

## **AFT Biologist's Report – April 2020**

Argyll Fisheries Trust undertook a range of activities in 2019-20 which include fisheries and government resources projects and a small number of commercial contracts that further the aims and objectives of the Trust.

### ***Fisheries Projects***

#### **Carcass replacement / nutrient Study**

This project utilised resources provided by fisheries in the Tulla Water / River Orchy (Awe DRIA), River Fyne / Kinglas Water (Loch Fyne RIA) and the River Creran / R. Ure (Fasnacloich Estate) to assess the potential to improve survival and diversity of young salmon in nutrient-poor catchments. Following the introduction of salmon feed pellets in April 2019 at spawning sites, an assessment of the juvenile fish was carried out in September at both treatment and control sites.

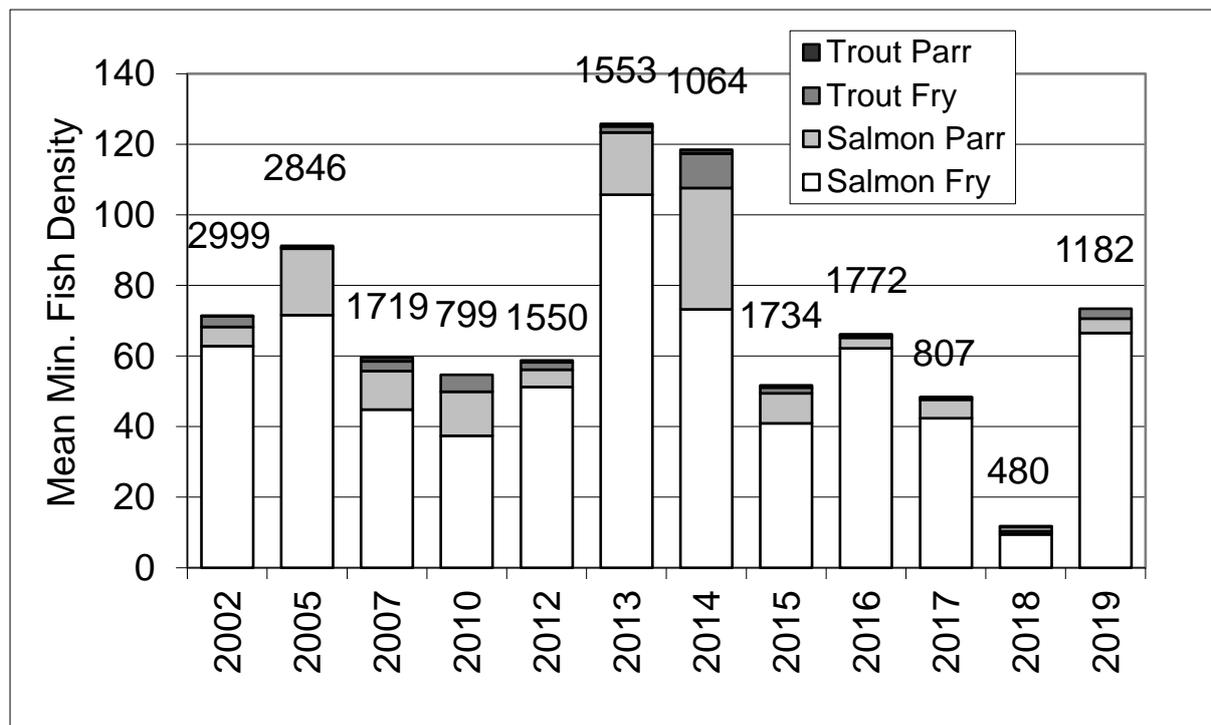


*The upper reaches of many of Argyll's river catchments are nutrient-poor, which limit the production of young fish and smolts*

The results of these follow-up surveys suggest some but limited benefit at treatment sites compared to control sites. The AFT biologist attended a west-coast meeting with Marine Scotland Science (MSS) in February to discuss potential for a wider West Coast project being developed by MSS (in negotiation with SEPA). On this basis, no activity is proposed for this project in 2020, but it is possible that a wider nationally coordinated project may be agreed for 2021.

