

Now You See It

Following Your Visit - Activity 1

Exotic, Threatened, and Endangered Species

Part 1: Profiles of the Exotics

Activity Procedure

1. Begin this activity by asking how many students were born in Tucson. How many of their families were originally from the Tucson area? Has anyone ever heard of the term "Native Tucsonan?" Discuss what the term "native" means in this case. Point out that there are also plants and animals that are **native** to the Tucson area. When people are not "from" or born in the area they live, we say they are immigrants. When plants or animals are not naturally from an area, we say they are "introduced" or **exotic**. This activity is about the exotic plants and animals of the Sabino Canyon area.
2. During their Sabino Canyon visit, students learned about how and why animals hide. Suppose a new kind of predator were introduced into the area, one that could detect prey better than all the other hunting animals that lived there before...what might happen? Discuss the possibilities with the class. Ask students to recall some of the plants and animals seen during their field trip to Sabino Canyon. Did their guide mention any of them being exotics? Explain that some plants and animals that are now common at Sabino Canyon are really exotic species, coming from as far away as Asia and Europe.
3. How do students think exotic plants and animals got to Sabino Canyon? Might there be some problems with having exotic species of plants and animals in Sabino Canyon? Most exotics are inadvertently introduced to a new area by humans. Exotic species sometimes cause great problems for native species. Exotics are known to sometimes overcrowd the natives, or they may prey upon native species that have not developed adaptations to protect themselves against the invading foreigners, or they may out compete the natives for available food, shelter, or water. There are numerous examples where introduction of exotic species into an area caused unexpected harm to the plants and animals that naturally occur there. Four examples from Sabino Canyon will be looked at by the students.

Objectives

Students will

- discuss the difference between native and exotic species.
- read about four different exotic species of Sabino Canyon.
- write to the Forest Service for more information on exotic, threatened, and endangered plants and animals of the Sabino Canyon Area.

Lesson Information

Materials

"Profiles of the Exotics" (write-ups on the bullfrog, tamarisk, mosquitofish, and bermuda grass, provided)

Time

One class period

Subject

Language Arts, Science

Key Words

native, exotic

4. Call on four students to read the four different "Profiles of the Exotics" to the rest of the class. Instruct students to listen carefully for how the exotic species in each profile affects the native plants and animals. After each profile is read, discuss the impacts of each exotic on the native environment.
5. Explain to students that the Forest Service has taken special consideration for managing exotic species. An address is included in this unit for the students to write letters of concern and to request additional information. Encourage students to write letters to the Forest Service to get more information on exotic, endangered, and threatened species and how they, as a class, might be able to help with this problem.

Address:

**Wildlife Biologist
Coronado National Forest
Santa Catalina Ranger District
5700 North Sabino Canyon Road
Tucson, Arizona 85715**

Profiles of the Exotics

Mosquitofish

For such a tiny creature, the mosquitofish is an animal that has done perhaps the greatest damage of any exotic species introduced into Sabino Canyon. Because they are known to eat mosquito larvae, mosquitofish were imported and introduced into Sabino Creek in an effort control mosquitos. Humans thought they were doing something good but it turned out that the mosquitofish did more overall harm than good. In a matter of several years, the mosquitofish wiped out the Gila topminnow, a fish native to the creek. Mosquitofish not only eat young topminnows, they hassle the adult fish. The Gila topminnow is now an endangered species. Mosquitofish are now one of the most common fish seen in Sabino Creek.

Bermuda Grass

Bermuda grass is now common throughout the United States. In fact, most of our playgrounds here in Tucson are covered with Bermuda grass. Bermuda grass is native to Africa but now is reported to occur in over 80 countries. It is a nuisance weed to many crops such as corn and cotton. Its travel around the world was mainly accidental. The seeds and pieces of grass were transported in the cargo of vessels carrying other items. Bermuda grass is hardy -- it does well in many habitats. One of the main reasons Bermuda grass is a nuisance is due to its ability to grow and spread from cuttings of its stems and roots -- it doesn't need seeds to start new plants! Because it spreads so easily, it ends up growing everywhere, taking up space and water that native plants need to grow.

Tamarisk Tree

Now a common tree in Arizona, the tamarisk was originally brought here from Asia. Tamarisk trees do very well in the desert because they can survive hot, dry conditions. Because they grow so well here, tamarisks will take over an area, "out-competing" the native plants. In a way, they steal the water from the plants the normally live here. Tamarisks are also called "salt cedars" because of their ability to take up salt and store it in their needle-like leaves. When their salty leaves drop on the ground, other plants have difficulty growing under and around these trees. Tamarisks can be found growing in large stands in riparian areas, taking up space and water that would otherwise be available to natives.

Bullfrog

While the bullfrog is found throughout the United States, it is not native to Arizona. It was introduced mainly as a game species because some people like to hunt them for their meaty legs. However, bullfrogs have spread throughout the state and have "wreaked havoc" in some areas. Bullfrogs are ravenous creatures. They eat a variety of prey animals including insects, turtles, snakes, small mammals, fish, and even other frogs! When introduced into an area, they can put quite a dent in the native population of animals. Bullfrogs can be found in Sabino Canyon where they eat mosquitofish, canyon treefrogs, and numerous other native species. The Forest Service would like to get rid of the bullfrogs in Sabino Creek.

Now You See It

Following Your Visit - Activity 2

Exotic, Threatened, and Endangered Species

Part 2: Management Reports

Activity Procedure

1. Divide the class into several small groups. Assign each group an animal or plant from your list of exotic, native, and threatened species of the Sabino Canyon area. Have each group work together to prepare a small "Management Report" for their species. Write the following questions on the board for the students to copy and use as a guideline in writing their reports.

Is this species native to Sabino Canyon or introduced (exotic).

Describe this species' native habitat.

What does the species need to survive?

What other animals or plants does the species interact with?

Is this animal or plant considered generally harmful or beneficial to the environment?

What caused this species to become exotic, threatened, or endangered?

What is currently being done to manage this species?

What can I do to help?

What do you think would be the best way for the Forest Service to manage this species?

Students are encouraged to use the library and the materials received from the Forest Service in Part 1 of this activity.

2. Have each group give a presentation of their species' Management Report to the class. Students could also present reports to other classes and/or parents. Discuss the possibilities of sending these management reports to Sabino Canyon for Forest Service officials to consider. Place all letters and reports from this activity and the previous one in your Sabino Canyon Big Book.