



Mountains to Sound Greenway Trust

Forests and Fins

Key Vocabulary

The *Forests and Fins* curriculum focuses on stream/forest ecology and the life cycle of salmon. The terms defined below can also be found in the science journal that accompanies this curriculum. Learn more at mtsgreenway.org/get-involved/education/curriculum.

Dissolved oxygen: We breathe oxygen from the air using our lungs. Salmon breathe oxygen dissolved in the water using their gills. Dissolved oxygen levels in stream water increase when the water bubbles over small rapids called riffles. Colder and fast-moving water has more oxygen in it than warmer, slower water.

Erosion: When sediment is carried from the stream bank into the stream, making the water cloudy and burying salmon redds (nests).

Indicator species: Organisms whose presence shows how healthy the stream is. Macroinvertebrates are an indicator species in salmon streams.

Invasive plants: Plants that were introduced to an ecosystem by humans – sometimes purposefully and sometimes accidentally – that have no natural predators, and so can outcompete the native plants for water, nutrients, and sunlight.

Macroinvertebrates: Aquatic bugs that are big enough to see without a microscope (*macro* = big) and that have no backbone (*invertebrate* = no backbone).

Native plants: Plants that have lived in an ecosystem for hundreds of years.

pH: When we measure pH of a liquid, we are measuring how acidic or basic it is. pH is measured on a scale from 0 to 14, where 0 is the most acidic (like lemon juice) and 14 is the most basic (like bleach). Our blood has a pH of about 7, which is neutral. Salmon need to live in water that is neutral with a pH between 6.5 and 8.5.

Phosphate: Phosphate is a nutrient that all plants and animals need to grow. It is added naturally from decomposing plants and animals. Sometimes, though, too much phosphate enters streams from sewage leaks or from fertilizers running into streams from people's lawns or farms. Too much phosphate in stream water can reduce the amount of dissolved oxygen in the water that is available to salmon.

Pools: Deep places in the stream where water moves slowly. Salmon fry live in the pools after they leave their redd (nest) in the gravel bed.



Ppm: This is a unit of measurement that stands for *parts per million*.

Riffles: Small rapids in the stream where water moves quickly and bubbles over big rocks, logs, and sticks. The fast-moving water cleans small particles from the streambed and adds oxygen to the water for salmon and their eggs to breathe.

Riparian zone: The area along the stream where plants grow.

Shade: Trees that hang over the stream provide shade, which helps the water stay cool.

Stream channel: The bottom of the stream.

Temperature: Fish are ectothermic animals. This means they are the same temperature as the water they live in, so if the water temperature of their stream gets colder or warmer, so do they. Salmon need cold water so that they don't get too hot, and because it has lots of oxygen in it.

Transect: A line across a habitat or part of a habitat that is used to inventory the number of organisms in that habitat. Scientists often use simple tools like string or rope to set up the transect.

Turbidity: The turbidity of water is how clear or cloudy it is. The cloudier the water, the more turbid it is. The cloudiness is caused by little particles of soil and plants in the water. The particles make it harder for fish to breathe (imagine trying to breathe in a sandstorm). Particles that settle on the stream bottom can smother fish eggs and macroinvertebrates (stream bugs). Don't confuse water color with turbidity: water can be dark in color and be clear.

Velocity: How fast the water is moving. If the water is flowing too quickly, spawning salmon might not be able to swim upstream, or their eggs could be washed away. If it is too slow, silt and sand could bury the eggs and suffocate them.

Water quality: The measurement of the cleanliness and health of the water. Water quality standards are different for different organisms, although polluted water can be harmful for many living things.

Woody debris: Logs and large branches that fall into the stream. Woody debris provides shade and shelter for young salmon, decomposes and adds nutrients to the stream, and interrupts water flow to form pools and riffles.