## Awe Catchment Studies (ADRIA)

An existing AFT fieldwork programme on the River Awe catchment was undertaken in 2019 which included electrofishing and redd count surveys in the River Awe. These surveys have tracked the response of juvenile salmon recruitment following the change in the regulated flow discharge and freshets in 2012. Despite changes in flow, the decline in the number of returning adults has been the biggest influence on the number of juveniles found in surveys. Juvenile fish densities found in the river Awe appear improved over 2017-18 densities but remain lower than historical baseline data for the river.



*The average densities of juvenile fish found in surveys (columns) are consistent with the relative number of returning adult fish counted at the Awe Barrage (figures above columns) in the previous year.*

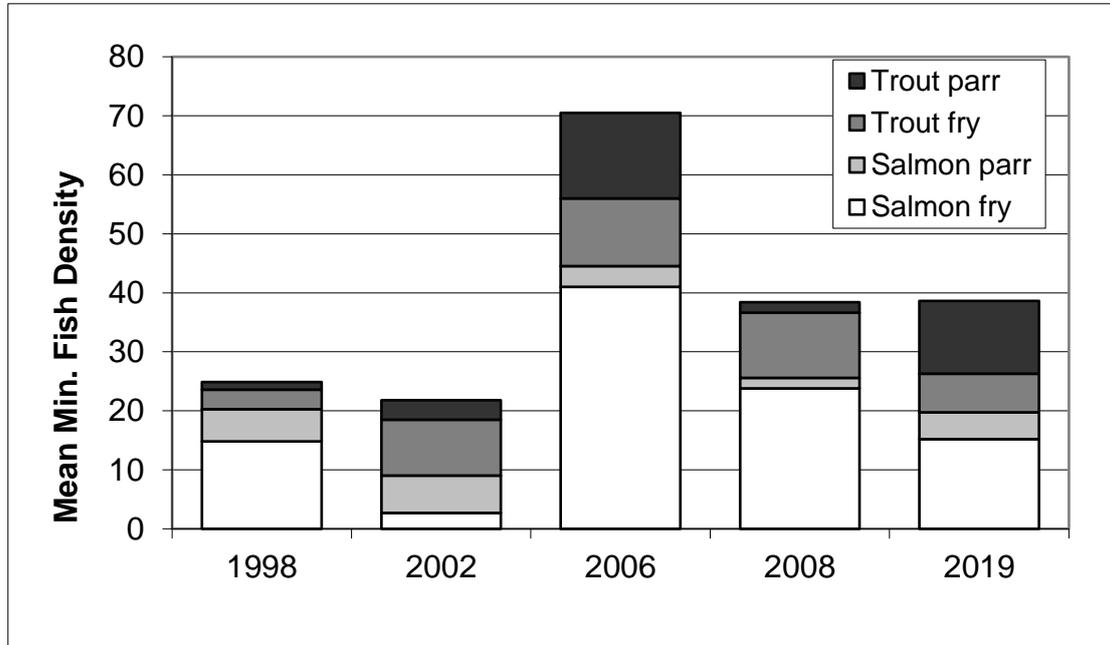
The Trust and the ADRIA Bailiff have also been working to;

- Monitor fish counts to ensure fish can migrate upstream of the Awe Barrage
- Monitor the downstream passage of smolts at the barrage to ensure they can pass in a timely manner
- Rescue smolts that become entrapped from the surge shaft.

In the wake of an escape of 33,000 rainbow trout in Loch Etive, AFT also undertook a literature review on the behaviour of escapee rainbow trout escapes to inform management. AFT Biologist also met with both the fish farmers (Dawnfresh) and Argyll & Bute Council to raise awareness of the effects of escapes on wild fish in the River Awe.

## River Ruel Juvenile fish survey and habitat improvement

AFT undertook a juvenile fish survey of the River Ruel in the summer of 2019 which found that average juvenile fish densities appear similar to historical baseline data. Salmon fry densities were lower than those found in 2006 and 2008, similar to that found in 1998 and higher than that found in 2002.



