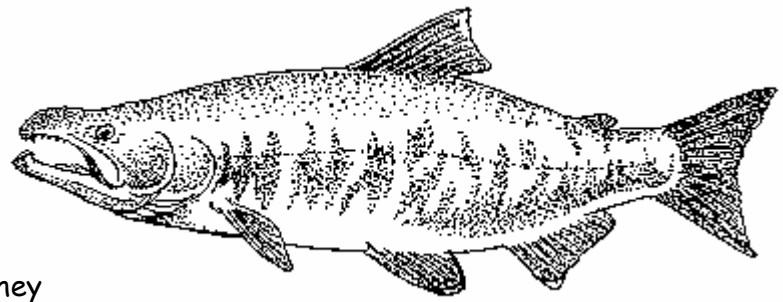


# SALMON



Salmon undertake one of the most remarkable migrations of any species in the animal kingdom. Born as tiny fry in the cold upper reaches of freshwater rivers high in the mountains, they are then flushed downstream all the way to the ocean, where their bodies undergo a physical transformation in order to survive in salt water. There they will stay for three or four years, migrating great distances to follow and feed on schools of small fish while growing rapidly. Guided by an instinctual pull that has baffled scientists for centuries, they then return to the very rivers that first dumped them into the sea. As their bodies make a final change that allows them to again survive in fresh water, they migrate further and further upstream, often to the exact stretch of river where they were born. There they find a mate, spawn, lay eggs and die, and the cycle begins all over again when the eggs hatch several months later.

**SALMON ARE FOUND IN BOTH THE ATLANTIC AND PACIFIC OCEANS.** Salmon typically inhabit colder northern waters, rich in nutrients and forage fish to sustain their hearty appetites. The largest number of different species and the largest salmon runs are found in the Pacific, from Alaska through northern California. Atlantic salmon, typically smaller in size than their Pacific cousins, are found mostly from Maine north into Canada.

Salmon runs were once abundant, but no longer. Through the end of the 19<sup>th</sup> century, the number of salmon returning to their natal streams in the Pacific northwest was so great that settlers to the region joked that a person could cross an entire river without getting wet just by walking on the backs of the salmon. Whole Native American cultures in the northwest, as well as in New England and northeast Canada, were based around the salmon runs. By the late 1800s, major salmon fisheries on both coasts were underway. Huge canneries were erected on the banks of the Columbia River (in Washington) and other major salmon rivers to capitalize on the red, tasty flesh.

**OVERFISHING TOOK A HEAVY TOLL ON SALMON RUNS.** Even though the number of salmon once seemed inexhaustible, gross overfishing eventually took its toll. Because of purse seining and gillnetting at sea and fish traps and weirs placed in spawning rivers, the chances of a salmon making it home to spawn became slim. Today, the spawning runs are a fraction of what they once were, and salmon species making runs on several rivers on both the Atlantic and Pacific coasts are included on the Endangered Species List. Despite decades of work to restore these runs, the number of wild salmon returning to spawn dwindles year after year.

**THE EFFECTS OF HUMAN DEVELOPMENT ON SALMON HABITAT ARE THE GREATEST OBSTACLES TO RESTORATION.** Salmon habitat is affected by destructive logging and ranching practices that cause excessive runoff, saturating usually clear salmon streams with sediment and smothering eggs. Agricultural waste water pollutes waterways with a toxic blend of pesticides and nitrates. When large volumes of water are diverted from rivers for irrigation, these pollutants become concentrated in the remaining river water and cause massive salmon kills as far as 100 miles downstream. Dams used for irrigation or hydropower block adult salmon as

they return to their natal rivers to spawn. Salmon ladders have been constructed at some dams to aid migration, but they are not entirely effective in getting adults past the dams. Even if the adults reach their spawning grounds, the odds are that their young will not survive to reach the ocean. The dams slow the time it takes juvenile salmon to reach the ocean, increasing their vulnerability to predation, and the power-generating turbines often suck in and kill the young fish.

### **FISH FARMS AND HATCHERIES ARE NOT THE SOLUTION TO DEPLETED WILD STOCKS.**

Hatcheries are widely used to augment naturally occurring runs, but artificially adding salmon creates increased competition for already scarce food supplies and facilitates the spread of disease. Hatchery-raised salmon are also genetically inferior to wild salmon, and some scientists fear that hatchery fish mating with wild fish will dilute the gene pool and further weaken the ability of salmon to survive.

**S**almon aquaculture is a global industry, producing over 1 million tons of fish per year. In recent years, farmed salmon has flooded the marketplace and driven down the price of wild salmon, which has devastated fishing communities in Alaska and along the Pacific Coast. Compounding the fishermen's troubles, the aquaculture farms are often located along salmon migratory pathways, and their effects on wild populations have been well documented. Escaped farm salmon - many of which are nonnative to the area where they are farmed - breed with wild fish, corrupting the genetics of the native species. Pollution from the farms in the form of chemicals, excess feed, and waste further degrades the surrounding habitat. Disease and parasite transmission from farmed fish is perhaps the greatest threat to wild stocks. Research has shown that wild juvenile salmon are particularly susceptible to sea lice infestations that they contract when passing by salmon farms on their way to sea. As a result, survival of these salmon runs is reduced by more than 50%.

### **THE NATIONAL COALITION FOR MARINE CONSERVATION (NCMC) SUPPORTS THE FOLLOWING ACTIONS TO IMPROVE SALMON CONSERVATION:**

- Breach hydropower dams that produce relatively little electricity compared to their devastating impacts on salmon, such as those on the Snake River in Washington State. Natural river conditions should be restored where possible.
- Remove open water salmon farms located near wild salmon runs.
- Implement strict harvest limits both offshore and in-river to ensure enough adult salmon reach their spawning grounds.
- Initiate community-based efforts to restore or improve streamside habitat throughout the salmon's spawning range, specifically to lower water temperature and reduce sedimentation.
- Improve salmon hatcheries to simulate natural rearing conditions and phase out the use of hatcheries as numbers of wild spawning fish increase.



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