



wildsight

TEACH THE COLUMBIA

An Introduction to the Columbia River Watershed

Lesson 1-1

Guiding questions

What is a watershed? What is the Columbia River watershed and where do we fit into it? What diversity of landscapes, ecosystems, communities, and climates are present in different parts of the Columbia River Basin?

Learning goals

Students will:

- Understand the basic definition of a “watershed” focusing on the physical geography (Lesson 1-2 digs into some of the more complex environmental, economic, social, and cultural aspects of “watershed”).
- Understand and describe the geographical context of the Columbia River (headwaters, mouth, direction of flow, tributaries, transboundary nature, size of watershed, different landscapes, ecosystems, and climates, etc.). Understand how water from all the different points in the watershed flows together to enter the ocean at the same point.
- Develop a sense of place as inhabitants of the Columbia River watershed by considering where they live within the larger area.
- Get a sense of the human geography of the river including major communities, dams, and other points of interest.

Materials

- [Introductory video](#) (Vimeo link)
- [River Runner orientation video](#) (Vimeo link)
- [River Runner website](#)
- [Basic Columbia River Basin map](#)
- Whiteboard/Large writing surface

Preparation

1. Load three web pages: the introductory video, the River Runner website, and the basic Columbia River Basin map and/or Google Earth with

watershed outline

2. Familiarize yourself with the River Runner website and three suggested river run challenges for your students
3. Split the class into pairs or small groups

Instructions

Total time: Approximately 50-70 minutes

1. Play the introductory video (15 minutes), ask students if they have any questions, observations, or reflections. Review the basic definition of a watershed as given in the video and the appendix (note that lesson 1-2 will progress into more complex definitions).
2. Watch the River Runner orientation video (3 minutes); note that the image quality will likely be higher on your computer than in the recording. Then, explain three river run challenges using the [River Runner website](#): *First, run to the ocean from your school or home. Then, do at least two more runs starting from places in the watershed you've never been to or maybe never even heard of. Consult a map of the Columbia River Basin to make sure chosen starting places are still within the watershed.* Review the features of the website if students need a refreshed from the introductory video.

As students do their runs, ask them to answer following questions:

- A. What features or areas of the watershed stood out to you the most?
- B. Did any of the things you saw surprise you?
- C. What area looked the most different from the place you live?

20 - 30 minutes total. At fastest (zoomed out), a run to the ocean is about 1.5 minutes. At slowest (zoomed in), it is about 5 minutes.

3. Debrief as a class. Ask student pairs/groups to share about at least one of their runs.

Bonus questions to answer in groups or as a whole class:

- A. What does it mean to say the Upper Columbia area of the watershed in Canada is the “water tower” of the Basin?
- B. How many dams are there along the main stem of the Columbia River?
- C. What is a “tributary”? What are some of the tributaries that flow into the Columbia River? Do any of the tributaries have dams on them?

Extensions

- [Watch videos](#) made from Wildsight for the “Know Your Watershed” curriculum about the definition of a watershed and the Columbia River Basin geography
- Use Google maps satellite or Google Earth to explore your local community and examine your watershed features and geography
- As a more simple alternative to the River Runner website, Wildsight has a [Columbia River Flyover video](#) that follows the main stem of the river from source to sea over 5 minutes with no interactive component

Curriculum links

[Science 9](#)

[Social studies 10](#)

[Social studies 11](#)

[Earth Science 11](#)

[Environmental Science 11](#)

[Human Geography 12](#)

[Physical Geography 12](#)

Appendix

1. [Basic Columbia River Basin map](#)

2. Watershed definitions (note that this lesson is intended to be more basic with lesson 1-2 getting into more complex detail; so feel free to stay focused on just the basic definition here):

- Basic: An area of land in which all rain, melted snow and ice and small tributaries drain into a common body of water like a creek, river, lake or ocean.
- More detailed: While primarily describing the geologic/geographic drainage patterns of water, a more holistic view incorporates all the biotic and abiotic communities and processes contained in the drainage basin; therefore a watershed may

be referred to as the sum of the area, drainage patterns and environment of a given waterway or waterway segment.

- More complex: “A basin, drainage, a watershed: all mean an area of land drained by a river and its tributaries to a common outlet, which may be a closed basin, a larger stream, a lake, a wetland, an estuary, or an ocean. A watershed includes all of the land, air, plants and animals within its boundaries. It includes mountains and deserts, cities and farms. It includes people, stories and traditions. Although a watershed’s boundaries are carved by nature and not by social or political forces, a watershed’s scope requires people with different perspectives, needs, and lifestyles to work together because of their common connection to the river and its life-giving water.”
- Discover a Watershed: Watershed Manager - Project WET Foundation
- From the Indigenous Watersheds Initiative: “Watersheds hold profound significance for First Nations communities as they are integral to their cultural, spiritual, and physical well-being. These vital ecosystems, encompassing rivers, lakes, wetlands, and surrounding lands, play a pivotal role in sustaining traditional ways of life for many Indigenous peoples. Watersheds serve as sources of nourishment, providing fish, plants, and other resources crucial to traditional diets. Additionally, these environments often hold sacred value, connecting First Nations to their ancestors and spiritual practices. As caretakers of land and water, First Nations recognize the delicate balance within watersheds and the necessity of preserving them for future generations. The well-being of these ecosystems directly influences the overall health and resilience of the community, making the conservation and sustainable management of watersheds not merely an environmental and economic concern but also a fundamental aspect of cultural preservation for First Nations. The definition of watershed reflects that the water and the land are connected. First Nations people have always known this, and this is upheld by the worldview that water is life and that everything is connected.”