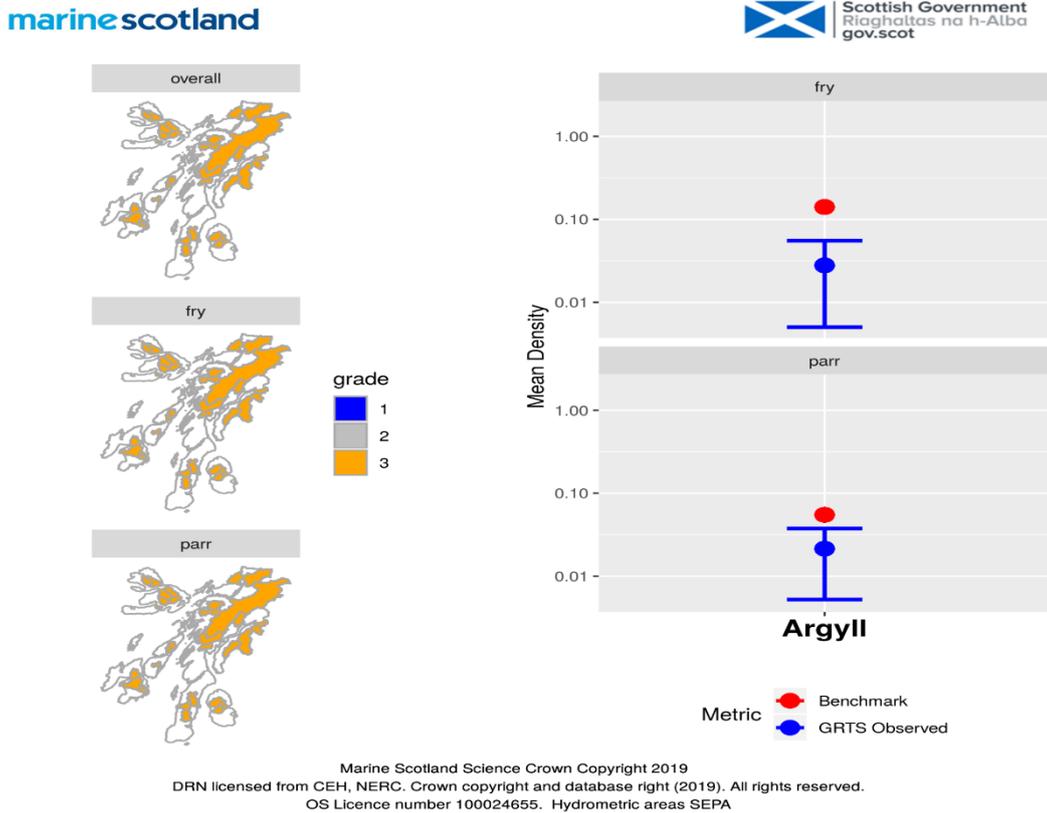
Utilising funds from Scottish & Southern Energy PLC, Ruel RIA and Wind Farm Trust, AFT staff and volunteers undertook habitat improvement works in the upper river Ruel. The work introduced Large woody debris (whole trees) into the river to increase the cover for fish, increase scour of riverbed substrates and protecting banks from erosion.



