



**SKYE &
LOCHALSH
RIVERS
TRUST**

Annual Report 2022

CHAIR'S REPORT

Following the release from lockdown restrictions and in only its second full year of operation this newsletter describes a very active fieldwork season delivered by our small team led by Dr Isabel Moore. In the face of continuing declines in our salmon and sea trout populations much of our activity continues to be focussed on gathering local data from our rivers and estuaries to address two main questions: what is productivity of the river habitats of these fish and how can these be improved and what areas of the estuarine and coastal habitats do they occupy whilst at sea? Increasingly in discussion with policy makers, not least in the area of aquaculture planning, these are key issues which need to be addressed. Delivering independent Environmental Monitoring, particularly of sea lice infestations in wild fish populations adjacent to fish farms, remains a major part of this work. Throughout Western Scotland Aquaculture Companies are obliged to support such work. Realistically and in the absence of substantial central government funding it is difficult to see how such large scale, real – time monitoring of affected rivers might be achieved. The data gathered from this work is shared with industry, planning authorities and through Fishery Management Scotland to policy makers.

In the post–Covid landscape seeking funding for our monitoring and research activities is challenging and the Trust is very grateful to the supporters and volunteers who have helped us in 2022.



An early start for an electrofishing session on the river Sligachan

FIELDWORK

Once again, SLRT has had a very busy fieldwork season despite the temperamental weather! Much of the work involved electrofishing surveys, and monitoring using fyke and seine netting methods.



Hayley Wolcott and Charlotte Small taking notes during an electrofishing session

I. ELECTROFISHING

Populations of juvenile salmon and trout can be monitored using electrofishing surveys. A total of 36 sites across 10 different river catchments were sampled during August and early September 2022. The monitoring of these populations is crucial in providing a view on the health of juvenile salmonid populations within our local area.



Healthy salmon parr sampled during an electrofishing session



Salmon and trout fry and parr, can you tell the difference between the two species?

Similar to the 2021 season, it was noted that there was a substantial population of European eel (*Anguilla anguilla*), a critically endangered and protected species. Individuals from a variety of life

stages were found across our sampling area; from glass eels that would have entered the river systems recently, to silver eels that would be mature and ready to begin their migration back to the Sargasso Sea. Along with freshwater pearl mussels (*Margaritifera margaritifera*), European eels are a species of the highest conservation value. SLRT hopes to undertake further survey work in the future in order to protect these species.



A collection of large elver eels



A large silver eel, the silver colour indicates that it is ready to migrate back to the marine environment

As well as trout, salmon and eel, one of the most commonly observed species whilst electrofishing certain catchments was the common minnow (*Phoxinus phoxinus*). The minnow is a small, non-native, shoaling fish that can be found across several catchments across Skye.



Isabel Moore and Charlotte Small using the electrofishing unit during a survey

II. SMOLT RUN

In April and May SLRT monitored the annual migration of young salmonids as they leave their natal river and head for the marine environment. The main river that was monitored was the Snizort, where fyke nets were deployed in order to catch the smolts on their journey downstream towards the sea. SLRT worked closely with the Ghillie who manages the Snizort catchment, in order to maximise our efforts at monitoring this event.

Whilst electrofishing analyses important juvenile populations, monitoring the smolt run provides further indication of the survival rate of fish within the freshwater environment, and gives a more accurate view of the population that leaves the river.



Isabel Moore and Charlotte Small setting fyke nets to monitor any smolts exiting the river system

III. LICE MONITORING

Like many Fisheries Trusts along the west coast of Scotland, SLRT is heavily involved in Environmental Monitoring Plans (EMPs) adjacent to the fish farms in our local area. The aim of this is to monitor the affect that the industry may be having on the wild fish populations in the vicinity of the farms.



Adult sea trout caught during seine netting; can you spot where a heron has tried to take a bite?

Every year the SLRT samples sea trout populations in several estuaries around Skye, Lochalsh and the Small Isles. The purpose of this sampling is to monitor parasitic sea lice. In order to successfully catch these fish, two different methods area used; fyke nets which are deployed at the mouth of the river, or seine netting the estuary itself. Both methods enable us to catch a population of fish and

sample them for lice which, over time provides a relative indication of local lice infestation. Fyke nets were deployed in 5 different river mouths, and seine netting was conducted in 4 sea lochs.



A successful seine netting session in Loch Pooltiel

As fyke nets are deployed at the boundary between fresh and salt water, there was a wide variety of non-salmonid species that were observed; 3 spined stickleback (*Gasterosteus aculeatus*), juvenile flatfish, and the occasional sea bass (*Dicentrarchus labrax*) were all identified during lice monitoring, each specimen was counted and released.



