Cromarty Firth Fishery Board
Biologist's Update

March 2023



Loch na Croic Adult trap

Given the promising catches obtained by opening the trap early in 2020 and 2021, we began trapping this year on the 19th of October. Despite opening the trap early, the 2022/23 trapping season saw us with a low catch of just 432 fish. Whist this is the lowest total catch on record, we did have a relatively even split between hen and cock fish (202 and 230, respectively). Whilst initially disheartening, more hens were in fact caught and stripped than in 2014. We also saw a good number of large MSW hen fish which allowed us to meet our egg production target for the Blackwater.

Given the warm autumn, and elevated water temperatures coming into winter, we did witness several outbreaks of saprolegnia infection within the river system. Unfortunately, this meant that fish in quite poor health were being caught in the trap, and we did suffer some mortality in the holding tanks. Routine health checks and regular treatments were carried out, but we did suffer high mortality across the season with 38 fish dying.

During trapping operations, a number of fish were seen swimming upstream of the heck at Loch na Croic. Subsequent investigation of the trap infrastructure led to the discovery of several heavily eroded sections of the heck and associated screens. This issue has been raised with SSE but it is unfortunate that we have no way of quantifying the loss of fish through these gaps. It could be that a significant number of smaller grilse successfully moved upstream past the trap contributing to the low catch this year.

Figure 1: Proportion of female to male fish (left) and proportion of grilse to MSW hen fish.

Contin Hatchery & Egg stocking

A total of 808,547 salmon eggs were collected during the adult fish trapping season in winter of 2022. These were incubated in our flow-through hatchery in Contin, with staff carrying out daily checks and removing any mortalities. At 280-degree days, eggs were “shocked”, a process where the eggs are given a mild physical shock, which allows for removal of any blind (unfertilised) eggs prior to stocking.

In order to maximise egg production, a small number of dead hens were stripped if found to be ripe. Unfortunately, fertilisation of these eggs was less successful than those of healthy fish and they suffered 43% mortality post shocking. With the exception of these trays, overall hatchery mortality was significantly lower than previous years at 1.7%.

Stocking of the Blackwater started in early March and was completed within a small weather window between high water and extreme cold. All eggs were stocked out as eyed ova, either into artificially dug redds in the riverbed where substrate allowed, or in biodegradable ‘eco’ egg boxes where gravel was in limited supply. The

stocking of eggs at this stage allows alevins to hatch into a natural river environment where they are immediately exposed to natural river conditions. This should minimise any hatchery associated domestication and ultimately increase population fitness through natural selection.

Figure 2: Eggs in a semi-natural riverbed redd before being buried (left) and eco egg box (right).

River Meig Rotary Screw Traps

The smolt trapping operation on the River Meig utilises rotary screw traps (RSTs) which capture smolts as they migrate downstream to the sea. The board plan to continue trapping operations on the Meig in 2023 and are currently making preparations for the deployment of the newly repaired screw traps.

The Cromarty Firth Fishery Trust is also funding the installation of two motors to the existing RSTs. These motors will be activated in low water conditions, causing the RST drum to rotate at a rate of at least 6 revolutions per a minute. This should improve the capture efficiency of the RSTs under low water conditions, additionally improving smolt survival rates. Development of these motors is ongoing, and they will be trialled on the Shin system with SSE and The Kyle Fishery Board. If they are suitable, we should have ours upgraded by April 2024.

The board are also working with SSE to continue research into the day vs night release trial. All captured smolts from the Meig and Bran will be split evenly between the automated night release cage at Tor Achilty and the standard day release method used in the past. Results of this study should be incoming over the next 4 years.

Bailiffing

Regular patrols have been carried out during the off-season to ensure no illegal fishing is taking place within the district. These patrols also extend to the various fish passes across the rivers to ensure fish passage is maintained.

The Board are pleased to announce that we have four warranted members of staff, ensuring good coverage of the catchment and ability to respond to reported incidents.

Scottish Invasive Species Initiative

A £2.2M nature restoration fund was awarded to the SISI project for three-year continuation. This has allowed a number of partners across Scotland to appoint a full-time, dedicated project officer. The Cromarty Firth Fishery board have interviewed candidates for this position, and we should have a project officer in post by mid-April. The successful applicant will have responsibility for invasive plant control and volunteer engagement across Cromarty, Ness and Beauly catchments and will be in post until May 2026.

Meetings

Meeting	Purpose
IFM AGM	Institute of Fisheries Management Annual General Meeting
Dingwall Academy Science week	Classroom sessions for in-vitro fertilisation of salmon eggs
Fishery Management Planning Workshop	FMS funded workshop for Fishery managers to develop 5 year management plans
SEPA	To discuss SEPA electrofishing protocols and design on the Glass
Scottish Invasive Species Initiative (SISI)	Discussions around extension to the SISI project, NRF funding and continued support from CFFB
Strathconon Hatchery meeting	Open day at Loch na Croic facilities to show Estate staff
Cromarty Firth Fishery Trust Meeting	Board and Staff discussion on trust priorities
Peffery Catchment Project	Meeting to discuss restoration of Peffery Catchment
SSE/ CFFB bi-Annual meeting	liaison meeting between SSE and the fishery board
SFCC Training meeting	To discuss provision of electrofishing training via Scottish Fisheries Coordination Centre
SISI Steering Group meeting	To discuss successful NRF funding bid and development of project
FMS Management plan workshop	Drop in session to structure plan
Institute for Biodiversity and Freshwater Conservation - Genetics project meeting	To assess feasibility of a trust led project on the Meig for genetic assessment of the stock
Strathconon/Corriefeol fish pass meeting	Meeting with estate staff to discuss the logistics of removing rocks from the mouth of the fish pass
SFCC conference Pitlochry	Two-day meeting for Board and Trust biologists

Proposed programme of works for 2023

School visits, education and outreach, Junior angling development

Orrin Gravel reintroduction

Day vs night smolt release trial

Allt Graad monitoring (RWE N-power)

Fish eating bird counts and licence application

River Peffery post-construction monitoring

Riparian tree planting development (Conon Connect)

Strathrory wind farm post-construction monitoring

National Electrofishing Programme for Scotland (prov.)

Logie (Glen Ord distillery) Burn monitoring

Strathconon (Meig) baseline data acquisition

Riparian works Strathrannoch, Orrinside, Upper Meig

SISI project plant and mink control

Peffery unnamed burn fish rescue

SFCC electrofishing training provision

SFCC Smolt capture training event

FMS conference – River restoration at scale