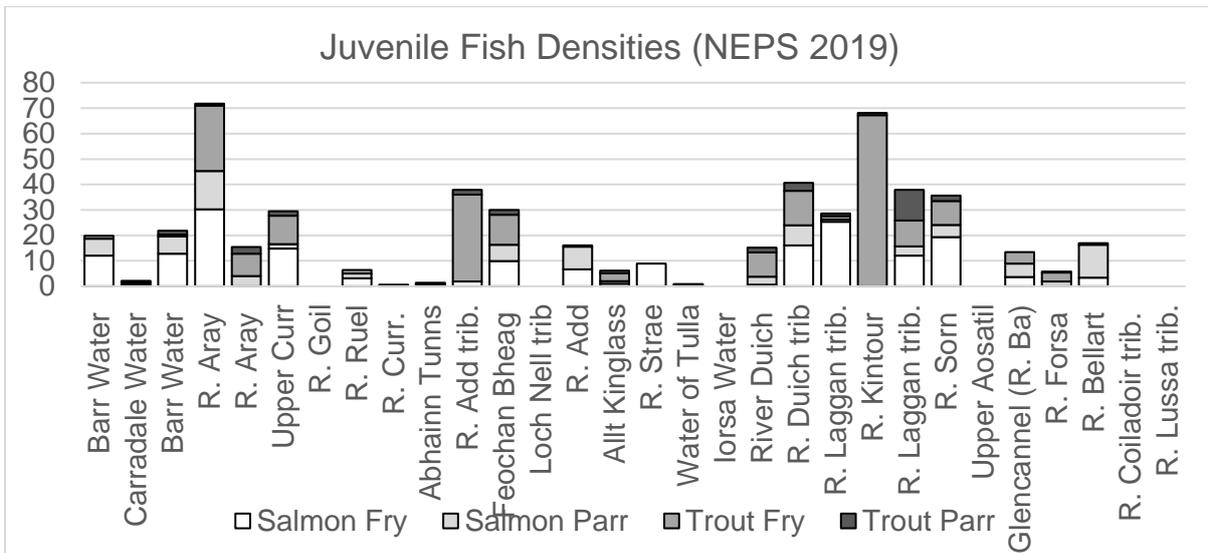
# Government Projects

## MSS National E-fish programme (NEPS) 2019

Following the NEPS 2018 project, Marine Scotland Science (MSS) funded AFT to conduct 30 electrofishing surveys at sites distributed all over Argyll & Islands to support salmon conservation limit process. The results of the 2018 surveys (see below) found that the densities of salmon fry and salmon parr (blue dots) were well below the benchmark levels (red dots) which confirm the region as a grade 3 category.



Where found density of salmon fry and parr were also below benchmark in 2019 surveys.

