West Sutherland Fisheries Trust

Looking down the Laxford (M. MacKenzie)

2025 Annual Review

Contents

THE WEST SUTHERLAND FISHERIES TRUST

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Chairman's Foreword

Another season is fast approaching, and planning for this year's activities is well underway. Hopefully, the weather and water levels will be a little kinder to us this time around!

2024 brought a change in Chairmanship as our long-standing Chairman stepped down after five years of dedicated service to the Trust. I hope to build on his great work and continue moving things forward.

While salmon catch data in West Sutherland suggests our rivers are holding up well, the broader UK picture shows a steady decline. The reasons behind this are complex, but it's clear that our habitat improvement efforts remain as important as ever. Enhancing access to spawning grounds, expanding riparian woodlands, and closely monitoring fish stocks are all crucial in addressing challenges like climate change, aquaculture, and invasive species.

As always, a huge thank you to everyone who makes our work possible — our Trustees and Treasurer for their support and guidance, our dedicated field Volunteers, our valued Partners, Donors, and Members for their support, and, of course, our hardworking Staff for their professionalism and commitment. Your contributions are vital in helping us protect and restore our local fish populations and their environment.

This Annual Review provides a detailed look at our work over the past year and offers insights into the health and behaviour of wild fish in our catchments.

Wishing you all a successful and productive 2025!

Andy Johnson

A summary of 2024

WSFT undertook a range of field work during 2024. In addition, we participated in a number of meetings and outreach events. Further details of the different projects are available in the rest of the document or from the Biologist.

Outreach

Reay Forest School Day;
Reay Forest Open Day;
Attended Moy Country Fair;
Ghillies seminar

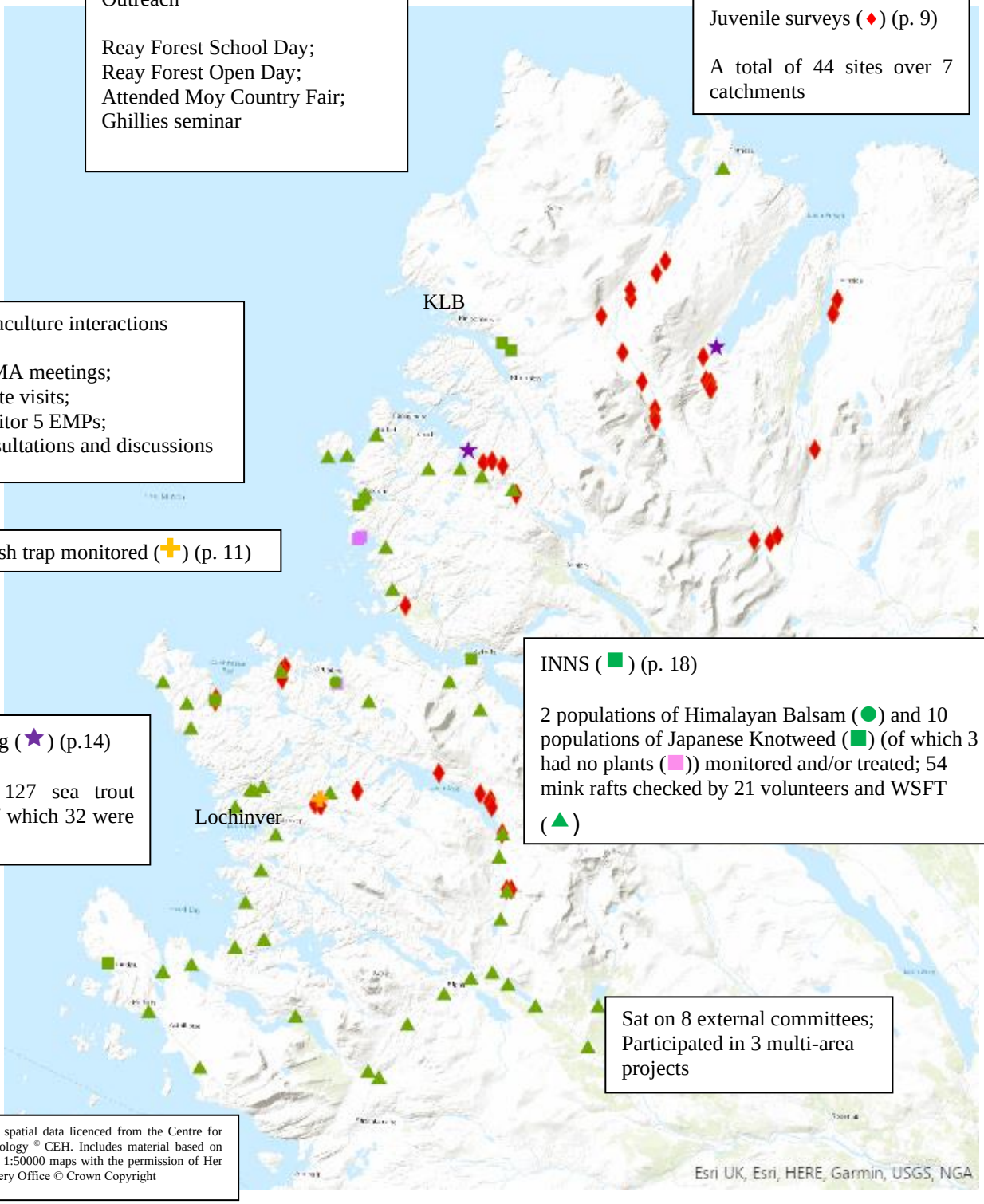
Juvenile surveys (♦) (p. 9)

