



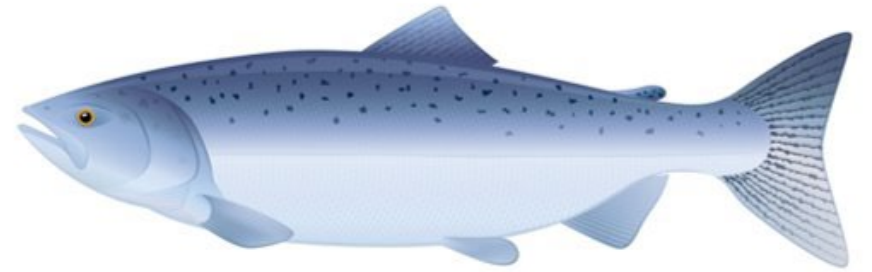
GRADE 5

Salmon Habitat Restoration



Salmon essential facts

- Ray-finned fish native to tributaries of the North Atlantic and Pacific Oceans
- Related to trout, char, grayling, and whitefish
- Are usually (but not always) anadromous: they hatch in fresh water, migrate to the ocean, then return to fresh water to reproduce
- Are keystone species—plants or animals that are critical to the survival of other species



Salmon in Oregon



Chinook/king salmon



Chum/dog salmon



Coho/silver salmon



Dan'-dee-ni



Dan'-xvt luu-k'e



Pink/humpback salmon



Sockeye/red salmon

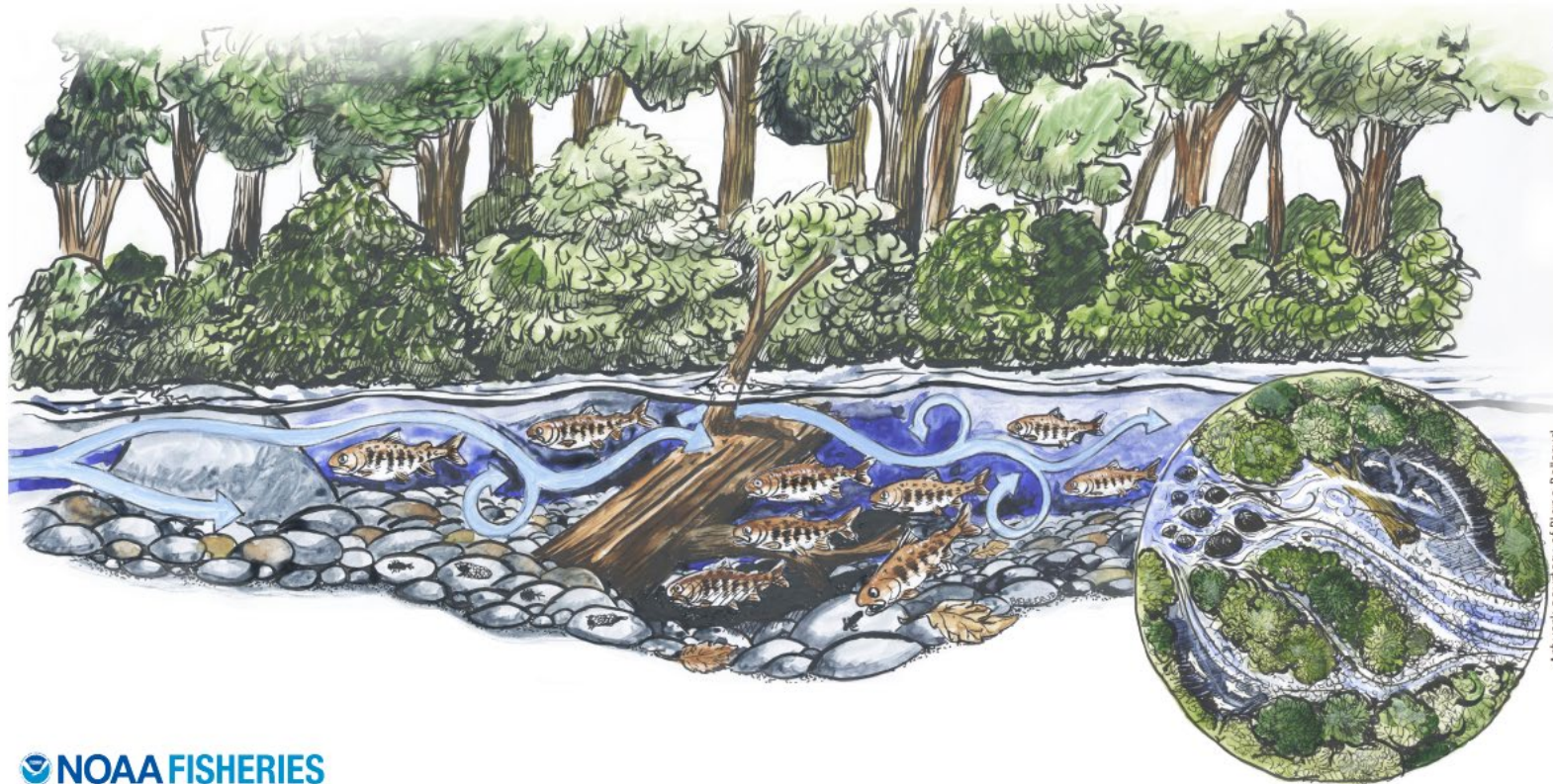
Image source: Oregon Department of Fish & Wildlife

