



Salmon Recolonising the Gotter Water, Inverclyde, 2020

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The first salmon (right) recorded upstream of the weir at Quarrier's Village in over 120 years

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1. INTRODUCTION

The Clyde River Foundation (CRF) has been monitoring fish populations in the Gotter Water in Inverclyde since 2002. Upstream access for pre-spawning adult fish was prevented by a redundant weir at Quarrier's Village (NGR 236590 666892) for some 120 years. Remediation works to make the weir passable to salmon were carried out in summer/autumn 2019.

Adult salmon were seen ascending the fish pass before the construction work was completed (Figures 1 and 2) and, to assess the extent of successful spawning and recolonisation across the Gottar Water system, the distribution of young-of-the-year (0+) fish was assessed during an electrofishing survey in June 2020.



Figure 1: Adult salmon attempting to ascend the fish pass on 6 December 2019 (still from a video taken by John Blair, Bridge of Weir River Angling Club)



Scottish Environment Protection Agency (SEPA)

20 December 2019 · 🌐

We completed the installation of a fish pass at Gottar Water, in Quarriers Village. This pass will open up 9km of high-quality habitat to b... See more



Figure 2: SEPA Tweet announcing the completion of the fish pass works

2. METHODS

Experienced electrofishing operatives from the CRF, accompanied by representatives of Bridge of Weir River Angling Club, surveyed one site immediately below and one site immediately above the barrier on 16 June 2020, and six sites further upstream on 22 June 2020 (Figure 2). Sampling sites were deliberately biased towards favourable 0+ salmon habitat.

Electric fishing was carried out using an Electracatch WFC-11 backpack (fishing setting 200V smoothed DC). When captured, fish were anaesthetised in a dilute solution of 2-phenoxyethanol, identified and their fork length measured to the nearest mm on a lengthing board. Where appropriate, the fish were photographed before being allowed to recover in natal water and returned to the river.

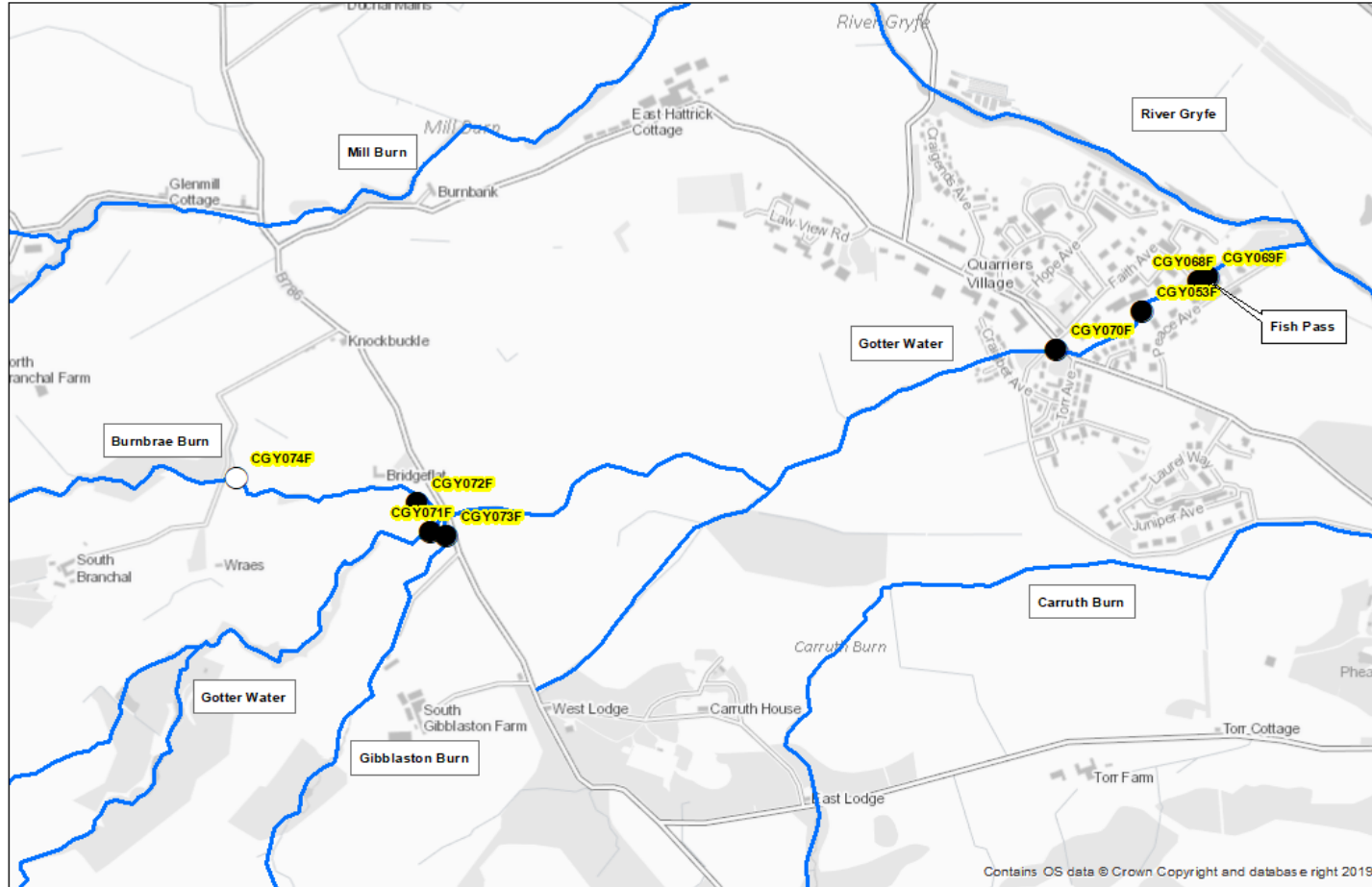
Each site was fished once to generate an estimate of the minimum salmon population density there.

