecting smaller pieces of similar information.

For example, the scientist asked people who work for different State governments to share information on wildlife populations in their State. He also asked some of these people to predict whether the number of animals living in the wild would go up, down, or stay the same in the future. He also asked scientists working for other organizations to share their information. By doing this, the scientist received information from many different places. Then, he put it all together to learn what is going on with wildlife populations nationally.

When you prepare a paper for a school project, you should also collect information from many sources and put it all together. When you do that, you are like the scientist in this study!



Figure 1. Bird at a backyard feeder.



## Reflection Section

- What is one advantage of asking other people to share information that they have collected?
- What is one disadvantage of asking other people to share information that they have collected?

## Findings

The scientist could not collect information on every species of animal. Remember, he had to rely on information collected from other scientists. In this article, you will learn what the scientist discovered about ducks, birds, turkey, deer, bear, squirrels, and rabbits.

The scientist found that duck populations increased from 1990 to 1995, ending a period of declining populations since 1980 (figure 2). The scientist thinks that this increase in the numbers of ducks is related to an increase in wetlands available to ducks during their breeding season. Because the United States experienced high amounts of rainfall during the early 1990s, there were more wetlands available.

The scientist used information from a yearly survey of birds to report the population of different bird species. He reported that the number of species with increasing populations is about equal to the number of species with decreasing populations (figure 3).

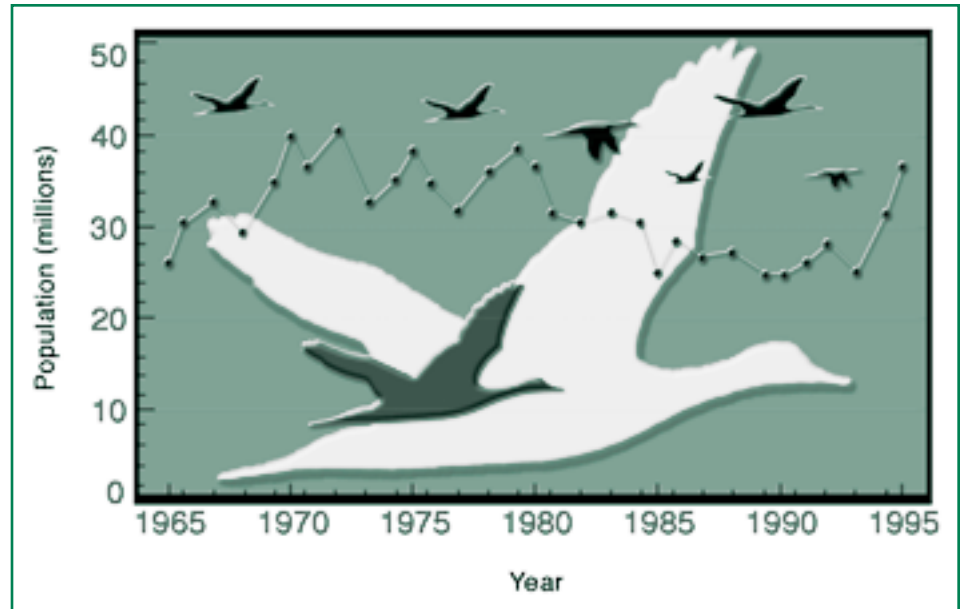


Figure 2. Changes in duck populations from 1965 to 1995.

