



Wild Kids

Water for Wildlife

STUDENT GUIDE

Just like you, wildlife needs water to survive. Water is necessary to digest food, to rid the body of wastes, to maintain a healthy body temperature, and for mother animals to provide milk for their young. In fact, the bodies of most animals, including humans, are mostly made up of water. (An adult deer's body is about 65% water.) Since water is so important to wildlife, what happens to animals during times of drought?

What is drought?

Drought is an abnormally long dry period. Desert are normally dry. However, if there is no rain for an unusually long period of time, it is considered a drought.

How does drought affect wildlife?

During times of drought, animals must work extra hard to find water. Some animals get water from the food they eat, so they simply eat more. For example, the round-tailed ground squirrel eats more ironwood tree leaves during drought periods. But droughts also mean less water for plants, so the squirrel must travel farther to find food and is more likely to be seen by predators, who are also eating more prey during the drought.

Animals that need to drink water frequently, or those that rely on free-standing water, like lakes and streams, have the most difficult time during a drought. They must travel longer distances to find water. During those travels, they lose more water through perspiration (sweating) and respiration (breathing). They are also more susceptible to predation.

What can be done about drought?

Drought can be hard on wildlife; some animals may not survive. But, since drought is a natural event, we have to find ways to work with nature. One way the Arizona Game and Fish Department helps wildlife during times of drought is by providing places where animals can find water. These places are called "water catchments."

Water catchments are designed to catch rainwater. This water flows into a large storage tank. This water is directed into a drinking trough, making it available to thirsty wildlife.

In some years, there is little, if any, rain to catch. During these dry periods, the Arizona Game and Fish Department hauls water to some of the catchments. Water is hauled in 1,500 gallon water trucks or in 400 gallon trailers called "water buffaloes." For remote areas, a helicopter is even used.

There are about 1,000 water catchments located throughout Arizona. They provide water for a diversity of wildlife species, including birds, mammals, reptiles, amphibians and insects during challenging drought conditions.

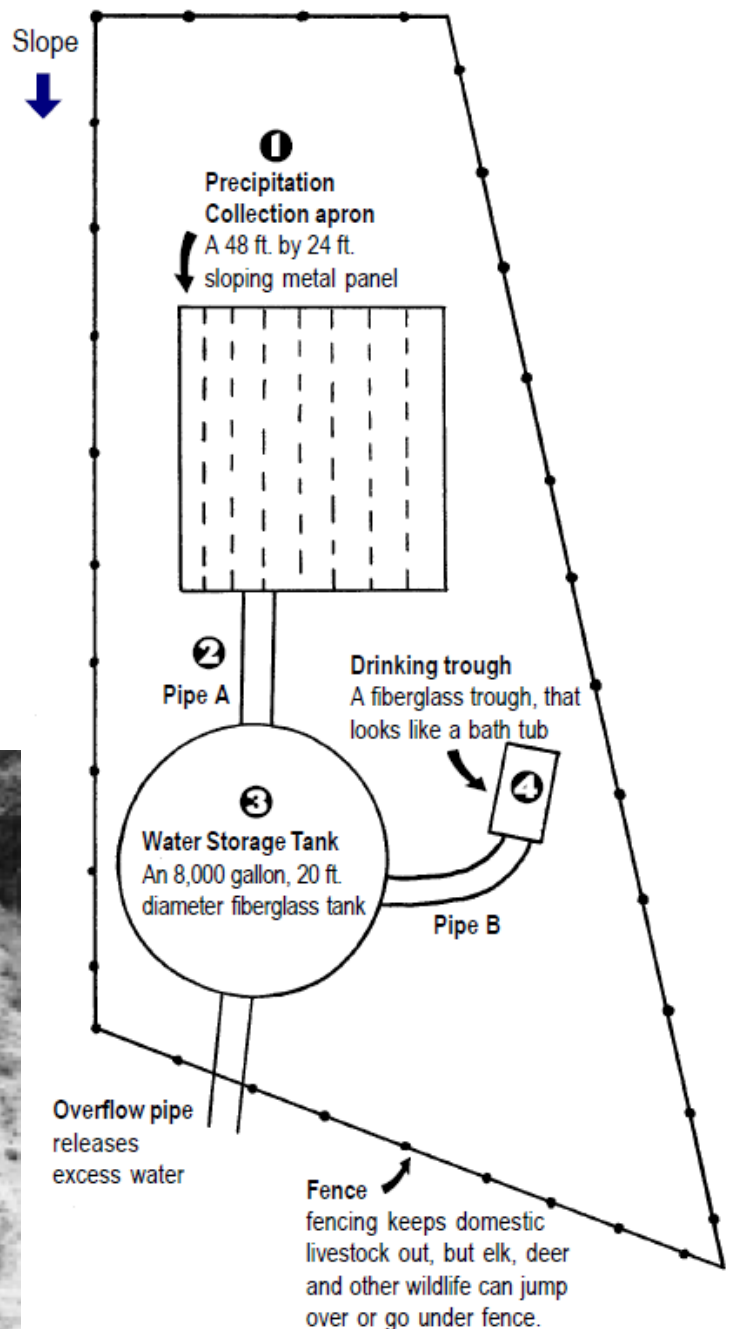


HOW A WATER CATCHMENT WORKS

1. Rainwater falls onto the precipitation collection apron and flows into pipe A.
2. The water flows from pipe A into a storage tank.
3. Water is stored in the tank until needed.
4. Water flows through pipe B and into the drinking trough.

REAL VIEW OF A WATER CATCHMENT

In the photo below, can you identify the precipitation collection apron, the storage tank, the drinking trough and the fence? Label them.



CATCHMENT MATH

1. How many trips would it take for a “water buffalo” to completely fill the water storage tank? How many trips would it take for a water truck to fill the water storage tank to 75% full?
2. If a deer drinks 1 gallon of water each day, how many gallons of water would a herd of 5 deer drink during the summer (June, July, and August)?



Wild Kids

Water for Wildlife

TEACHING GUIDE

Overview

In this activity, students will read an article about drought and specific actions taken by wildlife managers to provide water for wildlife. Then, they will analyze the design of a water catchment and answer some questions before creating their own models of water catchments.

Suggested Procedures

1. Print the worksheet above. If possible, print it double sided.
2. Have the students read both pages of the article and answer all of the questions. This should include labeling the photo of the water catchment.
3. Discuss the student responses and ask them this additional question:
 - What are the pros and cons of building water catchment to provide additional water for wildlife? In your opinion, is this a good management action? Why or why not?
4. Provide students with paper, pieces of cardboard and other common craft materials. Ask the students to build their own water catchments. At a minimum, they should be a model of the one depicted in the worksheet. However, for more advanced learning, you could have the students attempt to design new catchments. Then, take them outdoors and test them by pouring small amounts of water on them. You can see which designs are able to capture, store and provide the most amount of water.
5. Have the students reflect on the activity and their construction.

Grade

6th

AZ Science Standards

- 6.L2U3.11

Science and Engineering Practices

- Develop and use models

Crosscutting Concepts

- Energy and Matter
- Systems and System Models