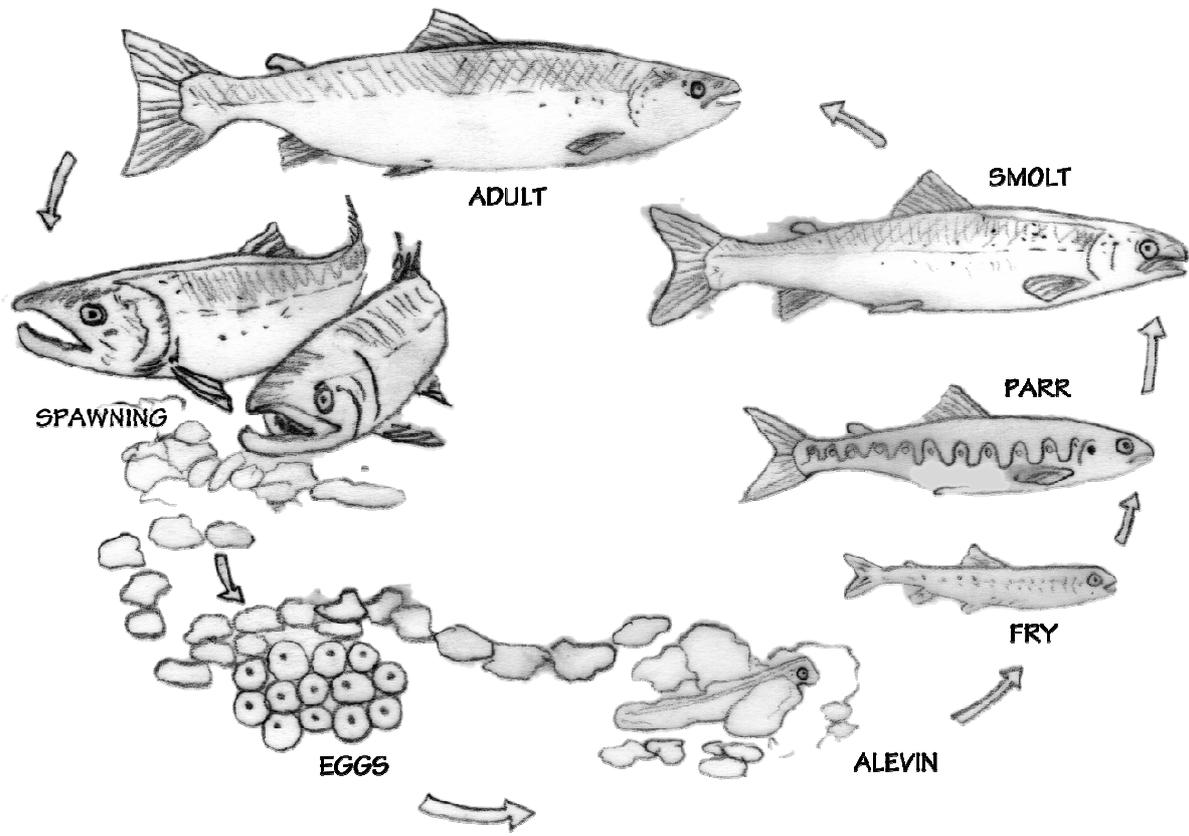
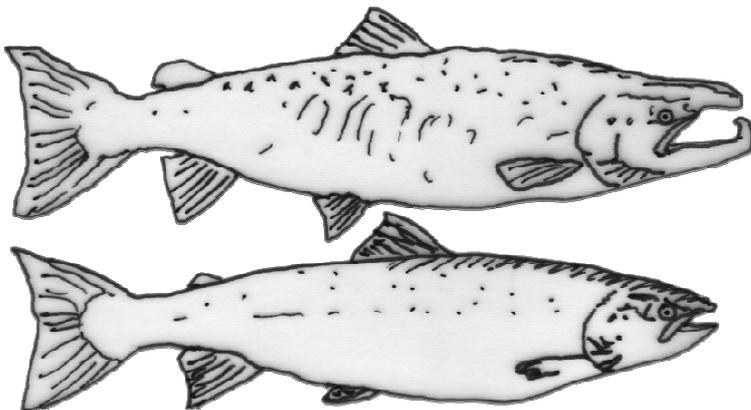


Atlantic Salmon Life Cycle



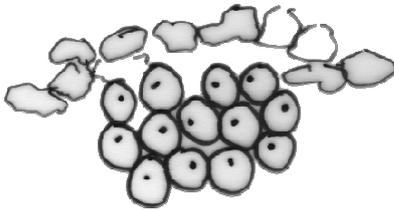
Spawning

In late autumn the wild Atlantic salmon spawn. The female selects a site which is often at the tail end of a large pool. It is important that the water is flowing steadily through clean loose gravel. This ensures a free flow of oxygen-rich water through the stones essential for the salmon eggs to develop. She digs a 10 to 30 cm deep nest called a redd in the gravel with her tail. The female releases her eggs with the male alongside her. Then the male releases his milt (sperm) to fertilise the eggs into the redd. The female then covers the eggs with gravel. In some cases the sexually mature male parr manage to fertilize some of the eggs. The female may lay 1,500 eggs or more for each kg of body weight.



