

Clackamas360: Watershed Tour

Lesson 1: The Clackamas River Basin

Overall goals: Orient local high school students to the Clackamas River watershed with special focus on acknowledging the Clackamas People and the students' roles in safeguarding their natural heritage. This Virtual Field Trip takes students to the top of the watershed to learn about the foundational forces of Geology, Ecology, and Hydrology, and challenges them to think critically about the natural resources they receive from the watershed. At each location and with each theme this tour challenges students to think about their relationships to the watershed and what they can give back.

Slide 1: Welcome to the Clackamas360 Virtual Watershed Tour

Location: Willamette Falls/Hyas Tyee Tumwata

<https://clackamas360.glitch.me/>

Key Theme:

- Orientation

Engagement:

- Introduce yourself
- Introduce CRBC
- Introduce Watershed Health Education Program
- Introduce Clackamas WES/LCEP
- Introduce design/functionality/construction of Clackamas360 Virtual Watershed Tour
 - Introduce scene: Willamette Falls
 - Scavenger hunt to get used to navigating
 - Bridge Name?
 - Mt. Hood height
 - Population of city
 - Industrial buildings
 - This is an appetizer to natural heritage

Slide 2: Land of the Clackamas

Location: Willamette Falls/Hyas Tyee Tumwata

<https://clackamas360.glitch.me/1LandoftheClackamas.html>

Key Themes:

- The Clackamas People and their culture, ways of living and spirituality
- History of colonization, implications of justice and responsibility for land stewardship

Engagement:

- Does anyone know how the Clackamas got its name?
- Willamette Falls as a village site, continuous human inhabitation

- Key lamprey fishing site
- Yurok tribe member Jonny Boy on natural heritage: “Everyone is indigenous to somewhere.”
 - This is your natural heritage, we have the responsibility to care for the land

Oregon Environmental Literacy Standards: WHST.2: Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes

Go Beyond: Same place, different times: How would your life be different if you lived in the Clackamas River Basin in different times throughout history? What would you do every day if you lived here in the year:

- 1800 (life as a teenager of the Clackamas people)
- 1900 (growing up during the European settling of the region)
- 2021 (what do you do today and how does it relate to the watershed?)
- 2100 (how will life change for kids growing up at the end of the century?)

How would your relationship to the Clackamas River change throughout these different times? What knowledge and skills would you be learning to prepare you for life in the Clackamas River Basin? Make a schedule of what your daily tasks would be for each of these time periods and then write a paragraph about each time period comparing and contrasting what your life would be like in each time period.

Slide 3: Geology

Location: Timothy Lake Springs

Key Themes:

- Geologic foundation of the CRB
- Geologic processes
- Plate tectonics
- Volcanism
- Erosion
- Glaciation and environmental epochs

Engagement:

- Who can explain plate tectonics?
- Coast range vs. Cascades range and differences?
- What are our Volcanoes and how active are they?
- Locations to visit

Oregon Environmental Literacy Standards: HS.23. Analyze the distribution and characteristics of human settlement patterns.

Go Beyond: Compare geology maps with human settlements - are there patterns? How does geology influence where people live?

Slide 4: Ecoregions

Location: Mt. Hood National Forest

<https://clackamas360.glitch.me/3ClackamasEcoregions.html>

Key Themes:

- Pacific NW ecosystems and endemism
- Habitat varieties within CRB
- Geomorphology and role influencing ecology
- Threatened and Endangered species and Limiting Factors

Engagement:

- Why do we have some of the largest trees in the world in our forests here in the PNW?
- Favorite species, favorite environments
- Human population distribution as associated with habitat types

Oregon Environmental Literacy Standards: HS-LS2-6. Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.

Go Beyond:

- Go to the Oregon Conservation Strategy website and read about the West Cascades and Willamette Valley Ecoregions:
- <https://www.oregonconservationstrategy.org/ecoregions/>.
- Read about each ecoregion's conservation issues and priorities, then select a Limiting Factor that interests you. What do you think would be a solution to address this Limiting Factor? Write how you would approach the Limiting Factor, including who you think is responsible to address the issue, who you would engage as a partner, and how you would go about resolving the problem.

Slide 5: Clackamas Subwatersheds

Location: Hidden Falls Nature Park

<https://clackamas360.glitch.me/4ClackamasSubwatersheds.html>

Key Themes:

- Bioregionalism
- Watershed stewardship at subwatershed level
- Pesticide monitoring
- Visiting nature in your backyard

Engagement:

- Does anyone know where this is?
- Which creek is this?
- Which watershed do you live in?

Oregon Environmental Literacy Standards: EL Strand 2 Where does your water come from?

Go Beyond: How's My Waterway?

- Enter your address into the Environmental Protection Agency's "How's My Waterway" website: <https://mywaterway.epa.gov/>
- What watershed(s) are you in? Have you ever visited the creek or river that the EPA lists you live within? What is the Condition of your Waterbody? What aspects are "Good," which are "Impaired," and how does it say you can help improve the situation?

Slide 6: The Clackamas Provides

Location: Riverside Park

<https://clackamas360.glitch.me/5ClackamasWaterProvides.html>

Key Themes:

- Ecosystem Services
- CRB role in Economic Development
- Habitat Types and Economics
- One of largest Christmas Tree Farm producers in the US
- Food, farmers' markets, sustainability
- Recreation and Nonconsumptive Uses

Engagement:

- What resources do you get from the watershed?

Oregon Environmental Literacy Standards: EL Strand 4 Do a personal reflection of the value of natural resources and how that may affect your consumer choices.

Go Beyond: What resources do you get from the Clackamas River Basin?

- Make a list of the types of resources you get from your watershed. Include physical things like timber products and farmed food, but also think about intangibles like electricity and recreation.
- Do you get most of what you need to survive from your watershed? What do you need from other places? Considering the population of Clackamas County is projected to increase % by 2032, how does that make you feel about the availability of resources in the Clackamas Basin? What can you do to be more sustainable?

Slide 7: Clackamas Water Journeys

Location: Clackamette Park

<https://clackamas360.glitch.me/6ClackamasJourneys.html>

Key Themes:

- Water conservation
- Interconnectedness of humans and nature
- Water provisioning and Sustainability

Engagement:

- What's your relationship with your water?

Oregon Environmental Literacy Standards: HS.20. Analyze the impact on physical and human systems of resource development, use, and management, and evaluate the issues of sustainability.

Go Beyond: Go to the Clackamas River Water Providers Indoor Water Conservation Art

Project: <https://www.clackamasproviders.org/indoor-water-conservation-tips/>

- a. Create signs to put up around your house to remind yourself and your family of water conservation tips.
- b. How do the actions of people upstream of you affect you? How do your actions affect those downstream of you?