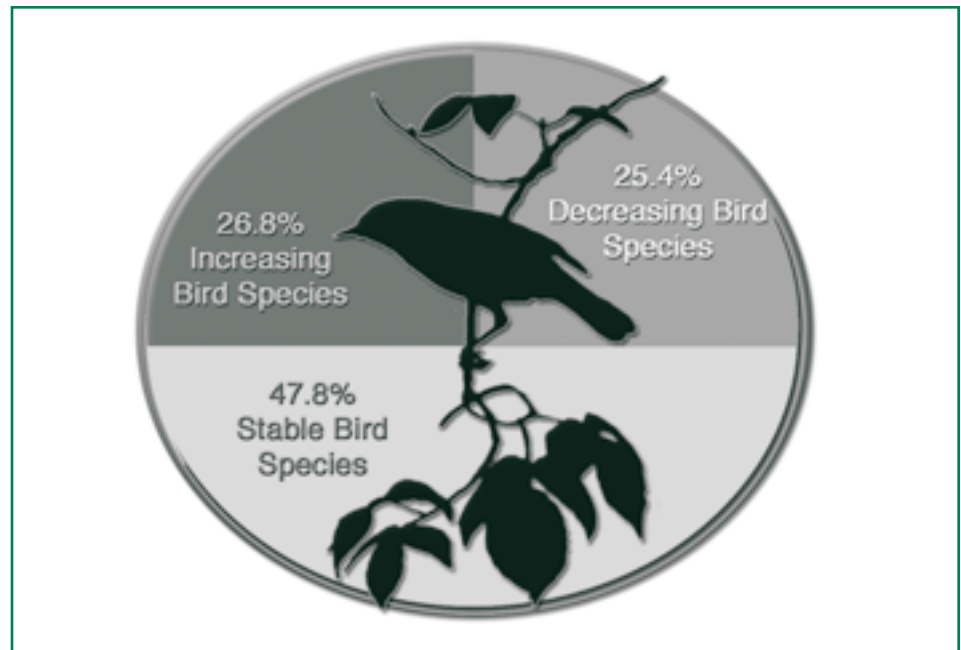


Figure 3. The number of bird species with increasing populations is almost equal to the number of bird species with decreasing populations, 1966-1996. There is a proportion of bird species whose populations is staying the same.

The scientist reported that most of the bird species with decreasing populations were birds that nest in or near urban areas, in *grasslands*, or on or near the ground (figure 4). The bird species with increasing populations were

birds that nest in wetlands or on open water such as bays and oceans, in tree *cavities*, or birds that *migrate* short distances.

The scientist found that the populations of some other

species of wildlife were predicted to go up in the future, some were predicted to go down, and others were predicted to stay the same (figures 5-12).

You probably have heard about threatened and endangered species. The future existence of threatened species may be in danger if special care is not taken to protect the areas where they breed and live. Endangered species are species whose existence is already in danger.

The scientist wanted to find out if there are areas of the United States with more threatened and endangered species than other areas. He

discovered that the coastal United States has a high number of threatened and endangered species (figure 13, pg. 30).

The scientist studied predictions about the future of the natural environment in the United States. This included predictions of temperature changes, human population growth, how much forest land might be cleared, how many wetlands there might be, and other ways that the land might change in the future. He combined this information with what he already knew about the areas of the United States with a high number of threatened and endangered species (see figure 13). From this

information, the scientist predicted which areas of the United States will have the greatest increases in the number of threatened and endangered species in the year 2020 (figure 14, pg. 30).



