



Interactive Salmon Life Cycle

Adult male and female salmon release gametes (eggs and sperm) simultaneously as their bodies shimmy and their mouths **gape**. The fertilized eggs are deposited in a **redd** (a nest dug in the gravel) located in a **streambed** or along a lakeshore. The female salmon **digs the redd** using undulating (sweeping) movements of her tail, while the male chases away **other males attempting to spawn with the female**.

Embryos (fertilized eggs) **hatch** and develop into **alevins (yolk-sac fry)** which live off the nutrient rich yolk-sac attached to their underside. The young alevins will emerge as fry from the redd when they absorb their nutrient rich yolk-sac and start actively searching for food. Alevins that

emerge from the redd before they completely absorb their yolk-sac are commonly called button-up fry. The fry will develop **parr** marks (vertical bars) on their sides as they feed and grow. The parr marks last from a few months to several years, depending on the species and variety of salmon. After a period of growth in fresh water, anadromous fish start their downstream migration to the ocean. (Kokanee and other land-locked salmon migrate downstream to a lake.) The **smolts** undergo a series of physiological and morphological changes that allow them to acclimate (adjust) to the salt water conditions of their new marine environment. Once in the ocean, smolts continue to feed and grow into fully developed adult salmon. Some salmon, called jacks/jennies become sexually mature after only a short time in the ocean, and return to their natal stream to spawn (reproduce) earlier than the rest of their brothers and sisters. (Jacks are males. Jennies are females and are very rare. On the East Coast and parts of California, the term "grilse" is used rather than "jack.") Salmon that have spawned are called kelts. Pacific salmon (chinook, coho, pink, sockeye/kokanee, and chum) spawn only once during their lifetime (they are "semelparous"), and die within a week or two after spawning. Nutrients from their **decomposing bodies** help to fertilize the stream where their young will live the early stages of their lives.

Steelhead (anadromous rainbow trout), coastal cutthroat trout, Atlantic salmon, brown trout, brook trout, Dolly Varden, bull trout, and other salmonids can be anadromous, but can still spawn more than once (they are "iteroparous"). After spawning, they return to the ocean to feed and grow more, and will make their way back to fresh water to spawn again in another one to three years.

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