Salmon life cycle



Image and video source: National Marine Sanctuary Foundation and Pacific Northwest College of Art Animated Arts (via YouTube)

Healthy salmon habitat



 **NOAA FISHERIES**
westcoast.fisheries.noaa.gov

Image source: National Oceanic and Atmospheric Administration Fisheries

Unhealthy salmon habitat

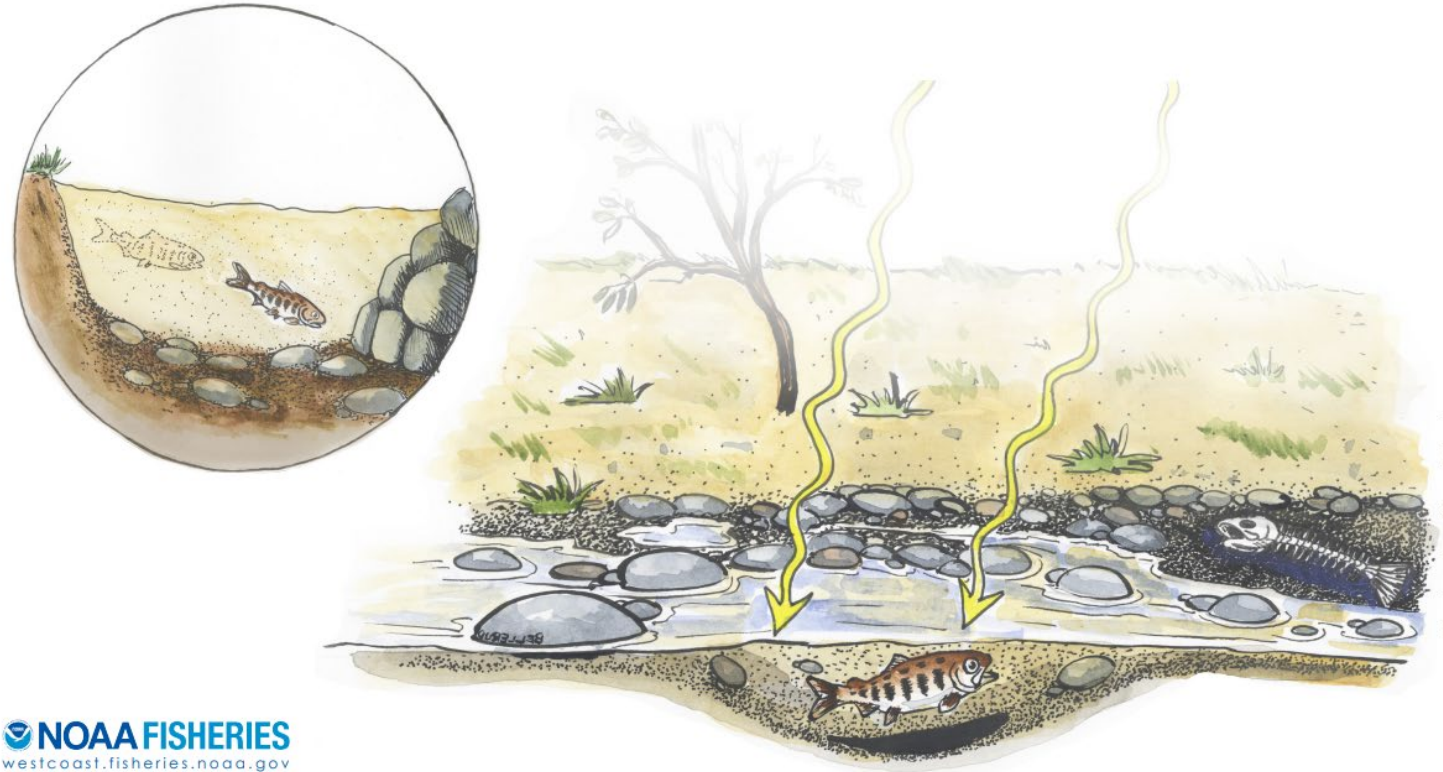


Image source: National Oceanic and Atmospheric Administration Fisheries

Salmon and humans (Part 1)

