BEST PRACTICES

Featured Creature: Pacific Salmon

Chinook/King

Size: Typically 20–25 lbs
Life Cycle: 3–7 years
Spawns: August – November
Diet: Small fish

Chum

Size: Typically 9–11 lbs
Life Cycle: 3–5 years
Spawns: September – December
Diet: Soft-bodied organisms like jellies and zooplankton

Coho/Silver

Size: Typically 5–12 lbs
Life Cycle: 2–3 years
Spawns: September – March
Diet: Insects, invertebrates, crustaceans, fish, and squid

Pink

Size: 3–5 lbs
Life Cycle: 2 years
Spawns: June – September
Diet: Zooplankton, amphipods, fish

Sockeye

Size: 4–11 lbs
Life Cycle: 3–5 years
Spawns: September – December
Diet: Crustaceans, squid, fish, and plankton

Perhaps no animal has been such an iconic part of the Pacific Northwest's ecosystem, economy, and culture as the salmon. Many Pacific tribes have honored and celebrated salmon for centuries. In addition to bringing food to local peoples, Pacific salmon also inspired legends and connected the people with the earth. To this day salmon remain an important part of Northwest culture—they continue to play special roles in our recreation, food, and stories of the past.

Along with being a cultural symbol of the Pacific Northwest, salmon are also incredibly important to our diverse ecosystem. Salmon are anadromous, which means they are born in freshwater, migrate to saltwater, and return to

freshwater to spawn (reproduce). Healthy creeks and streams are essential for successful spawning. Estuaries, the place along the shoreline where freshwater mixes with saltwater, provide a perfect nursery for juvenile salmon before they head to the ocean. The ocean provides plenty of food to help the salmon mature before heading back to their natal streams to spawn. Their unique life cycle makes salmon an important part of the food web throughout their lives.

Salmon are a “keystone species” in the Pacific Northwest. This means that without salmon, ecosystems drastically change. At least 137 species of animals depend on Pacific salmon for their survival, including mammals such as orcas, bears, and otters, as well as fish, birds, reptiles, and amphibians. Pacific salmon's contributions span beyond the animals that feed directly on them to plants that benefit from nutrients released as their carcasses decompose—bears and other animals carry salmon carcasses into the forest where they decompose, adding essential, ocean-derived nutrients to the forest soils.

From studying tree rings, scientists know that trees gain significant amounts of ocean-derived nitrogen in years of large salmon runs. Trees and plants along salmon bearing rivers and streams can receive 25–80% of their nitrogen directly from decomposing salmon, depending on the location and size of the salmon run.

A study by Robert Naiman at the University of Washington found that Sitka spruce trees on the banks of rivers where salmon spawn grow as much as three times faster than on banks of rivers without salmon runs.

In return, these trees shade the creeks and streams that salmon spawn in, which protects baby salmon by keeping the water cool and providing cover from predators, such as birds. The trees and plants growing alongside streams also reduce soil erosion from stream banks, give homes to the insects that salmon eat, and create pockets of slow-flowing water in which young salmon can rest from the strong river currents.

Salmon begin life in what is called their natal stream. The developing eggs and young salmon depend on their natal streams for food, shade, dissolved oxygen and so much more in order to survive. Salmon spend anywhere from three months to two years in fresh water, depending on the species. After their journey downstream, young salmon spend time feeding in estuaries, where freshwater mixes with salt water, allowing their bodies to adjust to salt water. They then journey to sea where they spend the next one to eight years, before swimming back to their natal stream to spawn.

During the spawning journey, the salmon stop eating and their bodies begin to change. The males grow hooked mouths to prepare to fight other males for spawning "rights" with a female. Males and females will change from their silver ocean color to more colorful spawning colors.

Once in spawning grounds, the female salmon will dig a series of nests, called a “redd,” in the gravel by moving gravel and sand with her tail. As she digs each nest, she lays a portion of her eggs in each one. One or more male salmon will release milt to fertilize her eggs and she will gently cover them over with cleaned gravel to protect them. The female will stay with her redd to defend it from other females looking to dig their nests, for a few days to

weeks, until she dies. The males will continue to look for opportunities to spawn with other females until they are too weak and die.

Human Impacts on Salmon

Humans affect salmon, their habitat, and the species that rely on them. Many typical activities in our daily lives can contribute to stormwater pollution—the largest source of pollution in salmon-bearing streams and in Puget Sound. Toxins in our stormwater are consumed by salmon and passed along to other animals in the food web, such as the resident South Puget Sound orca pods. These orcas have a diet composed of 97% Pacific salmon and 3% other fish. Because of the toxins that salmon are exposed to the resident South Puget Sound orcas are the most contaminated orca pods in the world.

Salmon continue to be an important part of our ecosystems, economy, and culture. Some of the most effective actions that protect salmon and their habitat can come directly from you, in your own home. To learn more about stormwater runoff and ways that you can help reduce water pollution, read our article on pages 8–9. Working together to clean up our waterways will help keep the salmon coming back year after year.

Tips for Viewing Salmon

Leave your dogs at home or keep on a leash. Dogs can scare the salmon and will disrupt eggs if allowed to run into creeks.

Know where to go! Here are a few places to view salmon locally:

Species	When	Stream	Viewing Location
Chinook	late-Aug. – Sept.	Deschutes River	5th Avenue Bridge, downtown Olympia**
Chinook	mid-Sept. – mid-Oct.	Deschutes River	Tumwater Falls Park**
Chum	November	Kennedy Creek	Kennedy Creek Trail*
Chum	November	McLane Creek	McLane Creek Nature Trail**

WARNING! Dogs are susceptible to salmon poisoning caused from bacteria in decaying salmon. Salmon carcasses can be drug by bears and other animals far away from a creek or stream. If you bring your dog, keep it on a leash, close to your side, and away from live and dead salmon. Be sure to pick up, bag and trash all dog poop to prevent bacteria from entering the stream.

Source: Stream Team News, Fall 2017