A total of 44 sites over 7 catchments

Aquaculture interactions

2 AMA meetings;
38 site visits;
Monitor 5 EMPs;
Consultations and discussions

1 Fish trap monitored (✚) (p. 11)



INNS (■) (p. 18)

2 populations of Himalayan Balsam (●) and 10 populations of Japanese Knotweed (■) (of which 3 had no plants (■)) monitored and/or treated; 54 mink rafts checked by 21 volunteers and WSFT (▲)

Sweep netting (★) (p.14)

A total of 127 sea trout examined, of which 32 were tagged

Sat on 8 external committees;
Participated in 3 multi-area projects

Introduction

The **West Sutherland Fisheries Trust** continues to work towards the conservation and restoration of fish populations. Now entering its twenty ninth year, the information database for the Trust area continues to grow and provide useful data for owners, managers and policy makers. In addition, the Trust retains strong links with a variety of organisations and individuals throughout Scotland and looks forward to cementing these links in the coming years. These links enable the Trust to move towards the integration of management within the Trust area.

Within the Trust area we are developing projects and educational opportunities with a variety of local organisations, including Angling Clubs, the Highlife Highland Ranger Service, the school system, estates and community groups. These collaborative projects not only assist the Trust with its work but also further integrate it into the local communities, while taking us into a range of different habitats. It is to be hoped that the Trust will continue to be seen as a valuable resource within the community – both to managers and the general public – providing helpful advice and educational opportunities that can be called upon at any point.

2024 saw our participation in a wide range of activities, many detailed in this report. The weather was mixed, with rain cancelling play on occasion. However, we still managed to complete some electrofishing (see p. 9) and sweep net (see p. 14) surveys, although not as many as we would have liked.

The mink initiative, now part of the Scottish Invasive Species Initiative, continues to operate under the management of the Trust and we are extremely grateful to all our volunteers for making this possible. As part of SISI we have now taken over the management of mink in Wester Ross, with Greg employed as project manager for that area. There have been several sightings reported, particularly in Wester Ross where there have also been multiple captures, and it is important that everyone remains vigilant. The volunteers always rally, increasing efforts following sightings and it is to their credit that we remain a relatively mink free area (see p. 18).

The Trust would like to take this opportunity to thank the many individuals who have given time and effort to assist with the work programme. Without these committed individuals we would not have the range of information and data currently existing and would therefore not be in the present position of offering advice and guidance to the many owners and managers within the area. In addition, much of the restoration work and biosecurity actions currently in progress would be much further behind.