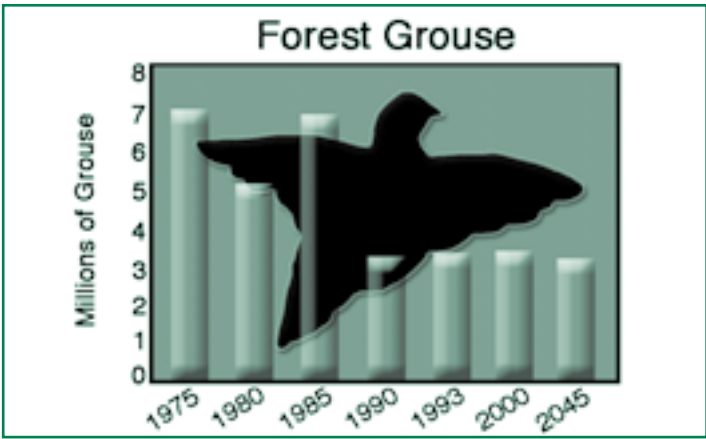
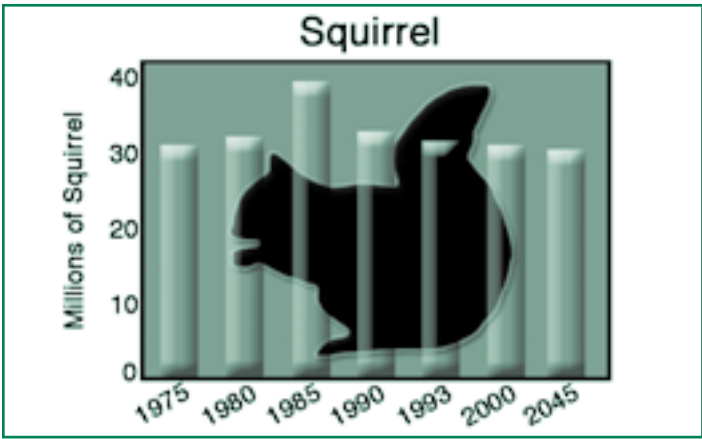
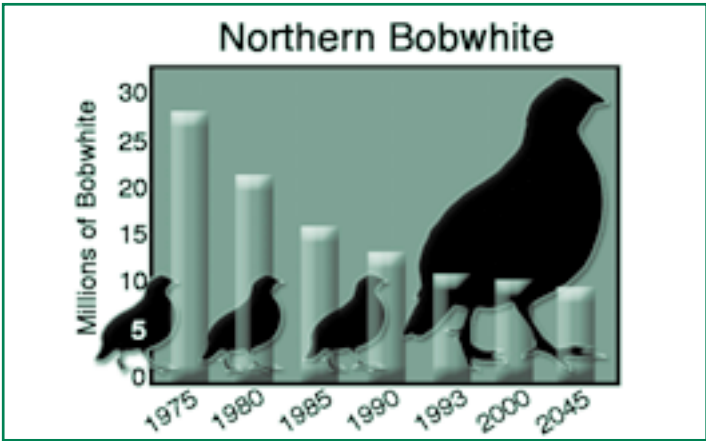
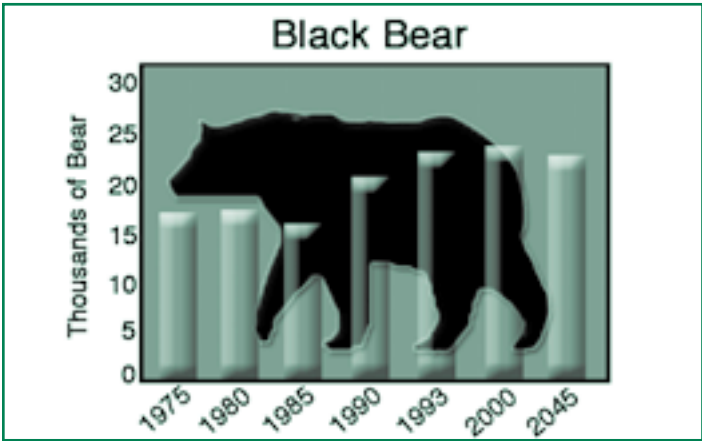
