



Tour Theme: Animals (grades 9-12)

Post-Visit Activity #2: Happy Fishing

Objectives:

- Collect, organize, write and interpret scientific data.
- Work in cooperative groups to complete the assigned tasks.
- Understand the importance of population monitoring and control.
- Examine species dependence on humans for their survival.
- Develop an understanding and gain knowledge of how much time organisms need to reproduce in an ecosystem.

Overview:

The purpose of this simulation is to demonstrate how individuals using a common resource (the commons) for their own personal gain will inevitably result in the degradation of the commons, and a decrease the yield for both the group and the individual. In Nevada, people fish in Lake Mead, Lake Tahoe and in many rivers and streams throughout the state. If fishing is not monitored this could result in severe population declines, affecting the other organisms who depend on the fish for survival. Over-hunting is another way in which species of animals can decline. This activity will demonstrate the importance of population monitoring.

Materials:

1–“fish pole” (2 straws taped together)

1–“lake” with 20 “striped bass or other species of fish from Nevada” (bowl of M&Ms)

Procedures:

Your group will get a lake full of fish, each group member will get a fishing pole, and the entire group will fish for several years. Between fishing seasons the fish will reproduce until they reach the carrying capacity of the lake. A bonus will be given to the member of each group who catches the most fish.

- To “fish” you must use the fishing pole to “suck” the fish out of the lake.
- The “lake” has a carrying capacity of 20–so there will never be more than 20 fish in the lake.

- Fish one “season” at a time, which represents one generation of fish. Each student may catch as many as he/she wants. They need at least one fish or they will starve.
- After the first fishing season (60 seconds), stop fishing, and the fish will “reproduce.” For every fish left in the bowl, another will be added, up to the carrying capacity of 20.
- Record the number of fish caught during each season by each individual and by the group.
- Fish for another season. Stop and let the fish reproduce.
- Repeat.

Postlab:

1. Write a comparison, in which you relate this activity to the relationships between human societies and the environment, and discuss possible methods to remediate overuse through cooperation.
2. The debate of over-fishing and over-hunting occurs around the world. Find an article on the internet where this has happened in the last year. In a paragraph, summarize both points of view—the point of view of the fishermen or hunters and that of the environmentalist. With whom do you agree?