

Juvenile salmon stocks in the Spey

Fish species present

The Spey supports a limited range of mostly native fish species. The fish that dominates the Spey is of course the Atlantic salmon. Brown trout is also extremely widespread.

Salmon in the Spey

The Spey supports some of the highest altitude salmon in Scotland and some of the furthest travelled from the sea. Salmon spawn from just above the tidal reaches to beyond 600 metres in the upper reaches of the Avon (pronounced A'an) and Dulnain. Salmon fry and parr are routinely found well above the Spey Dam, over a hundred miles from the sea.

The local conditions in each part of the Spey determine how the salmon develop. Factors such as the length of the growing season, temperature, food availability and competition all shape the fish's characteristics.

Adaptable characteristics include spawning date, growth rates, smolting, and run timing. These factors can affect the density of juvenile fish present.

Below: Four age classes of juvenile salmon from the middle reaches of the River Avon. Fry at the top to 3 year old parr at bottom.



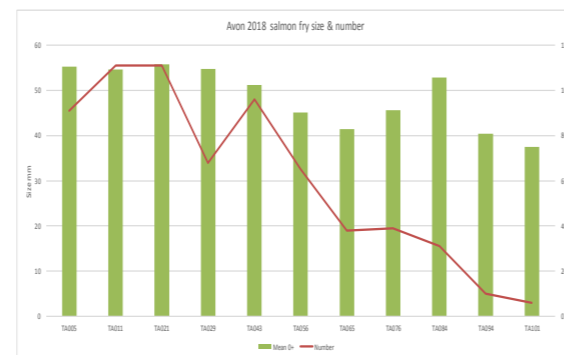
Juvenile densities in the Spey

The Spey catchment supports one of the largest and most diverse juvenile salmon populations in Scotland. Densities vary from place to place and over time. Parts of the Spey catchment support very high numbers of fish; the Fiddich and Livet tributaries are amongst the most productive in Scotland. In other parts of the river, the habitat cannot support high numbers, such as those at high altitude like the headwaters of the Avon in the Cairngorms.

The River Avon is a good example of a river where the productivity increases as it progresses downstream. It's headwaters are in the Cairngorms, a granite mountain range with low productivity, although high quality, and silt-free waters. Fish in these parts are slow-growing and sparsely-populated; a response to the low productivity and the short growing season.

At Inchrory, limestone outcrops improve productivity. Pockets of richer water are also created at the confluences of more productive tributaries, such as where the Lochy and Chabet join the Avon.

The number and size of salmon decrease with altitude, as the graph below shows. The Allt Loin Bheag, site TA084, is a productive tributary, hence the boost in population at this point of the Avon.



Fish growth

Juvenile salmon growth rates reflect the Spey's diversity. To smolt, a parr needs to reach 90mm by the end of the previous summer. This is possible for some juveniles in the lower reaches from Boat o'Brig, and in the Fiddich where distillery cooling water increases temperatures. The proportion of returning adults from one-year-old smolts in the Spey is low; no more than 2% at present.

Most of the Spey's salmon smolts are two- or three-year-olds. Mainstream and lower tributary smolts tend to leave as two-year-olds, and as three- or four-year-olds in the upper reaches and higher tributaries.

The most productive parts of the Spey?

The Spey mainstem is hugely productive and makes up 60% of the catchment. Of the tributaries, the Avon is the best and the Fiddich, Dulnain, Nethy, Druie, Feshie, Tromie and Truim are also important spawning streams. Many of the smaller burns also support high juvenile densities.

Can I help?

Contact the Spey Fishery Board using the details below if you have anything to report about the river, good or bad, or if you would like to assist in managing it.



Factors affecting juvenile densities

As well as varying from one part of the river to another, juvenile densities vary from year to year. Why?

- The number of spawning adults seems an obvious explanation, but although the runs have declined, there is no correlation between the catch in one year and the fry counts the next. It is known that the number of spawners has to drop to very low levels, and consistently, for such an effect to occur; for example above Spey Dam.
- Overwinter flows, and at gravel emergence time in late spring, affect fry recruitment.



- Big spates reduce future catches and are happening more frequently.
- Predation by sawbill ducks, which depend on the quantity of juvenile fish and other factors such as flows and ice-cover. There is a management scheme in place for sawbill ducks.
- Water quality and quantity. The Spey Fishery Board works closely with SEPA, but also with local businesses, to safeguard the river's water.