

# Lesson 10

## Who Owns the Water?

### Overview

In previous lessons students have received an overview of the Columbia River and how it is recharged with the water cycle mainly via the watershed. They have also been introduced to some of the major stakeholders in the use of the Columbia River water. In Lesson 10 students will learn that water is not owned by individuals or groups but over time and through laws there is a hierarchy in the rights to use water. Through the water rights activity and discussion students will learn that use of water may not appear to be fairly distributed and that drought in years of low snowpack can cause conflict and affect quality of life.

### Student Learning Targets

I can defend the importance of water rights for different Columbia River stakeholders

I can predict what can happen to Columbia River stakeholders when water is scarce.

I can explain what happens to Columbia River stakeholders when water is abundant.

### Teacher Background Information

“Historically, Washington residents have enjoyed an abundance of clean, inexpensive water, in a water-rich state. But water availability can no longer be taken for granted. Washington increasingly lacks water where and when it is needed for communities and the environment.

Many factors impact water availability. Shrinking snow packs, increasing drought years, population growth and development all combine dramatically to reduce water availability. Our rivers and snow packs are weather dependent. And economic expansion contributes to an increase in paved surfaces, which allows less water to be absorbed through the ground.

We have inadequate stream flows. Education on these vital issues is a statewide priority.

In Washington State, the availability determines our quality

#### Disciplinary Core Ideas

Environmental and Sustainability  
ESE 1: Ecological, Social, and  
Economic Systems

#### Science

Systems 4-5 SYSD Predict what  
might happen to a system if a part  
in one or more of its subsystems is  
missing, broken, worn out....

#### Social Studies

Economics 2.2.4 Understands how  
geography, natural resources,  
climate....contribute to the  
sustainability of the economy of  
regions in Washington State.

#### Scientific and Engineering

##### Practices

Engaging in argument from  
evidence

##### Crosscutting Concepts

Cause and effect: Mechanism and  
explanation

of life and the success of our farms, businesses and industries—and our competitive position in the global economy.

### Academic Vocabulary

**Water rights:** Priority claims to water.

**Drought:** periods of less than average or normal precipitation over a long enough time to cause economic loss (affecting man) and/or a biological loss impacting plants and animal.

**Snowpack:** he amount of snow that accumulates annually in a mountainous area.

“Under state law, the waters of Washington collectively belong to the public and cannot be owned by any one individual or group. Instead, Ecology may grant individuals or groups the right to use them.

A water right is a legal authorization to use a certain amount of public water for a designated purpose. The water must be put to ‘beneficial use,’ which refer to a reasonable quantity of water applied to the non-wasteful use, such as irrigation, domestic water supply, industry and power generation, to name a few.

Since much of the water in Washington has already been allocated or claimed, new water rights are increasingly difficult to obtain.

***A water right does not guarantee the availability of water. The degree of reliability depends on your seniority as a water right holder.***

Any new water right is subject to existing water rights. Therefore your application may be denied, or your water use may be regulated or modified, if it adversely affects existing rights.”

Information excerpted from Washington State Department of Ecology web site.

<http://www.ecy.wa.gov/programs/wr/rights/water-right-home.html>

Maps of Snowpack

[http://www.wcc.nrcs.usda.gov/cgibin/colusnow.pl?state=columbia\\_river](http://www.wcc.nrcs.usda.gov/cgibin/colusnow.pl?state=columbia_river)

## Materials

10 10oz plastic cups

Masking Tape

2 Pitchers one filled with at least 28 oz. of water, one with 15 oz.

Water Rights User Description Strips (Printable)

Science Notebooks

Chart Paper and Pens

## Preparation:

Fill pitchers with water

Place a 10'-15' strip of tape on floor

Write Water Rights User Description on paper strips

Salmon Recovery - 3 oz. **pour 2 oz. back in pitcher**  
Dairy Farmer - 3 oz.  
Mine -2 oz.  
Small property owner – 1 oz.  
Ranch - 2 oz.  
Electrical Company – 3 oz. **pour 2 oz. back in pitcher**  
Orchardist – 3 oz.  
Manufacturer – 3 oz.  
Aluminum Plant – 4 oz.  
New Housing Development – 1 oz.  
Factory – 2 oz.  
Technology Industry 1 – oz.

Prepare 8 strips of paper numbered 1-8 (or the same number of as you have Water Rights Users students in class) \* **If you need more water users have your students do some brain storming based on what they know about stakeholders.**

Mark cups in approximately 2 oz. increments with permanent marker

### **Procedure:**

1. Opening activity. Select 8 students or more students to come up and stand along the masking tape. The tape represents a river.
2. Each student will select a strip of paper from a hat or bowl with Water Rights User Description. This will tell them who they will represent and the amount of their water right.
3. Refill the hat with numbers and have each student draw a number that will indicate their water rights seniority.

*100% or more snowpack and run-off year (use 28oz of water)*

4. The river is flowing enough to provide all users with enough water to fulfill their requirements.

5. Ask the student with #1 to read their information, then pour the designated amount of water into his/her cup.

Continue the procedure until all participants have received their water in order of their user rights number. (exact amounts don't matter as long as all students receive water).

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regions in Washington State.

### **Scientific and Engineering**

#### **Practices**

Engaging in argument from  
evidence

#### **Crosscutting Concepts**

Cause and effect: Mechanism and  
explanation

## *Drought year*

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6. Repeat steps 1-5 with new students but use pitcher with 15 oz. of water. This time a drought year is represented. Continue procedure until all water is gone making sure that not every water user receives water.

7. Discussion: Make a class list of those users who did not receive water during the drought year.

8. Short discussion questions. Was there enough water for everyone? Why did Salmon Recovery and the Electric companies pour water back into the pitcher? (They only use part of the water and the water continues to flow and is available to other water users.)

9. Ask students to recall previous lessons where they learned about the watershed and some of the stakeholders in the Columbia River water. Tell them that water in Washington State is used on the “first in time, first in right,” basis. This means that the first ones to claim the water get the first chance to use it even if it means that later water users do not have enough to meet their needs. The right to use water is referred to as a water right. Water rights are regulated by state and federal governments.

## Final Activity

1. Have students work in pairs on the questions. Cycle through room to evaluate and ask additional questions to stimulate thinking. After a few minutes join pairs together to form groups of four to share their thoughts. **Assign groups to represent one of the stakeholders** to explain to the class why they need water and what might happen if they didn't get enough. Then bring class back together.
2. Have groups present their point of view and why they should get all the water they need even if water is scarce.
3. Lead concluding discussion about their answers bringing up effects that they may not have thought about such as job loss, limited amounts of manufactured goods or food, etc. What might happen if they took water away from salmon recovery or dams?
4. Conclusion: Our water resource is precious and amounts are limited. There are many stakeholders depending on the water in the Columbia River Watershed area.

### Extensions:

Have students make posters showing their stakeholder and the impact to them of not having enough water.

### Resources:

*Adapted from: Terrain for Schools Guide: Who Owns Water?*

<http://www.ecologycenter.org/tfs/lesson.php?id=13475>

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