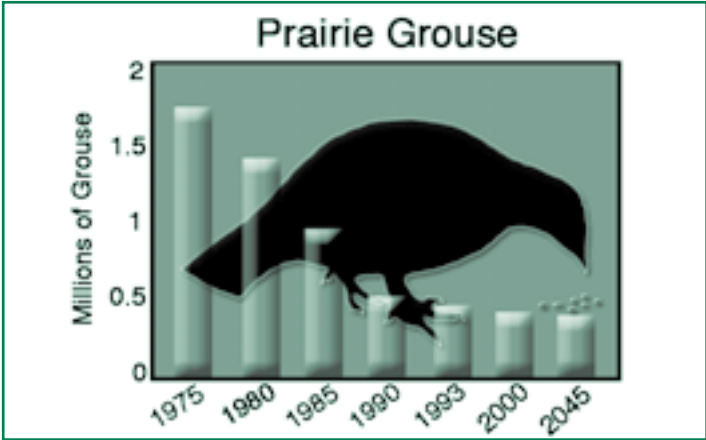
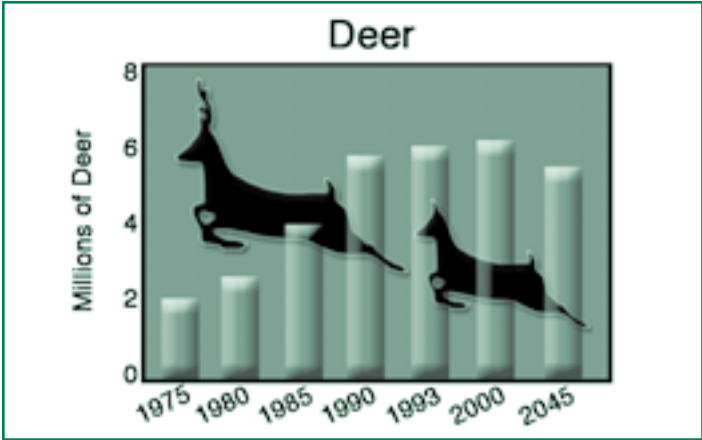
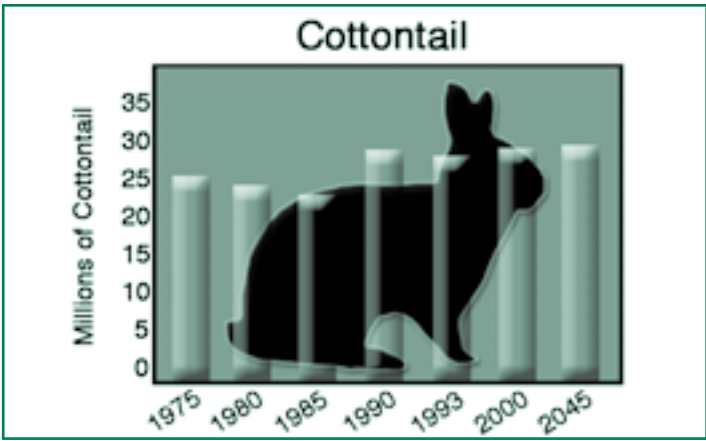
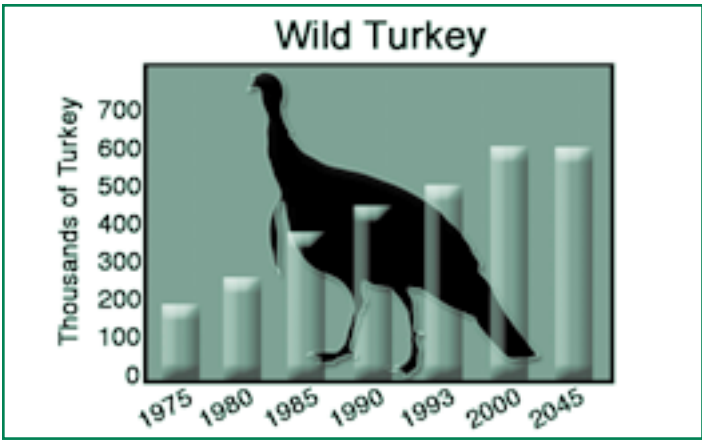
### Reflection Section