Partnerships

The Trust continues to maintain a close relationship with partner organisations in Fisheries Management Scotland (FMS) and the Scottish Fisheries Co-ordination Centre (SFCC), and national organisations such as the Marine Directorate (MD), Scottish Environmental Protection Agency (SEPA) and Nature Scot (NS). This allows the Trust to access a vast wealth of expertise and information as well as enabling the targeting of research to better further our aims.

The Trust also works closely with the North & West District Salmon Fishery Board, and estates, assisting with the management of the area. By providing advice on local issues, as well as assisting with any statutory consultations that arise, we hope to ensure that the fish and their environment are supported and protected. Amongst others, we have provided advice and guidance on stocking, fish farm applications and the Conservation Limits, as well as habitat improvements within the area.

Project Laxford, a collaborative project between Atlantic Salmon Trust and Reay Forest Estate, started in 2021 (see p. 21). This long-term project hopes to establish an index river, testing the impacts of management actions and linking to a network of similar rivers world-wide. The Trust is pleased to support this project, together with the Marine Directorate, and are looking forward to working with Chris now and in the future.

The Future

The WSFT will continue with its current work, maintaining and developing the many datasets and using the data to inform management decisions. It is hoped that we can enlarge the research programme and enhance the many links currently in existence with individuals and organisations. To be able to do this it is reliant on the generosity, both in terms of time and financial aid, of its many supporters, enabling the Trust to move forward with the development of management policies within the area.

Biosecurity remains an important issue for the Trust, in an area that remains relatively free of invasive non-native species (INNS). Through our association with the Scottish Invasive Species Initiative, a Nature Restoration Fund funded programme of work managed by NS and involving numerous Trusts throughout Scotland, we will continue to work towards the eradication of many of these species (see p.18). In addition, we continue to promote the practice of biosecurity measures throughout the area by residents and visitors alike.

The Trust will continue to assist community groups and land managers with practical fisheries management and advice. It is hoped that restoration programmes, as laid out in the Catchment Management Plans, will be developed and progressed. The Trust is always available for discussion and should be contacted if you have any queries or suggestions.

The Trust would also like to further develop the educational aspects of our remit through talks, demonstrations and small “hands on” projects. As in previous years this is likely to involve the Ranger Service and schools, although it is hoped that other groups and individuals will also access this service. Shona is a Science and Engineering Ambassador and therefore can also be accessed through the STEMpoint network. This has the potential to extend our educational remit, and information about the Trust, beyond the local area.

The emphasis will continue to be the wellbeing of native wild fish in the West Sutherland area and the Trust will represent them where required and defend their interests where it is felt that these are being ignored. The WSFT and its representatives feel that all populations are important, irrespective of size, and that their protection and enhancement are vital to the survival of these magnificent species.

Stack, Arkle & Foinaven (S. Marshall)

Catches within the West Sutherland area

While catch statistics are generally used to determine the trends in salmonid populations, it must be recognised that there are potential inaccuracies and inconsistencies inherent within this method. These include the following:

- The numbers of fish noted within the tables relate only to those fish recorded within the books. If anglers fail to report all or part of their catch then the figures will be an under-estimate of the total.
- Angling effort varies between years and is not recorded. A change in effort, either number of anglers, experience or time spent fishing, will be reflected in changes in the catch statistics.
- Weather and river conditions affect the number of fish within the systems and their catchability. Thus, a low catch in a dry year may not reflect a poor adult run, simply the timing of the run and the ability of the angler to catch fish.

This leads to the view that the relationship between catches and stocks is complex. Catch records do not reflect the number or quality of fish in the system, but rather the angler ability to catch them under the conditions experienced at that time. Catch figures are therefore most valuable when it comes to expressing long-term trends.