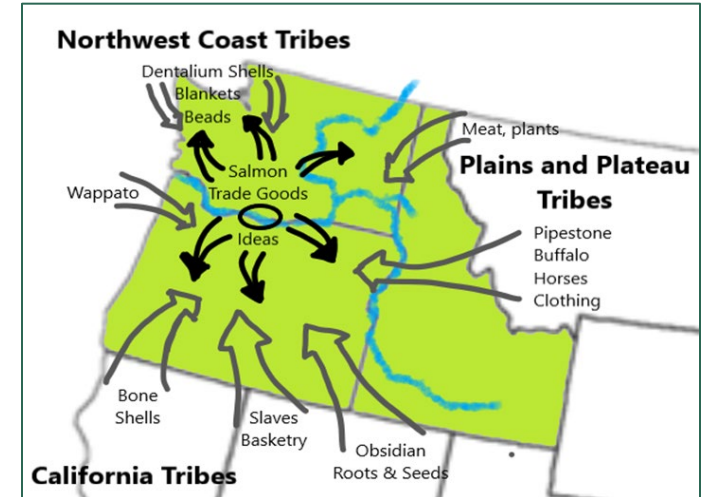
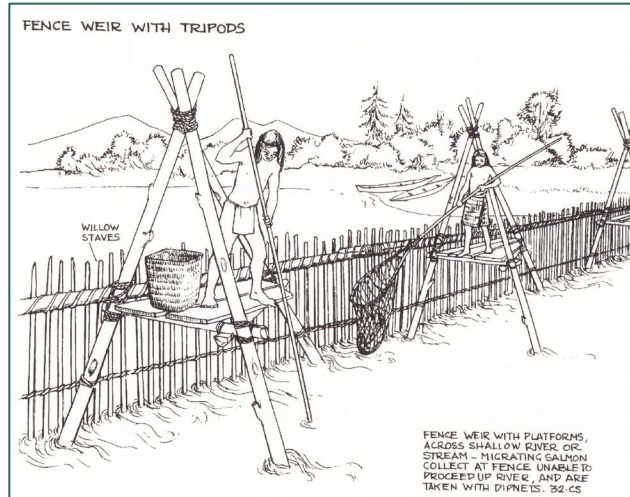


Image sources: 1) Salmon cooking: CTSI 2) Fish weir: Stewart, H. (2008). *Indian fishing: early methods on the Northwest Coast*. D & M Publishers. Used with permission. 3) Pre-contact trade network: Education Northwest map based on Indian trade network map from Nch'i-Wána, "The Big River": *Mid-Columbia Indians and Their Land* (Eugene S. Hunn).

Salmon and humans (Part 2)



Image sources: 1) Salmon cannery: University of Washington (Fair use statement) 2) Canned salmon label: Oregon Secretary of State 3) Bonneville Dam: Eric Guinther (via Wikimedia Commons, licensed under CC BY-SA 3.0)

Salmon and humans (Part 3)

Human-caused threats to salmon habitats

Drainage

Dredging

Stream channelization

Filling

Diking and damming

Tilling for crop production

Levees

Logging

Mining

Construction

Stormwater runoff

Air and water pollutants

Nutrient pollution

Releasing toxic chemicals

Invasive species

Livestock grazing

Fragmentation

Water withdrawals

Vegetation cutting

Recreational over-use

Overharvesting

Climate change



Image source: National Park Service

Humans helping salmon

Improving fish passage



Fish hatcheries



Restoring salmon habitats



Pollution prevention



Image sources: 1) Fish ladder: [Wikimedia Commons](#) 2) Fish hatchery: [Wikimedia Commons](#) 3) Salmon habitat restoration: [CTSI](#)
4) Salmon safe curb stamp: [University of Washington](#)

Salmon habitat restoration activities

Removing barriers(or building ways around them)



Adding (or removing) soil



Adding logs



Adding rocks (boulders and gravel)



Adding (or removing) plants



Image sources: 1) Culvert removal: City of Portland 2) Adding/removing soil: National Park Service 3) Adding logs: Oregon Department of Forestry and Oregon Department of Fish & Wildlife 4) Adding boulders and gravel: Oregon Department of Forestry and Oregon Department of Fish & Wildlife 5) Seedling planting: U.S. Department of Forestry (via Wikimedia Commons)

Restoration example



Image and video source: U.S. Fish & Wildlife Service (via YouTube)