

Atlantic salmon

....a remarkable life cycle



General Description

Atlantic salmon (*Salmo salar*) have a long, thin body, small head, blunt nose and their mouth extends back below the eye. Adult salmon are silver in colour with nearly all white undersides and distinct dark blue-green, cross-like spots over the body and head. Atlantic salmon in Newfoundland and Labrador are generally less than 70 cm (28 inches) in length and weigh less than 4.5 kg (10 pounds). Atlantic salmon are a distant relative of Pacific salmon (*Oncorhynchus* spp.) and closely related to Brown trout (*Salmo trutta*).

Distribution

Atlantic salmon can be found throughout the North Atlantic Ocean. In North America, their range extends from the northeastern United States (Maine) to northern Quebec (Ungava Bay). Atlantic salmon are commonly found in rivers throughout the island of Newfoundland and southern Labrador.

Habitat

Atlantic salmon are a cold water migratory species that require different habitats for each life stage. They are born in freshwater, migrate to sea to feed and grow, and return to freshwater to reproduce or 'spawn'. The term anadromous refers to this type of migratory behavior. While at sea, salmon remain in coastal areas or travel 2500 km across the Labrador Sea to Greenland. Atlantic salmon returning to freshwater have an incredible 'homing instinct' that guides them back to the river where they were born.

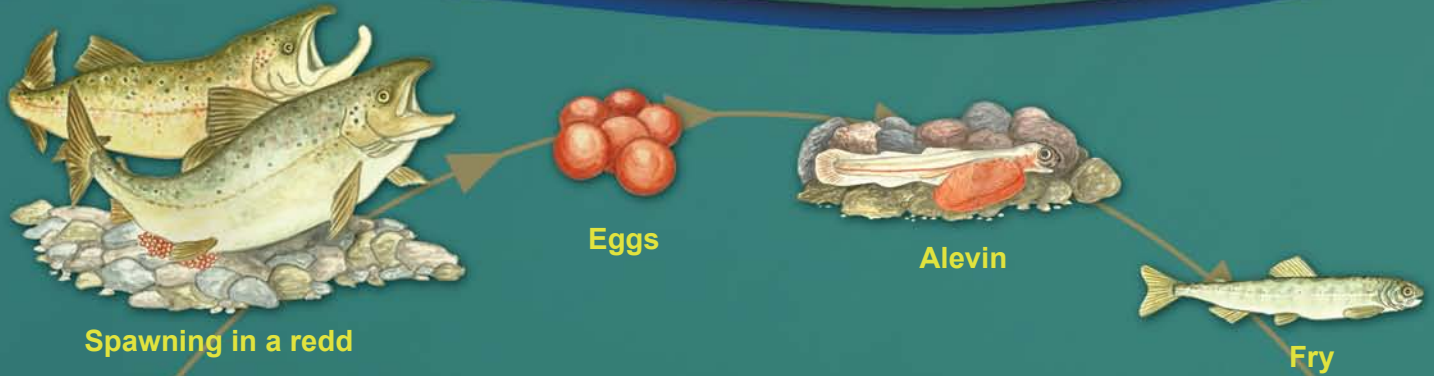
In freshwater, Atlantic salmon require clear, cold, fast moving water with a gravel bottom for spawning and rocky areas for juvenile fish. Salmon are often found in pools that offer protection from predators and warm temperatures and where water flow conditions enable them to rest.

Diet

Young Atlantic salmon in rivers, feed mainly on aquatic insect larvae such as mayflies, blackflies and stoneflies. Marine salmon feed on a variety of organisms including zooplankton, fish larvae, and small fishes (e.g., capelin, sand lance and herring.)



Atlantic salmon Life Cycle



1. In late autumn, adult female salmon dig a shallow nest in the gravel called a redd. Eggs are laid in the redd and fertilized by male fish (anadromous or mature juveniles) in a process called spawning. The female salmon buries the fertilized eggs under 12-15 cm of gravel.
2. Eggs remain buried in the gravel during the winter months and salmon hatch in early spring as alevins or yolk-sac fry.
3. Once the yolk-sac is depleted, which takes about one month; alevins emerge as fry from the gravel to begin moving and feeding on their own.
4. Toward the end of their first year, young salmon develop characteristic dark bars along their side with red spots distributed in between them and are referred to as parr. These markings help fish blend into their environment to avoid predators.
5. At three or four years of age, parr change into smolts through a process called smoltification that allows them to survive at sea. Smolts migrate downstream and enter the sea in late spring or early summer (May/June). At this stage they are silver in colour and have dark fins, which reduces the risk of predation in open waters.
6. After one to three years, salmon return to the river in which they were born to spawn. Salmon are classified by the number of years they spend at sea; one year are grilse or one-sea winter (1SW), two years are two-sea winter (2SW) and greater than two years are multi-sea winter (MSW).
7. Salmon grow very quickly at sea due to plentiful food supplies. Grilse spawning for the first time are generally less than 63 cm in length (small salmon); whereas 2SW, MSW and repeat-spawning grilse are generally greater than 63 cm in length (large salmon). Most rivers in Newfoundland and Labrador are 'grilse rivers' and large salmon are predominantly repeat spawners.

Some remarkable facts about salmon:

- The name salar comes from the Latin salio which means "to leap". Atlantic salmon can leap up waterfalls 4.5 meters high (15 feet).
- The largest Atlantic salmon ever caught on a fly in North America weighed 32.6 kg (72 pounds).
- Atlantic salmon can travel up to 100 km per day in the ocean.
- Atlantic salmon lay 1500-1800 eggs per kilogram of body weight.
- Female Atlantic salmon build their nest (redd) and cover their eggs using their strong tail.
- Atlantic salmon scales can be 'read' much like the rings on a tree. The scales are used to determine the fish's age, growth and how many times it has spawned.
- Fin tissue can be used to determine where Atlantic salmon were born.

