

Species Survey Pre Activity

Program at Nature Station: Reptiles in Our World

Grade Level: 7th – 12th

Program Length:

Prep time: minimal – just print and photocopy the “Species Survey” (included)

Activity time: 20-30 minutes class time for poll & discussion;

Homework time + 20 minutes class time for group projects

Group Size: 20-30 students (one class)

Setting: Classroom + homework (or library time)

Vocabulary:

- biodiversity - the variety, abundance, and complexity of species present and interacting in an ecosystem; or, the variety and relative abundance of all life forms on earth
- habitat - an area that provides an animal or plant with adequate food, water, shelter, and living space
- species - a population of organisms composed of related individuals that resemble one another and are able to breed among themselves, but are not able to breed with members of another species

Materials: “Species Survey” poll (included)

Access to reference materials – library, internet, etc.

Background Information:

This activity encourages students to think about the value of all types of living things. In Part I, the teacher has the students take a quick poll about these values, and then tallies the results for the class. In Part II, the students work in small groups to create a public education campaign about the value of an often overlooked species.

Most people these days are familiar with the concept of endangered or rare species. Some species, such as the Bald Eagle and the Giant Panda, have become very famous as endangered species. For a variety of reasons, many people rally to the cause of certain species when they are in trouble.

There are many other species, however, that are equally at risk, but receive little attention. Some of these receive little attention from people because we view them as bad or dangerous to us, such as the Pygmy Rattlesnake. Others receive little attention because they are very small and easily not noticed, such as the Fanshell Mussel. Plants, such as Price’s Potato Bean, often generate less excitement than animals. Some animals are unpopular and not seen as something we want or need, such as the Indiana Bat. In

other words, for various reasons, people tend to support the conservation of certain species more than others.

This question is important to the study of reptiles because reptiles tend to fall into this group of overlooked and unpopular species. It is more difficult to get people to care about saving a species of water snake than to care about saving, for example, a Humpback Whale or a Mountain Gorilla.

In this activity, students will examine their own values about this issue and figure out what they believe about the conservation of different species.

Procedure:

PART I

1. Pass out copies of “Species Survey” poll (included below) to students. Students should read each question on their own and answer it according to how they feel.
2. When the students have finished, tally the class’s responses on the chalkboard, an easel, etc.
3. Have a class discussion about why people are often more interested in protecting some types of species more than others. Some questions you might ask are:

- Why are some people more interested in protecting birds and mammals than reptiles, amphibians, insects, and other “lower” animals and plants?

- Why do people often want to protect large or beautiful species more than smaller or less beautiful ones?

- Why are some people more interested in protecting animals than plants?

Try to bring out the point that all living things are important in a natural community. For example, giant trees need earthworms to survive, because earthworms keep the soil healthy. Tiny, shrimp-like crustaceans called krill are critical to the survival of whales, seals, and penguins. All of these animals depend on krill for food. All living things have an important role to play in nature.

PART II

1. Divide the class up into small groups. Each group will have the challenge of showing how one small or unglamorous species is indeed important to its natural community and to people.
2. Assign each group one of the following species:

- American Burying Beetle (*Nicrophorus americanus*)

- Red-cockaded Woodpecker (*Picoides borealis*)

- Western Pigmy Rattlesnake (*Sistrurus miliarius streckeri*)

- Copperbelly Water Snake (*Nerodia erythrogaster neglecta*)
- Indiana Bat (a.k.a. Indiana Myotis) (*Myotis sodalis*)
- Barn Owl (*Tyto alba*)
- Green Treefrog (*Hyla cinerea*)
- Eastern Hellbender (*Cryptobranchus alleganiensis alleganiensis*)
- Least Tern (*Sterna antillarum*)
- Gray Bat (a.k.a. Gray Myotis) (*Myotis grisescens*)
- Coal Skink (*Eumeces anthracinus*)
- Eastern Spotted Skunk (*Spilogale putorius*)
- Eastern Ribbon Snake (*Thamnophis sauritus sauritus*)
- Northern Pine Snake (*Pituophis melanoleucus melanoleucus*)
- Pallid Sturgeon (*Scaphirhynchus albus*)
- Alligator Snapping Turtle (*Macrolemys temminckii*)

3. Each group has to research their species and create a piece of a campaign that advertises the value that this species has for its natural community and for people. Depending on the teacher's tastes, they can have the groups create a poster, a live commercial, a report, etc.

Helpful hints:

- Students can do a web search for their animal using its scientific name. Using the scientific name might help them get the most accurate information.
- Students can visit the web sites of the Kentucky State Nature Preserves Commission for more information about Kentucky's rare species: <http://www.kynaturepreserves.org> or the Tennessee Department of Environment and Conservation for more information about Tennessee's rare species: <http://www.state.tn.us> (follow links for TDEC and/or environment).

Assessment / Evaluation:

Have the students present their finished products to the class. Did they succeed in identifying valuable aspects of their species? Did they correctly identify the type of habitat where this species lives? Did they make connections to show how their species eventually relates to people?

Species Survey

1. Of the following types of animals, choose the one that you think people should try the hardest to save:

- animals that people get food or other useful products from
- animals that could not hurt humans if they came near a town
- big animals, such as bison, polar bears, and elephants
- all animals
- intelligent animals, such as monkeys and dolphins

2. Do you think it is more important to protect endangered animals or endangered plants? Why?

3. Your town is planning to build a new sports arena, but biologists have discovered that an endangered beetle lives on the proposed building site. Building the arena could wipe out this beetle and cause it to become extinct. What should your town do? Why?

4. What if, in the above situation, the building site was home to an endangered species of deer? Would you change your answer? Why or why not?

5. Pretend that you work as a biologist in charge of protecting America's endangered species. You know that the United States has many endangered species that need help, but unfortunately you only have enough money to focus on one species at a time. Read over the following list of plants and animals and number them in the order in which you would work on saving them. (#1=first priority, #10=last priority) What else would you want to know before making your final decision?

- Grizzly Bear
- Karner Blue Butterfly
- Marsh Marigold
- Peregrine Falcon
- Eastern Cougar
- American Burying Beetle
- Pygmy Rattlesnake
- Indiana Bat
- Oyster Mussel
- Alligator Snapping Turtle