Gorgeous sea trout caught during a seine netting session; he was so large we had to extend our measuring board!

Seine netting was conducted on several occasions in 4 different sea lochs across Skye and Lochalsh throughout the summer months. The aim was to catch adult salmonids that were entering back into the river systems in order to remove lice from their bodies, as sea lice cannot survive in the freshwater environment.



Sea trout sampled during a seine netting session

Whilst it is not possible to draw meaningful conclusions from a single fieldwork season, compared to 2021 river levels were much higher during 2022 resulting in a lower estuarine salinity. This may account for the significantly lower lice burdens that were observed on wild salmonids.

A further significant challenge that SLRT faced this year was catching the target number of wild salmonids. Using the same techniques and similar effort to previous years, the overall number of sea trout with a weight above 1lb caught in 2022 was much lower, suggesting that populations of wild fish were significantly lower than they were in 2021. This could be noticed both on Skye and on the neighbouring mainland rivers. Again, whilst it is not possible to draw meaningful conclusions from a comparison of two years of data, this is a matter of concern.

More optimistically, within the freshwater environment SLRT's electrofishing monitoring across Skye, Lochalsh and the Small Isles suggests that there has been no significant change in juvenile populations observed in the rivers that were researched in the 2022 field season.

IV. TAGGING

The adult sea trout tagging project that was started in 2021 continued this year. SLRT worked closely with Zoological Society of London (ZSL) to tag a population of adult fish that were caught in lochs Snizort and Greshornish throughout the summer months. In 2022, SLRT introduced a new capture method in order to sample wild sea trout populations. A brand new coastal fyke net was placed in both Lochs Greshornish and Snizort. This allowed SLRT to catch a larger number of fish at a time, increasing the chances of coming across a taggable fish. Other species identified during this course

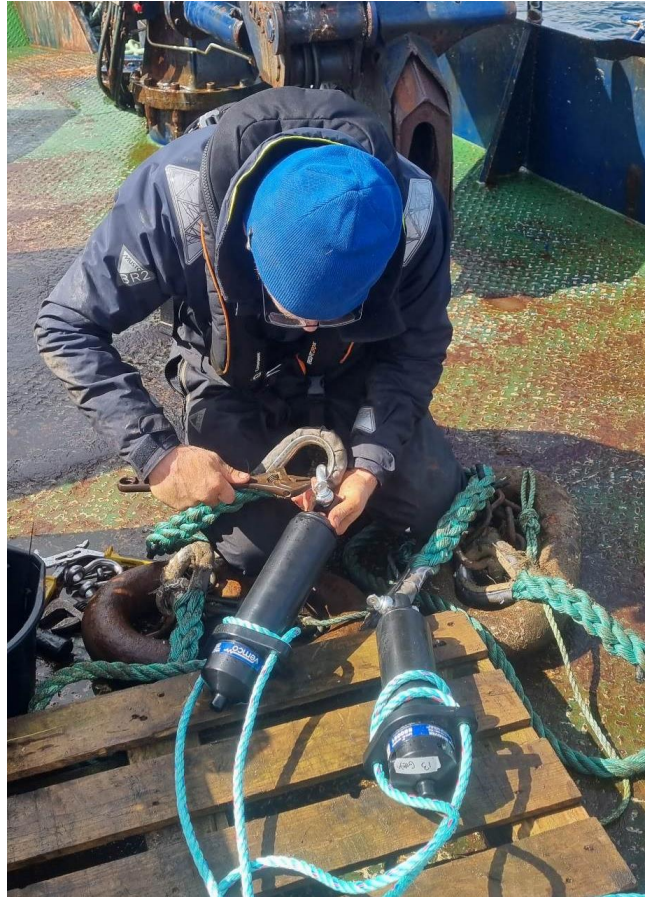
of sampling were grey mullet (*Mugil cephalus*), various species of wrasse such as ballan and corkwing, moon jellyfish (*Aurelia aurita*), and brown shrimp (*Crangon crangon*).



Red mullet (top left), butterfish (top right), corkwing wrasse (bottom left) and ballan wrasse (bottom right) caught during coastal fyke monitoring

The project aims to study the migratory patterns of adult sea trout after they have left their natal rivers and venture out into the marine environment. This in turn will help us to identify areas where the fish spend their time. Over 50 acoustic receivers were deployed in 2021; these receivers were located across both lochs Snizort and Greshornish, with some also being placed in the river Snizort and other smaller rivers. In 2022, the receivers were briefly removed in order to download the data that had been collected, as well as change the batteries so that more data can be collected.