- The scientist found that the populations of bird species that

nest in urban areas were declining. He was surprised, considering that the number of urban areas is increasing. What might be some of the reasons those populations seem to be declining?



Figure 4. Sage grouse is a bird species that lives on the ground in grasslands.



Figures 5-12. The populations of some wildlife species were predicted to go up, some were predicted to go down, and others were predicted to stay the same.



Figure 13. Areas of the United States with a high number of threatened and endangered species.

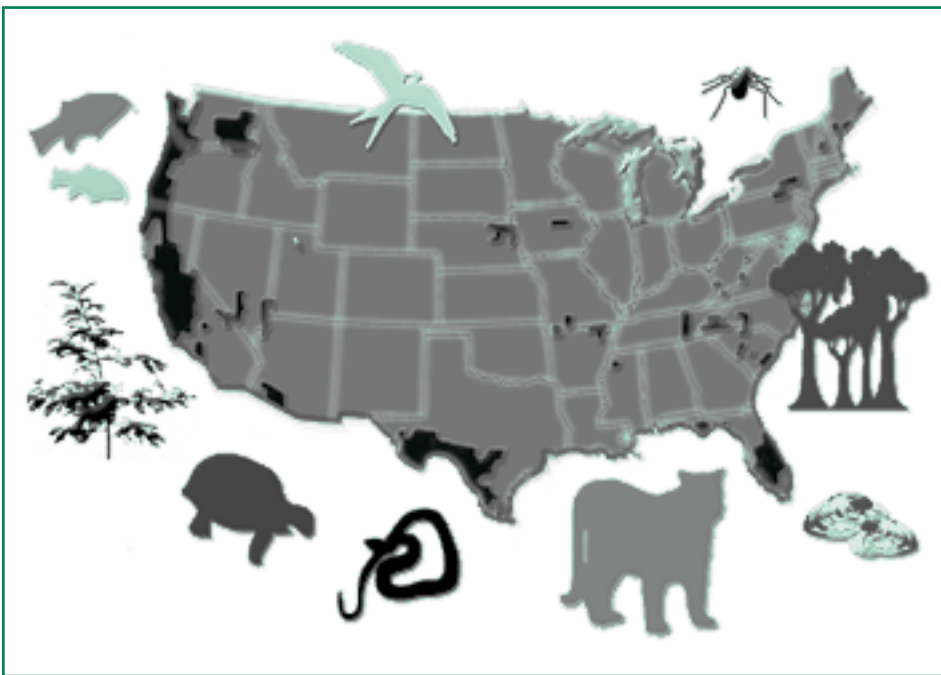


Figure 14. Areas predicted to have the greatest increases in the number of threatened and endangered species in 2020.

- The number of ducks seems to be related to the amount of rainfall received each year. Think about whether the rainfall amount in your area this year is about normal, greater, or less than normal. Go back and review

the list of wildlife that you made for the first Reflection Section. Do you think that the amount of rainfall is affecting the wildlife in your area? Why or why not? If you think that the amount of rainfall is affecting the

wildlife, how is the wildlife being affected?

### Implications

Many wildlife species are staying the same or are gaining in numbers. Others are losing numbers, and the existence of some of those species is threatened or endangered. In some areas, the natural environment is healthy enough to support wildlife.

In other areas, changes in how we use the land are placing some wildlife in danger. When humans make changes to the land, we always affect the wildlife that lives there. Sometimes we make changes that improve the land for wildlife, and sometimes we make changes that damage the land for wildlife.



### Reflection Section

- When we make changes in the land that damage it for wildlife, do you think that we are making the land more healthy or less healthy? Why or why not?
- Do you think that people should consider the needs of wildlife when they make changes to the land? Why or why not?

From: Flather, Curis H.; Brady, Stephen J.; Knowles, Michael S. 1999. *Wildlife resource trends in the United States: A technical document supporting the 2000 USDA Forest Service RPA Assessment*. Gen. Tech. Rep. RMRS-GTR-33. Fort Collins, CO: USDA Forest Service, Rocky Mountain Research Station.



## FACTivity

The scientists in this study identified areas of the United States that may have a high number of threatened and endangered animal species in the future. When an animal species becomes endangered, it could die out and be lost forever. Some animal species, such as the Passenger Pigeon, are already lost. The question you will answer in the FACTivity is: What are the advantages and disadvantages of different ways to protect an endangered animal species from dying out?

The method you will use to answer this question is: Divide your class into three equal groups. Each of the groups will take a suggested solution on the best way to protect an animal species from dying out. The three possible solutions are:

1. We should put some of the individuals from an endangered species in a zoo where they will be protected. They can breed and live in the zoo. Then we will not have to worry about them dying out in the natural environment.
2. Whenever a wildlife species becomes endangered, we should catch some of the animals. Using the latest technology, we should clone the animals, then release all of the animals into the natural environment. Then we will not have to worry about the species dying out in the natural environment.
3. We should protect the existing *habitat* of endangered species from damaging human activity so that the endangered animals can live on their own in the natural environment.

Members of each group should discuss the solution as a group. Some of the questions each group should consider are:

### Group 1

1. Are animals that live in a zoo still wild animals?
2. Do you think that the land where the endangered species used to live will become more or less healthy if the endangered species living there is gone?
3. Do people have the right to put wild animals in a zoo, even if one of their purposes is to protect the animals?

### Group 2

1. Would cloning individuals from an endangered species make that species healthier or less healthy?
2. What might be some of the effects of cloning individuals from an endangered species?
3. Do people have the right to clone animals?

### Group 3

1. Who will pay for protecting the habitat of endangered species? Should we spend tax money to protect the habitat?
2. What about people who want to build homes and businesses where endangered species live? What should they do? Do they have a right to live in those areas, even if by building there an animal species might die out?
3. Do animals have a right to live in the natural environment, even if their habitat is wanted by people for human purposes?

Spend about 15 minutes discussing your solution. Some group members might decide to support the solution, while others might decide that they cannot support the solution. Each of the three groups should divide in two, based on whether they support or do not support that solution.

Your class will now be separated into up to six groups. Each group should appoint a spokesperson. The spokesperson of each group will tell the group why the group supports or does not support the solution.