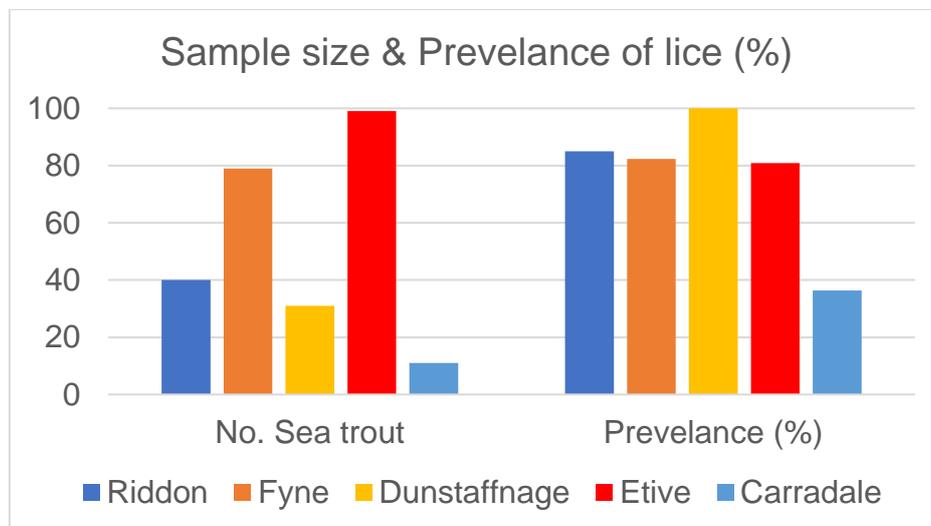


## MSS Mapping Salmon Pressures 2019

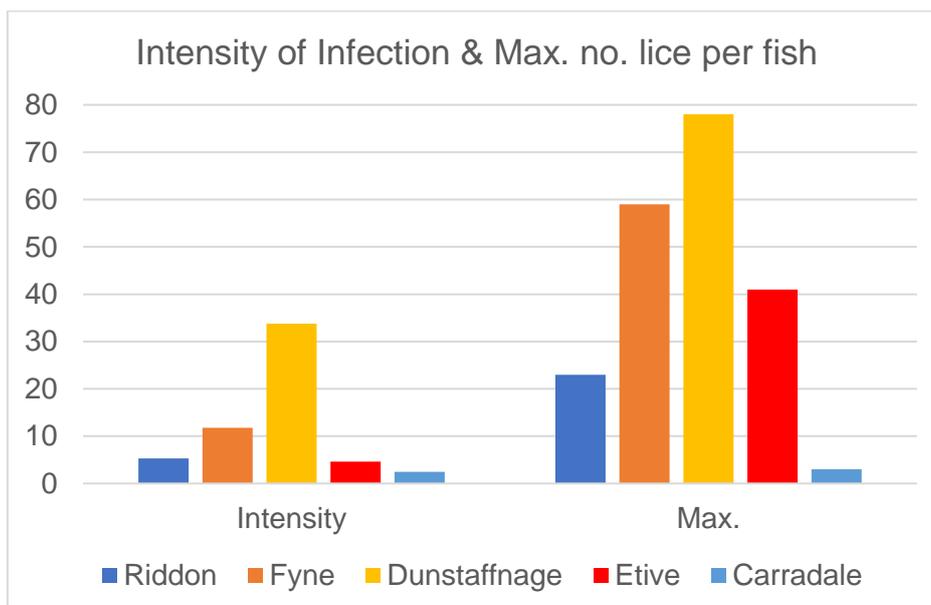
Marine Scotland Science / FMS funding GIS based assessment of pressures acting on salmon populations including habitat / predation / sea lice amongst others. Funding covers Argyll & Eachaig DSFBs, Isle of Mull and other inner Hebridean Islands, except Islay (Laggan & Sorn DSFB). To be completed by end of March 2020.

## MSS Sea trout Netting 2019

Marine Scotland Science / FMS funding for monitoring sea lice burdens of sea trout in May & June at Dunstaffnage / Loch Etive, Loch Fyne, Carradale and Loch Riddon. Sample sizes ranged between 13 trout at Carradale and nearly 100 trout in Loch Etive. Sea lice were found on most fish sampled with the prevalence of lice ranging between less than 40% at Carradale and 100% at Dunstaffnage.



The intensity of infection ranged between less than 10 lice per fish at Carradale, Loch Etive and Loch Riddon and over 10 lice in Loch fine and over 30 lice at Dunstaffnage



### **SNH Biodiversity Challenge Fund (BCF) Mingary Burn 2019-2020**

Scottish Natural Heritage funded project based on three partners; Argyll, Galloway and Kyles Fishery Trusts to improve habitat in FWPM rivers; Argyll project include deer fencing (1.3 Km) planting trees (3.3 Ha), LWD habitat improvement, fish surveys and improve fish passage. Fencing / planting & fish passage works to be paid by AFT and reclaimed from SNH via Kyles FT.

### **AST / MSS / FMS West Coast Salmon smolt Tracking Project 2020-2023**

Atlantic Salmon Trust managed project involving West coast Trusts aims to identify migration routes of smolts. AFT Biologist undergoing training to achieve Home Office Personal license to tag smolts caught in a new Rotary Screw Trap (RST) in River Etive and support MSS staff at River Orchy in the Spring of 2020.

## ***Commercial Contracts***

AFT has completed several commercial contracts in 2019-20;

### **Benmore Estate (River Forsa) Juvenile fish survey 2019**

To inform applications for removal of broodfish / stocking to MSS, Benmore Estate commissioned AFT to undertake a sampling programme (at 30 sites) proposed by MSS. The surveys utilised same methods and analysis of data as NEPS. A report was delivered which can provide a template for future fishery surveys which compare fish densities with national benchmarks.

### **Aquaculture - Environment Monitoring Plans (EMPs)**

To provide environmental data (e-fish in local rivers & sea lice burdens of sea trout) to support EMPs that are required for ASC standards and A&BC planning permission related to biomass increases. AFT biologist undertaking a review of sea trout lice burdens and feedback mechanism to fish farm management (Tarranger et. Al. 2012). EMPs Monitoring agreed with Mowi & Kames for Carradale and Sound of Shuna EMPs in 2020-21

AFT Biologist time invested in development of EMPs with Scottish Sea Farms (Loch Linnhe), Dawnfresh (Loch Etive & Loch Awe) & Scottish Salmon Company (Loch Fyne). This time may be claimed against funds currently held by AFT (reducing time debt).

### **Freshwater Habitat Improvement**

AFT Biologist is supporting a riparian fencing / planting / green revetment project on the River Goil. Project is run by the Lochgoilhead Community which include AFT time. Habitat work on the River Ruel is planned for Spring 2020. The work is funded by SSE, Ruel RIA and Wind Farm Trust.