3. RESULTS

Two year-classes of salmon (0+ and 1++) were found downstream of the fish pass at Site CGY069F but only 0+ fish were caught upstream of it (Figure 3). Salmon were caught at all sites fished apart from the furthest upstream (CGY074F) on the Burnbrae Burn.

A total of 115 salmon were caught among the eight sites, 65 upstream of the fish pass. The standardised population densities are shown on Figure 4. Above the fish pass, 0+ salmon densities ranged from 0 and 40 per 100 square metres of wetted area.

This survey has confirmed that salmon have recolonised 1,894m of the Gotter water system since the fish pass was completed in December 2019.



Legend

0+ Salmon

- Not Recorded
- Present
- River Gryfe and tributaries

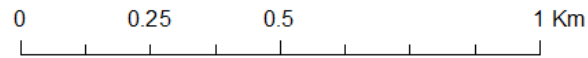


Figure 3: Distribution of salmon in the Gotter Water system, June 2020

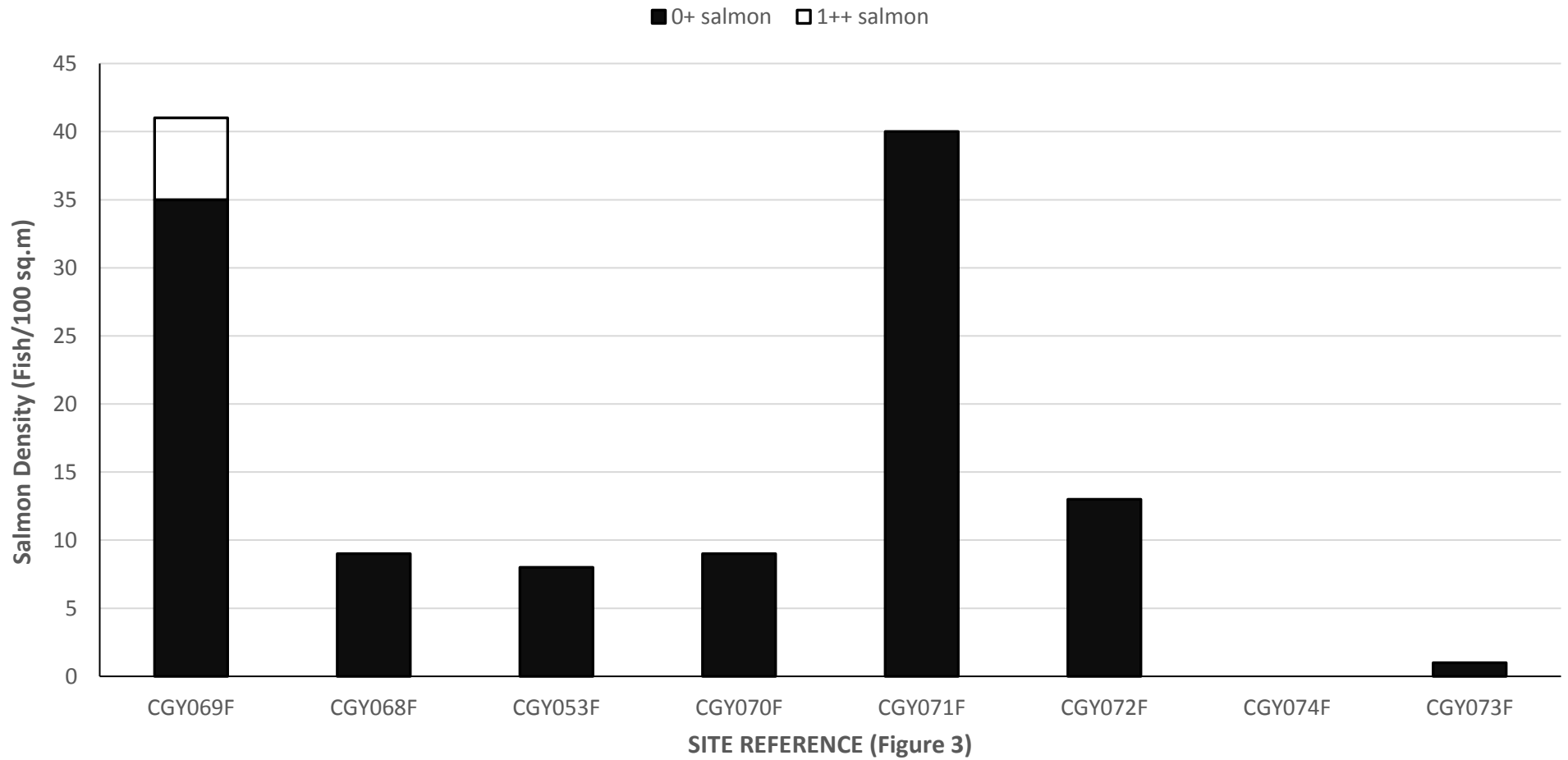


Figure 4: Densities of juvenile salmon in the Gotter Water system, June 2020



Figure 5: 0+ (bottom) and 1++ juvenile salmon from downstream of the weir (Site CGY069F)



Figure 6: 0+ salmon (top left and centre) and 0+trout from upstream of the weir (Site CGY070F)

4. DISCUSSION

Following mitigation work, salmon were detected in the Gotter Water upstream of the weir in Quarrier's Village for the first time in 120 years. Only young-of-the-year fish were caught, confirming (in accordance with previous CRF survey work) that the weir had been a complete barrier to salmon passage previously.

The salmon were present at generally low densities, possibly indicating a relatively small number of spawning adults in this first year. Fish densities and population demography will be monitored by the CRF as part of its routine survey programme from 2020 onwards. In 2021, we would expect to find two year-classes of juvenile salmon above the weir, and probably higher densities of 0+ fish as the access will be in place for the entire duration of the 2020 spawning run.

