

### Activity 3 - Fill in the Blank (6th -12th grades)

#### **Water Quality**

Central Arizona Project delivers raw, untreated water to its customers. Although it does not own or operate any treatment plants, CAP developed a water quality testing program as a service to the cities and utilities who treat the water and the thousands of people who drink it. Results from CAP's weekly, monthly, and quarterly water quality tests not only help CAP's customers adjust their water treatment systems, the results are used to protect the quality of the water used for recharge so it can be safely retrieved for the future.

Like most river water, CAP water displays characteristics of hard water and can cause spots on dishes or scale to form on showerheads and appliances like coffee makers. High levels of calcium and magnesium contribute to water's "hardness." Hard water can be beneficial because high levels of calcium often create a natural protective coating on pipes, preventing lead and copper from entering the water supply. A lot of scientific information also indicates that high levels of hardness contribute to the development of stronger bone structure and low incidence of heart disease.

CAP invests a lot of time and money to minimize manmade pollutants in the water. This is good for water quality as well as for the environment. To clean grass out of the recharge basins, goats are used to eat grass and weeds which would otherwise impede flow of water into the ground. In some places, vegetable oil is used instead of petroleum based oil to lubricate machinery which comes into direct contact with water.

Many times, instead of chemicals, CAP stocks the aqueduct with algae eating fish rather than using chemicals to clean the canal. CAP has a license to stock \$100,000 worth of white amurs or "grass carp" in the canal. CAP has also stocked red eared sunfish to eat clams and mussels.

#### **Ecology**

Damming rivers and taking water out of rivers for agriculture and cities does cause environmental change. Central Arizona Project has tried to do whatever it can to lessen the impact of the system on the environment. For instance, before CAP was constructed many archaeological and biological studies were conducted to identify animal migration patterns. Bridges were built in the places identified so deer, kit foxes and desert tortoises can get across.

Six-foot high fences also have been built along the canal to keep people and large animals safe from drowning. Wildlife watering sites were also built away from the canal. Construction near bald eagle nests was scheduled to avoid nesting season. Cacti and other native plants were saved and moved from construction sites to create wildlife habitat in other places in the desert.

Many species of fish are also supported by CAP's system. The Lake Pleasant Striped Bass Project found carp, threadfin shad, channel catfish, largemouth bass, white bass, striped bass, and crappie. One way fish are tracked on an ongoing basis is by implanted sonic tags. As recently as 2006 10 implanted striped bass were monitored on a bi-weekly basis.

## Activity 3 - Fill in the Blank (6th -12th grades)

Use each sentence to help you fill in the blank with the correct answer. The number of dashes represents the number of letters in each answer.

1. Many times, rather than using \_\_\_\_\_, CAP stocks the aqueduct with algae eating fish.
2. Six-foot high \_\_\_\_\_ have been built along the canal to keep people and large animals safe from drowning.
3. Like most river water, CAP water displays characteristics of \_\_\_\_\_.
4. \_\_\_\_\_ were built in animal migration areas.
5. CAP has a license to stock \$100,000 worth of white amurs or “\_\_\_\_\_” in the canal.
6. Although it does not own or operate any \_\_\_\_\_ plants, CAP developed a water quality testing program.
7. CAP uses \_\_\_\_\_ to clean grass out of the recharge basins.
8. Before CAP was constructed many archaeological and biological \_\_\_\_\_ were conducted to identify animal migration areas.
9. CAP has also stocked red eared sunfish to eat clams and \_\_\_\_\_.
10. Water quality test results are used to protect the quality of the water used for \_\_\_\_\_ so it can be safely retrieved for the future.
11. Fish in Lake Pleasant are tracked on an ongoing basis by implanted \_\_\_\_\_ tags.
12. Cacti and other native plants were saved and moved from CAP construction sites to create \_\_\_\_\_ habitat in other places in the desert.
13. The Lake Pleasant Striped \_\_\_\_\_ Project found carp, threadfin shad, channel catfish, largemouth bass, white bass, striped bass, and crappie.
14. CAP invests a lot of time and money to minimize manmade \_\_\_\_\_ in the water.