

all about

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SALMON

Salmo salar

Adult salmon are silvery fish with a few scattered spots. During the breeding season the male develops red spots and a pinkish belly and his lower jaw grows forward into a hooked shape. The size of a salmon depends less on its age than on the length of time that it has been at sea. The largest are those which have grown for 3 or 4 years without breeding. These huge salmon measure about 1.5m and weigh up to 36kg.

Where do salmon live?

Salmon lead a complex life. They spend their first 2 or 3 years in rivers before swimming out to sea. They then travel thousands of miles to their feeding grounds near Greenland. The salmon remain at sea for 1–2 years before returning to the river in which they hatched to spawn. Some may return to the sea to feed and then back to the river to spawn again.

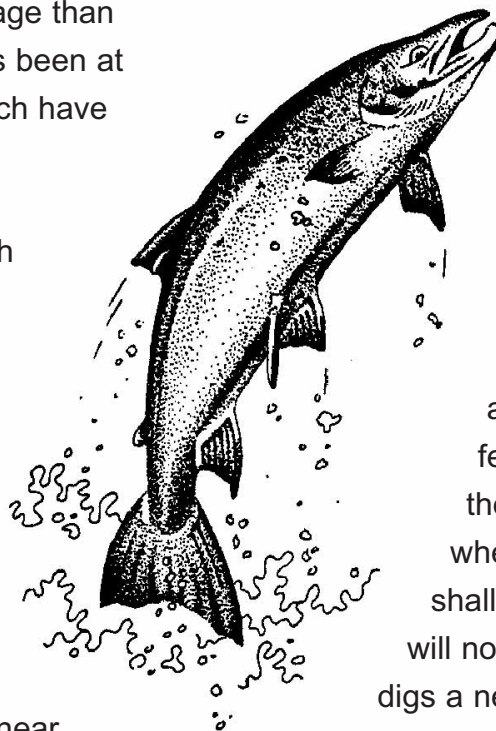
They usually live for 3–5 years.

Exactly how the salmon find their way on these incredible migrations is not known but the smell and the taste of the water

in their “home” river plays some part.

Life cycle

Salmon spawn in the upper parts of rivers, such as moorland streams, between late October and February. The female chooses a spot in the gravel on the river bed where the water is not too shallow and where the eggs will not be washed away. She digs a nest called a redd in the gravel using her tail and then releases her eggs into the nest. She then digs another redd further upstream and in doing so covers the first set of eggs with gravel. The female lays 2,000–15,000 eggs. Some eggs may be



eaten by river animals but most remain well hidden. After spawning the adult salmon are exhausted and many fish die. Those that survive may spend the winter in deep holes or drift back downstream towards the sea.

The eggs hatch in March/April. The young fish leave the gravel when they have grown into fry (about 2cm long). Salmon fry eat insect larvae and other small water animals. The salmon then spend 1–3 years in the river during which they are called parr. They develop dark patches on their bodies which helps camouflage them.

In the spring of their second, third or fourth year, parr become smolts (about 16cm long). Their fins turn black and their body becomes silvery. They swim to the river estuary and stay there for a while getting used to the salty water and a new diet of small shrimps and estuary fish. Finally they swim out to sea where they grow quickly, feeding on small fish, sand eels and large zooplankton.

When the salmon return to their home river they are fat and in good condition. They stop feeding when they enter the river but will still bite anything which looks like food. During their journey up the river they may have to pass waterfalls and other obstacles. To do this salmon make quite spectacular jumps, leaping as high as 3m into the air.

Humans and salmon

The number of salmon seem to be falling in some Scottish rivers but there appears to be no simple explanation for

this. Finding out about salmon is difficult because of their complicated life style. Some information has been obtained by attaching metal or plastic tags to fish or even by using radio transmitters. Most information about salmon numbers comes from fisheries but these are only open for half of the year.

Salmon fishing

Salmon have been caught by man for food and sport for hundreds of years. They are caught by net fisheries in estuaries and in the sea, and by anglers in rivers. Fishing regulations such as closed seasons for rods and nets during which no salmon can be caught help to protect the number of salmon.

In the 1960s the discovery of the salmon's feeding grounds around Greenland and the Faeroes led to new salmon fisheries being set up. It is difficult to assess what impact these fisheries have had on the number of salmon, but quotas have now been set up, placing a limit on the number of salmon that can be caught.

Other problems for salmon

Pollution of rivers by industrial waste, agricultural chemicals and sewage can harm salmon and the animals they eat. In recent years tighter pollution controls have led to an improvement in the water quality in many rivers. Spawning sites can be damaged when changes in land use next to the river, such as new forests, alter the river flow or cause silt to be deposited on the gravel river bed making it unsuitable for spawning.

Careful land management can help to reduce this problem.

Obstacles in the river such as hydro electric schemes can prevent salmon reaching their spawning sites upstream. Special structures such as salmon ladders are built to help solve this problem.

Since the 1970s salmon fish farming has grown extremely quickly in Scotland. There is some concern that escaped farmed salmon could cause problems for wild fish.

From time to time large numbers of salmon are killed by disease which appears to occur in cycles. This has happened at least twice in the last 100 years.

The future

Understanding that salmon have to cope with lots of problems, the European Union has decided to give the species special protection. Some rivers, which are of very high quality and contain lots of salmon, will be maintained as safe havens for the fish when they are not at sea. Hopefully this will help to provide a better future for salmon.

Finding out more

Collins guide to the Freshwater Fishes of Britain and Europe

B.M. and P. Dahlstrom (Collins)

Freshwater Fishes

P.S. Maitland and R.N. Campbell
(Harper Collins, The New Naturalist series)

Fish, Eyewitness Guide

(Dorling Kindersely)

How you can help

You could become involved with groups of other people concerned with the future of Scotland's wildlife. Check your local newspaper or library for information about groups in your area.

Scottish Wildlife WATCH, which is part of the Scottish Wildlife Trust (SWT), produces a magazine and Scottish newsletter which include information about environmental issues and give you the chance to help wildlife by taking part in projects and surveys. Contact: SWT, Cramond House, Cramond Glebe Road, Edinburgh EH4 6NS

A poster of a salmon is available free of charge from Scottish Natural Heritage, Publications Section, Battleby, Redgorton, Perth PH1 3EW

Glossary

Habitat

The place in which a plant or animal lives.

Migration

Long distance movements by animals between one place and another.

Spawn

Lay and fertilise eggs.

**SCOTTISH
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Forestry Commission
Scotland

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