The salmon were spread throughout much of the accessible river length; the Gotter has a small and simple catchment, which has only two significant tributaries. We estimate that there are probably only a further 500m of the main Gotter Water above Site CGY071F accessible to adult fish (up to Gotter Linn) and that the Gibblaston Burn may be too small for significant production (only a single 0+ salmon was caught this year). We are not clear whether there is a barrier upstream of Site CGY072F on the Burnbrae Burn and the CRF will carry out further habitat and electrofishing surveys to elucidate the fine-scale distribution of salmon in these areas. The 1,894m confirmed this year has added approximately 1% to the known river length in the Clyde catchment recolonised by salmon since 1983.

5. CONCLUSIONS

- 5.1 The Quarrier's Village fish pass has allowed Atlantic salmon to access almost 2km of newly available habitat to date;
- 5.2 Only 0+ fish were caught in this survey; they were widespread but at generally low densities. There was no evidence of previous access upstream of the fish pass; and
- 5.3 Further surveys are required to elucidate the extent of potentially available habitat for salmon production; to measure future breeding success and (using previous CRF data as a baseline) the interaction between salmon and trout in the Gotter Water system.

6. ACKNOWLEDGEMENTS

We thank the Bridge of Weir River Avon Angling Club for its local knowledge and for accompanying us during the two surveys.