2023

The official catch statistics for salmon and sea trout in Scotland have been published (https://data.marine.gov.scot/dataset/salmon-and-sea-trout-fishery-statistics-1952-2023-season-reported-catch-district-and-method) and the data for the West Sutherland area are summarised below (Table 1). These statistics are frequently used to indicate long term trends in populations by region. By extracting the data relevant to the WSFT area we can gain a greater understanding of the situation. The data are given as an amalgamation of several rivers, as previously reported by Marine Scotland (Fig. 1). This is the result of a requirement of the Marine Directorate to mask the catches from individual systems in order to retain the confidential nature of the data.

Table 1 The number of wild fish caught by rod and line, by Fishery district

Fishery Board		Salmon & Grilse	Sea Trout
Hope & Grudie	2023	213	752
	(2022)	(361)	(998)
	5 yr. ave.	*231.2*	*871.4*
Inchard – Kirkaig	2023	371	143
	(2022)	(409)	(258)
	5 yr. ave.	*330.0*	*228.2*

Fig. 1 Map showing the location of the WSFT area and the 2 areas described in the table (pale grey = Hope & Grudie; darker grey = Inchard – Kirkaig)

Total salmon catches within the area showed a decrease from the 2022 catches, being the 7th lowest value since 1952 (Fig. 2). Catches across the area were lower than the 5-year average, except from salmon in the Inchard – Kirkaig area.

The release rate within the area was slightly lower than in 2022, at 96.7%, but still encouraging. There was 97.7% release from the Hope & Grudie area, while 96.2% were released in the southern area. While it is known that released fish can be re-captured on several occasions -thus influencing the suitability of catch returns to estimate adult runs- it is important at this time of low marine survival to release fish in order to increase the spawning stock. Remember, the fish in the freezer or on the table cannot breed!

Sea trout catches within the area also showed a decrease compared to 2022 (Table 1). No sea trout were retained in the Hope & Grudie area, while a total of 11 (7.7%) fish were retained in the Inchard – Kirkaig area. There was an overall total of 98.8% of sea trout released. It was disappointing to see the increase in the number of sea trout kept with the southern area, and it is to be hoped that this reverses in the future.

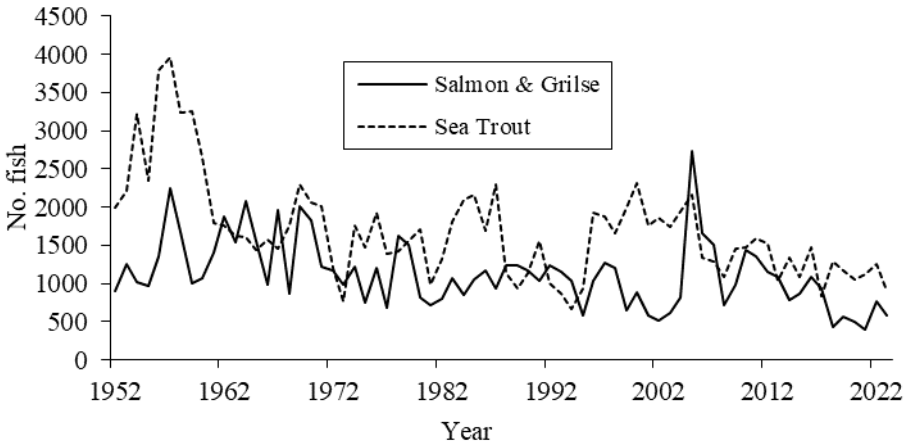


Fig. 2 Rod and line catches within the West Sutherland area, 1952 – 2023

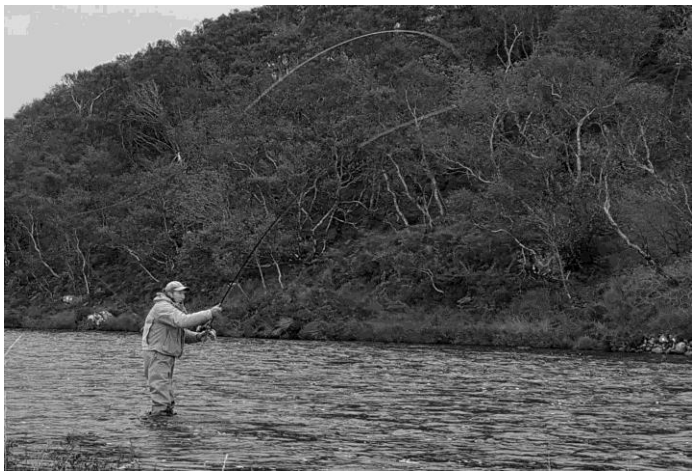
2024

Catch data for the 2024 season are being compiled and will be produced by the Marine Directorate in 2025. However, some information is available from angler logs and fishing books. Reports indicate that catches for the year were relatively good. This may in part, be the result of good flows throughout the season.

