Construction Impacts

Construction work in or near to rivers can have huge negative impacts on the river and ecosystem health for short and long terms. Construction impacts the river by: increasing erosion, increase in suspended sediments, destabilises river banks, accidental release of contaminants, possible pollution incidents, physical disturbance of river bed, disturbing wildlife etc.

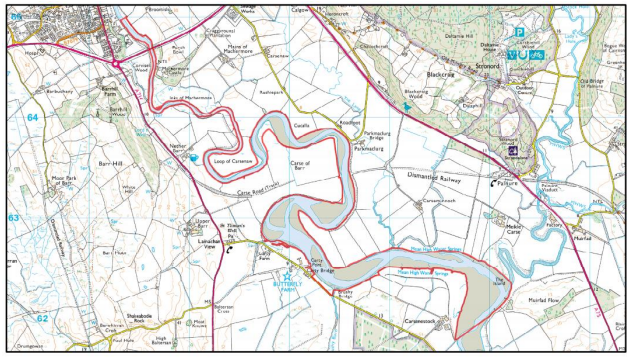
Sparling are very sensitive fish, so any construction could massively impact their chances of successfully reproducing and of eggs developing.

Preventative Measures

By accurately predicting their arrival during the spring, based on river temperatures, any disturbance to the spawning sparling can be avoided. There should be no disturbance to the river or the sparling in the weeks immediately prior to, during or, the weeks following the spawning event otherwise there could be disastrous consequences for this rare species of fish.

Ideally avoiding all construction, in and along the river banks, would protect the sparling. A guidance period of 2 weeks before and 4 weeks after the spawning event would help protect this vulnerable population. If no monitoring is to take place, all construction should be avoided between the 1st of February and the 14th of April. This long window allows for years when sparling spawn later due to lower river temperatures.

SSSI Boundary



The Lower River Cree was designated as a Site of Special Scientific Interest (SSSI) in March of 1991, under the Wildlife and Countryside Act 1981. The site lies due south of Newton Stewart and extends approximately 9km south to protect the only known spawning site of sparling in Scotland.

This designation aims to maintain and protect this small stretch of water which is the only known spawning ground in Scotland.

Summary

- Sparling are a very rare species of fish that need protection
- Smells of cucumber
- Only 3 populations remain in Scotland (used to be 15)
- Cree is the only known spawning ground in Scotland
- Mainly live in brackish waters of estuary but migrate upstream to spawn
- Spawning period only lasts a few days each spring
- Very sensitive to disturbance, water quality and pollution

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Guide to the River Cree's Rare Sparling Population

Galloway Fisheries Trust

Environment, Science, Nature

Product of Saving the Sparling Project funded by the European Fisheries Management Fund, the Scottish Government and the Holywood Trust.

Sparling

(Osmerus eperlanus)

Sparling is a rare species of fish which can be found in the River Cree during the spring migration. Sparling typically spend the majority of their life in the brackish waters of the lower estuary, but require freshwater habitats to complete their lifecycle.

Due to significant declines over the last 150 years only 3 out of 15 populations remain in Scotland. Sparling are culturally significant for the area, once supporting large commercial fisheries along the Solway Coast.

During the migration, which only lasts for a few days in the spring, the entire population of sparling swims upstream to the upper tidal limit in search of ideal spawning habitat. These weak swimmers use the incoming high spring tide to reach fast flowing riffle sections to maximise the dispersal of eggs and increase the success of the spawning period. In the case of the Cree, this is typically upstream of the A75 bridge and below the Creebridge Weir.

Once spawned, surviving adults return to the sea and the sticky eggs adhere to stones and water weed where they remain and develop over the forthcoming weeks. Sparling eggs are very sensitive to disturbance, oxygen levels and suspended solids in the river which can be drastically altered by construction in and around rivers. This can have significant impacts on the reproductive success of a population.

Predicting the Arrival of the Sparling

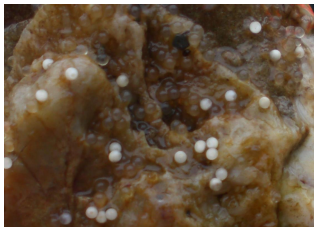
The arrival of the sparling is influenced by the rising waters temperatures in spring time, with the boundary thought to be 6°C. The tides are also an important factor, high spring tides allow these weak swimmers to reach the upper tidal limit which is ideal for spawning.

GFT monitors water temperatures from the 1st of February to estimate the approximate arrival of the sparling. On the 100th Degree Day (when temperatures (°C) add up to 100 from the first survey day) river bank surveys should be conducted to look for signs of the imminent sparling arrival.

Indicators that Sparling have arrived

There are three main signs to look for when conducting riverbank surveys, which indicate the arrival of the sparling.

1. Eggs



Eggs are sticky and roughly 1mm in diameter, adhering to stones and waterweed. Live eggs are translucent and very hard to see, but dead eggs which are white can be good indicators.

2. Sparling Carcases

Dead sparling can often be found along the river banks. There are high mortality rates due to exhaustion and predation.

3. Predators

Increases in the abundance of known predators is a good indicator, as predators take advantage of the dense shoals in shallow river sections. Known predators include: otter, mink, cormorants, goosanders, seals and grey herons.