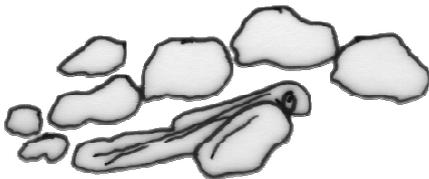
Eggs

Pea sized orange eggs are deposited in riverbed gravel in autumn, and hatch the following early spring. As the eggs develop, the eyes of the developing wild salmon can be seen through the semi-transparent membrane.



Alevin

The partly transparent alevin hatch and remain hidden in the riverbed gravels, feeding from the attached yolk sac. They emerge from the redd about 4 to 6 weeks after hatching. They are about 2cm in length. They now have all eight fins, which will be used to maintain their position in the fast flowing streams and manoeuvre about in the water.



Fry

Once the yolk sacs have been used up the alevins are known as fry. Wriggling up from the gravels, the small fish rise to the surface of the water to take a gulp of air with which they fill their swim bladder, giving them natural buoyancy. The fry feed on microscopic life in the stream, and grow quickly during their first year. They eventually reach a length of 5 to 8 cm before transforming into Parr.



Parr

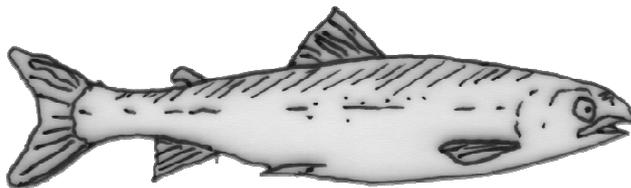
The salmon are known as parr once they are over a year old. The vertical markings called 'parr marks' appear, with a single red dot between. The markings act as camouflage for the

fish. Parr remain in the river for 1 to 4 or 5 years, depending on water temperatures and food availability. They feed on small aquatic insects.



Smolt

At a length of 12 to 24 cm a springtime transformation of the parr takes place into smolt. A silvery sheen replaces the parr marks, and the edges of their pectoral and caudal fins darken, a process called 'smolting'. Internally they undergo a complex transformation to survive in saltwater. Special cells in the gills allow the salmon to modify its physiology to adapt to salt water. The salmon learns to osmoregulate, which means regulate the salt and water in its body. It must guard against the loss of water and be capable of secreting excess salt from its body. The fish now change from swimming against the current to swimming with it. Hormones bring about 'downstream' behaviour. On the downstream journey the scents of the smolt's native river are imprinted on its memory, to be recalled when it returns to spawn. Smolts head out to sea in shoals during late spring.

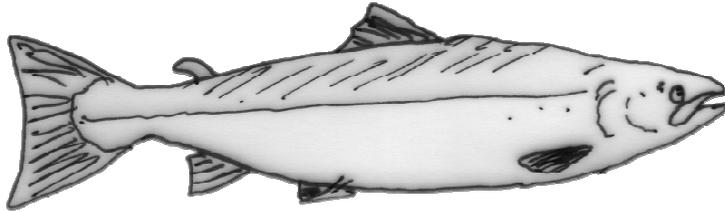


Adult

Silvery adult wild salmon go to sea to feed, build up their body weight and grow rapidly. They travel great distances at sea to rich feeding grounds in cold northerly waters feeding on small fish such as sand eels, krill and herring and crustaceans. Most populations follow lengthy migration routes to waters off south western Greenland. Other feeding grounds are in waters surrounding the Faroe Islands north of Scotland.

The salmon return to the rivers in which they were born after being at sea for one to four years. Wild salmon that return after one year at sea are called grilse. Adult salmon that stay at sea more than one year are known as multi-sea winter salmon. Hormones dictate when it is time for the adult salmon to return to freshwater and its home river. They enter freshwater between April and November. The female (Hen) salmon is blue black in colour and swollen with eggs. The male alongside her has a coppery coat with brown-orange tints.

Hormones control the upstream migration of the fish, back to its native stream. Once in freshwater they stop feeding, living off accumulated fat reserves.



Kelt

After the adult salmon have spawned they are known as kelts. They are weak having not eaten since their arrival in freshwater. The females have laid all their eggs and appear particularly thin. The male fish are tired out from fighting with other males to make sure they spawn with the best females. Some kelts are able to make it back to sea, where they will begin to feed and grow strong again. If they are very lucky they may be able to survive long enough to make it back to their river to spawn again. Scientists estimate that only around 5% of kelts that make it back to sea, and survive, are able to make it back to spawn.

