

# Stocking and the Use of Hatcheries

## A History of Stocking on the Spey

Stocking has often been the first choice strategy to improve fish numbers. There have been hatcheries on the Spey since the late 1800s and Gordon Castle's reared up to one million fish, before closing in 1914. In the late 1960s, the fishery board established a hatchery at Knockando prior to the construction of the current facility at Glenlivet in 2001.

## Types of Stocking

There are four different types of stocking:

- ❑ **Reintroduction:** to re-establish populations where they have been lost, for example due to a pollution event.
- ❑ **Restoration:** to restore populations at a low ebb back to numbers of previous abundance, such as above Spey Dam.
- ❑ **Enhancement:** to increase stocks, and subsequently catches, to above a catchment's natural carrying capacities.
- ❑ **Mitigation:** compensatory stocking to maintain production in areas no longer accessible to migratory fish, particularly due to man-made obstacles.

*Below: planting-out the juvenile fish.*



## The Recent Past

In 2003, the numbers of salmon stocked in the Spey had increased three-fold through a combination of catch and release, habitat improvements, and enhancement and mitigation stocking. Enhancement stocking focussed on suitable habitat above impassable waterfalls, in effect expanding the range of salmon within the Spey catchment.

It became illegal to stock above impassable waterfalls with the Wildlife and Natural Environment Act (2011) - the WANE Act - so in recent years the Spey Fishery Board's focus has been on mitigation stocking. Its potential is limited, though, as less than 1% of the catchment is estimated to be left inaccessible to migratory fish by man-made barriers.

So the current Spey hatchery operation is relatively small and focused on mitigation stocking, although the Board believes there may be opportunities for restoration stocking above Spey Dam in due course.

*Below: The SFB Hatchery at Sandbank, Glenlivet.*



## Identifying Stocking Areas

Identifying under-used areas of the Spey can be difficult. It is likely that some areas only ever supported low fish densities, such as those with granite geology. So to try to improve fish populations in these areas by stocking is unlikely to be productive. Salmon do use these areas, but these are highly adapted fish and particularly susceptible to disruption, be that climate or habitat change, or by the introduction of stocked fish from out-with that area.

## Genetics

Recent research has shown that rearing fish in a hatchery can alter their genetics. The captive environment domesticates them and reduces their fitness, meaning they are less likely to survive in the wild and will produce fewer eggs than their wild counterparts. This impact is also apparent when hatchery-reared fish breed with wild fish—referred to as introgression—and pass on that reduced fitness to their off-spring. This is a serious concern for Rivers such as the Spey, which are designated as Special Areas of Conservation (SACs) for their stock of wild Atlantic salmon.

*Below: fish rearing tanks at Sandbank Hatchery.*



## Current Stocking Policy

Since 2011, a more targeted approach to stocking has been taken by the Board. This followed the extensive electrofishing programme and the genetic analysis project that gave an indication of the hatcheries' contribution to the rod fishery. (See the Annual Report 2013, on the SFB website).

Since then the Board has to consider its stocking policy and requirement for each year. To enable this, a comprehensive programme of electrofishing takes place each year to identify and confirm stocking opportunities, the results of which helps steer the Board's stocking plans.

The Board then has to apply to the Scottish Government for a licence to take broodstock fish for its hatchery out-with the salmon fishing season. The River Spey's designation as a SAC also requires that detailed assessments are made before putting a plan into action, to ensure the stocking proposals will not adversely affect the integrity of the species.

The Board's stocking policy remains progressive and will continue to be subject to review in light of new legislation, Government policy, our ongoing monitoring and advances in scientific research.

*Below: catching broodstock fish using an electro-net.*