In 2023, SLRT hopes to analyse the data that has been collected and highlight important and sensitive areas that are crucial for sea trout survival.



Dr Adam Piper reattaching a receiver to its stand, ready to be redeployed

HERRING

This year, SLRT has been involved in an exciting project partnered with Edinburgh Napier University along with a network of volunteers and fisheries trusts along the west coast of Scotland. The West of Scotland Herring Hunt (WOSHH) aims to work closely with communities and organisations on the west coast of Scotland in order to create a bank of information about all things herring!

Historically, Atlantic herring provided an important resource for Scotland, with the fisheries creating jobs for thousands of individuals and bringing income to coastal settlements and creating an affordable food that could be cured and stored for several months. In addition, the baitfish biomass arising from herring spawning areas is thought to be a significant food source for coastal sea trout populations. The project aims to identify areas of seabed that are used during spawning, with a view to future restoration of herring populations.

SLRT aims to offer educational sessions in 2023, aimed at pupils in local schools across Skye and Lochalsh, in order to teach them about herring and highlight the importance of the restoration of this species, and the conservation of habitat that is crucial to the survival of the species.

EDUCATION

In Early 2022, SLRT visited several primary schools in Skye and Lochalsh and delivered an exciting fun-filled presentation on our local species of salmonids; Atlantic salmon (*Salmo salar*) and brown trout (*Salmo trutta*). The students enjoyed learning about the life cycle, migration habits, and conservation of these iconic species.

A small number of schools were lucky enough to take part in our “Sea trout in the classroom” activity. This involved an initial lesson about sea trout, followed by each class getting the opportunity to hatch their own clutch of trout eggs and watch them grow. Tanks were set up in each classroom with a filter, aeration unit, and chiller unit. The tanks were set up in such a way, that they resembled the natural environment as much as possible. Clutches of approximately 50 trout eggs (which were kindly provided by SLRT trustee, Bob Kindness) were added to the tank and left to incubate. It was the students’ responsibility to check the tanks regularly, and to contact us if the temperature changed drastically or if the eggs changed visually, signalling a problem. After approximately two weeks, the eggs hatched out as juvenile trout, also known as alevins. The students loved watching them dart amongst the rocks and rose to the challenge of monitoring the temperature on the tanks and checking the young fish.



Juvenile trout hiding amongst the rocks in their tank. Can you spot them?

After 2-3 weeks, the young fish were returned to their natal river. As this was not the rivers that were local to the schools, unfortunately this meant that the students could not watch as we released their fish. However, instead SLRT took them for an afternoon of kick sampling and electrofishing in the summer, which allowed them to see fish in their natural environment and experience an electrofishing survey first-hand. The students had the opportunity to have some hands-on experience with young salmonids, and even got to see some European eels, as well as invertebrates that the fish would feed on.

SLRT hopes to offer more education sessions in 2023, covering a wide range of topics, such as biosecurity and invasive species, herring, and salmonids.

SISI

SLRT has been involved in the Scottish Invasive Species Initiative (SISI) programme throughout the year. This programme involves the monitoring of invasive plants and animals in our local area and involves a network of dedicated volunteers. The main focus of SLRT's partnership with SISI has involved the management of American Mink (*Neovision vision*), an invasive predator that feeds on anything that is big enough to catch; this could include ground-nesting birds, domestic birds such as chickens or ducks, and our iconic local salmonid species. Due to the destructive nature of these animals, it is crucial that this harmful species is managed and kept under control.

Whilst the issue of American mink is considered a significant issue by many on Skye, unfortunately current SISI funding does not extend to the island. SLRT hopes that this changes in the future, and that the Trust can be more involved on the island.

PUBLIC INTERACTION

Alongside a busy season of hands-on fieldwork, SLRT has also made a number of public appearances at conferences and seminars. At the beginning of the 2022 field season, SLRT set up a stall at the freshwater open day which was held at the Ploc in Kyle of Lochalsh. This was a fantastic opportunity for locals to get a hands-on experience with species of fish that are found in our local area, as well as a close-up look at our electrofishing unit. Similarly, we also had a stall at the Struan Gala in the summer, where we introduced various species of invertebrates and discussed how they are crucial to not only the local salmonid populations, but how they are beneficial to our river systems as a whole.



SLRT's stall at the Struan Gala

In October, SLRT presented at the Scottish Freshwater Group at the University of Stirling at a meeting focused on the migration of salmonids. We were able to share preliminary results from the sea trout tagging project that we have been undertaking, partnered with the Zoological Society of London.