Catch and release continues to be an important fisheries management technique within the area and has been adopted by a number of estates. It is to be hoped that this continues to be used, and hopefully increased, by the various estates and their angling clients, adding as it does to efforts throughout the area to improve the situation for fish populations.

The new conservation limits for the area have been produced, with all catchments maintaining the same category (see p. 22). The model has not been altered since 2020, so movement should reflect alterations in catches and a better understanding of the underlying figures within the model. While sea trout are not affected by this legislation, the continuing low levels of catches would suggest that catch and release is of equal importance to this species.

All information on the fish populations within lochs and rivers is important when undertaking fisheries management. Any further information that can be provided will be gratefully received, particularly on the brown trout lochs within the area.



Fishing the Inver (A. Beynon-Jones)

A survey of juvenile abundance

Electrofishing surveys are designed to assess the juvenile populations within a system. The equipment operates by creating an electrical field within the water that at first attracts and subsequently stuns them for a brief period, at which point the fish can be netted out and examined under anaesthetic. During 2024 West Sutherland Fisheries Trust undertook surveys within several of the catchments as either contract surveys or as part of the routine monitoring programme. Due to high flows and other factors out with our control fewer surveys were completed than had been planned.

The average densities of fish within each catchment are summarised (Table 2). This allows comparison between the catchments, although it should be noted that temporal changes in density throughout the summer months and habitat differences between catchments are not considered in this table. The timing of sampling is important, with fish moving within the tributaries as a result of water height and temperature, food availability and size. Thus, sampling after a spate may give a low density due to washout, whilst drought may decrease density as fish move into deeper water to avoid predation or desiccation or may increase density due to concentration into limited habitat in severe cases. Similarly, densities will be greater shortly after hatching, reducing with time as the fish grow and require a larger territory for survival.

Table 2: Average densities of salmonids per catchment surveyed

	Number of fish per 100m^2			
	Salmon Fry	**Salmon Parr**	**Trout Fry**	**Trout Parr**
Hope	7.14	8.01	9.59	7.77
Polla	23.59	10.38	13.81	2.49
Dionard	14.13	7.75	11.00	2.93
Laxford	23.82	6.61	0.76	0.00
Clashnessie	0.00	0.00	5.80	3.94
Oldany	0.00	0.00	6.42	14.35
Inver	21.93	16.14	5.48	2.10
West Sutherland Average	**12.94**	**6.98**	**7.55**	**4.80**

There is a good distribution of salmonids throughout the West Sutherland area, with trout present in every catchment surveyed. Salmon were not present in Clashnessie or Oldany, though in the case of Clashnessie this was expected. Oldany however is a new development and very worrying. The Oldany salmon population has been in decline for years and would appear to have reached a tipping point where it has collapsed entirely.

Salmon and trout fry were found in greater densities than parr in most catchments, as expected. This wasn't the case for salmon in the Hope or trout in the Inver, but this is likely due to the habitats surveyed. Some of the sites in the Hope are known to be inaccessible to salmon, whereas the sites in the Inver were primarily salmon dominated, where trout will be out competed and forced into other areas of the burns.

An assessment of all sites against the SFCC classification scheme demonstrates that 38.45% of all sites support good and excellent densities of salmon fry, with parr classified as good and excellent in 38.45% of sites surveyed. Trout fry were not found in excellent densities in any site in 2024, but were seen in good densities in 33.33% of sites, and 38.45% of sites were found to have good and excellent densities of trout parr.

