



# Conserving Water in the Desert

## Lesson 9: Science for Utah Citizens

### Enduring Understanding

Citizens of a community can collect vital data and provide support for scientific studies that contribute to decision-making, ultimately affecting the quality of life of people in the community.

### Essential Question

As a citizen of Utah, what can I do to effect positive changes towards the goal of sustainable use of my community's water resources?

### Background Information

#### Water Quality:

It is critical for our water to be safe for human consumption. Some of the substances in water impacting our health are bacteria, heavy metals, nitrates, and carcinogenic compounds. There are many ways for us to monitor the quality of our water, including simply reading the annual reports distributed by individual Water Conservancy Districts in your municipality. We can take a more active role by helping some of the citizen water quality monitoring groups monitor the health of our water sources.

#### Maintaining Riparian Corridors:

Much like the wetlands, plants along riparian corridors provide soil stability to prevent erosion and are important habitat for various organisms in an ecosystem.

In addition, the root systems of plants along the corridors allow precipitation to percolate underground instead of running off. This recharges the groundwater aquifers and filtrates the pollutants out of the water.

Humans naturally populate the areas near water sources sometimes to the detriment of the riparian corridors. We need to restore as much of the ecological habitat as we can to these areas that have been compromised as much as possible in order to restore soil stability and allow for water percolation and into the groundwater where filtration can take place.

## **Lesson Plan**

### **Materials**

(Provided by Utah State University / Utah Water Watch)

### **Warm-up**

By reviewing Lessons 3-8, have students discuss the importance of water conservation and explore the various options available to them in conservation efforts. Water quality monitoring is an enormous task, but with the help of all Utah's citizens, we can keep our water safe for consumption.

## **Activity #1: Water Quality Monitoring**

You can contact Utah Water Watch (UWW), an extension of Utah State University, directly to be trained as a monitor for water quality in your area. Once you and your colleagues have been trained, you can take your students on field experiences to monitor the quality of the water in your area of the state:

<http://extension.usu.edu/utahwaterwatch/>

Tests performed:

- pH
- e. Coli
- Water Flow
- Color
- Algae
- Clarity
- Dissolved Oxygen
- Turbidity/Temperature

## Extensions

### **#1: Red Butte Garden Field Experience**

In this field experience, students will be guided through the Water Conservation Garden to learn about the different water-saving methods used to conserve water. They will explore the water catchments and rainwater harvesting and the placement of plants by water needs.

Lastly, they will visit Red Butte Creek and perform a Citizen Science water quality monitoring activity.

### **#2: Partnership with Tree Utah**

In partnership with TreeUtah, Red Butte Garden will help to facilitate a school's efforts to plant trees in various areas, especially on your school grounds and along riparian corridors.

There is a TreeUtah School Tree Planting Grant and Grant Application in the Appendices to help schools interested in purchasing and planting trees for their school grounds. You can also access this form online.

For more details on ecological restoration contact TreeUtah directly at their website: [www.treeutah.org](http://www.treeutah.org)