In December, SLRT hosted a winter seminar at the Skeabost House Hotel, and discussed preliminary results from the sea trout tagging project as well as results from a similar tagging study conducted in 2017 on sea trout smolts across lochs Snizort and Greshornish. SLRT looks forward to hosting another seminar when the final results from the sea trout tagging project have been analysed, and are excited to share what results are found.

THANKS

We are, as always, incredibly grateful to those who have supported, donated, and volunteered their time to help us achieve such a busy field season. If you are interested in volunteering with our organisation, please contact biologist@slrt.org.uk, call [07852 280 814](tel:07852280814), or visit our website slrt.org.uk for more information.



Gearing up for a seine netting session in Arnisdale



*Processing fish caught during a seine netting session in
loch Slapin*

TRUST CONTACTS

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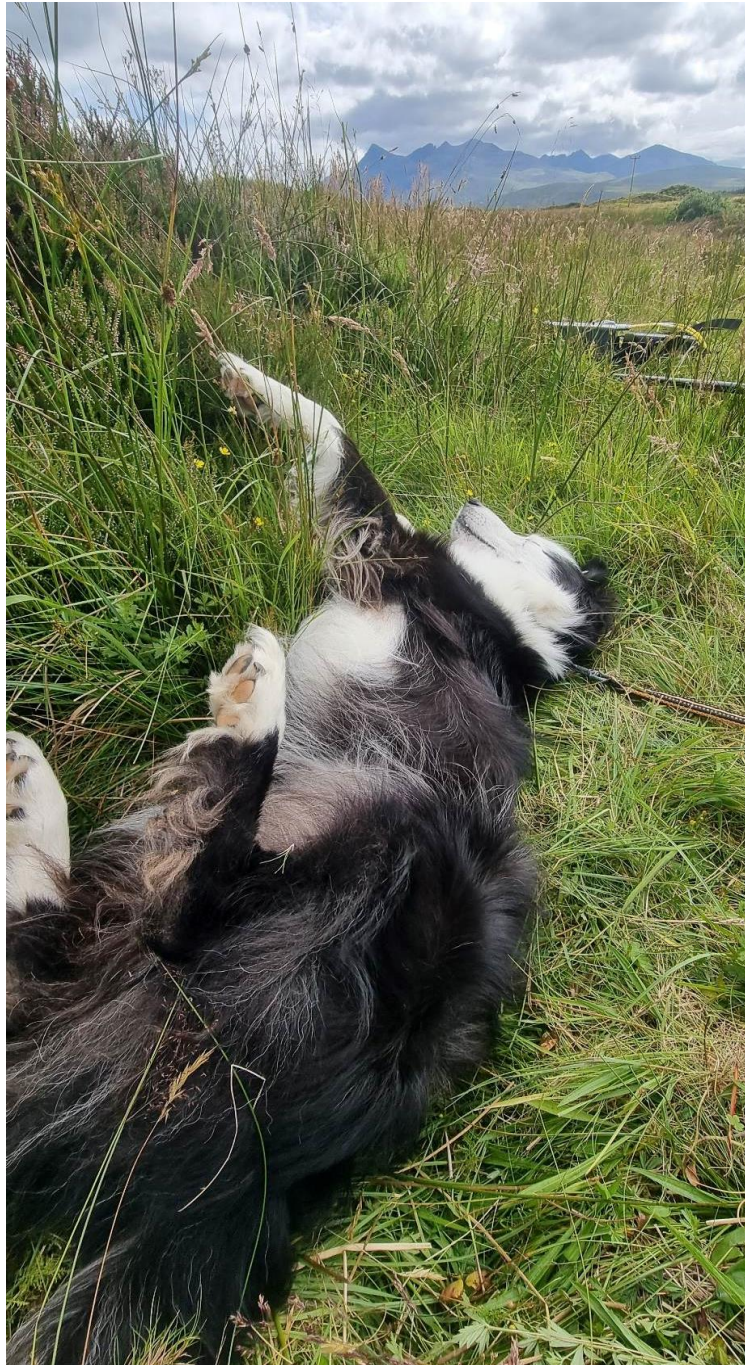
Ian Lindsay, Trust Chair – 01471 844430

Rev. Nigel Pearson, Vice Chair

Charlotte Small, Fieldwork assistant

Hayley Wolcott, Fieldwork assistant

Spot, Official SLRT Morale Booster



Spot taking a well-earned nap during a busy day of fieldwork