Discussion

The results show that neither trout nor salmon are dominant overall in 2024. Salmon parr were seen in higher densities than trout parr, which is consistent with data from previous years. Salmon being more populous was expected given the nature and scale of the rivers and burns surveyed, with larger salmon dominated systems targeted due to the challenging weather conditions reducing field days. The results in 2024 could be due to changes in the sites sampled, as well as changes in the overall population dynamics.

Whilst overall instream habitat is favourable for salmonids in the West Sutherland area, it could benefit from strategic planting of broadleaf trees in riparian zones, which would improve cover, food availability, and bankside stability – overall providing great benefits to fish populations.

During the catchment surveys other species were found (Fig. 3); eels being the most widespread of these. Eels were observed in 6 of the 7 catchments fished, but only present in all sites in 3 systems. Eels are known to be present in the Inver, but are seldom caught, likely due to the weir and sluice hindering migration. Minnows were only caught in one site in 2024, in the Oldany system. They are a widespread species, so it was unusual to see so few. One stickleback was caught whilst surveying, that being in the Dionard.

Trout were caught in every surveyed catchment, present in every site in 5 systems. Salmon were not quite as widely distributed, only present in every site in 2 of the 5 catchments they were present in.

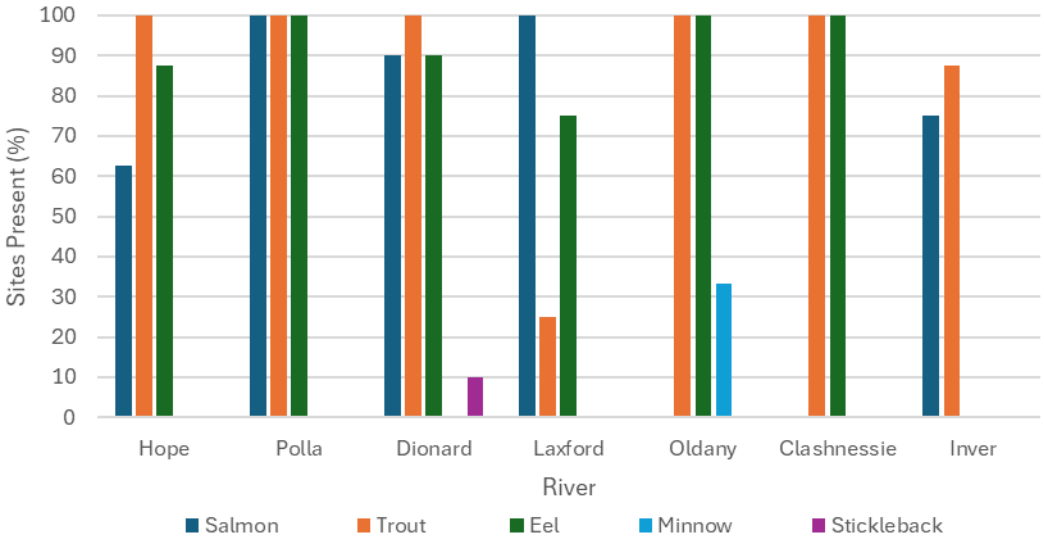


Fig. 3 Species composition and distribution per catchment

Electrofishing site (M. MacKenzie)

Smolt Traps

Counting the number of smolts leaving the river is a good way of determining the composition and health of the salmon and sea trout populations. Additional information can also be gained on the timing of the run and changes in the size composition.

During 2024 we operated a rotary screw trap (RST) within the River Inver from 4.4.24 to 25.5.24. A temperature recorder was placed in the trap, set to record hourly while the trap was installed. The RST operated each day. All fish captured were removed and the species recorded.

There were very few trout taken within the trap, so all analyses were completed on salmon only.

The water temperature increased over the survey period, with a slight decrease to the middle before increasing again (Fig. 4). Salmonids require a temperature of about 7^{o}C before starting to move, and this temperature was exceeded at most points over this period. However, there was a dip in temperature such that the night-time temperature was less than 10 ^{o}C, which coincided with a decrease in the number of fish running.

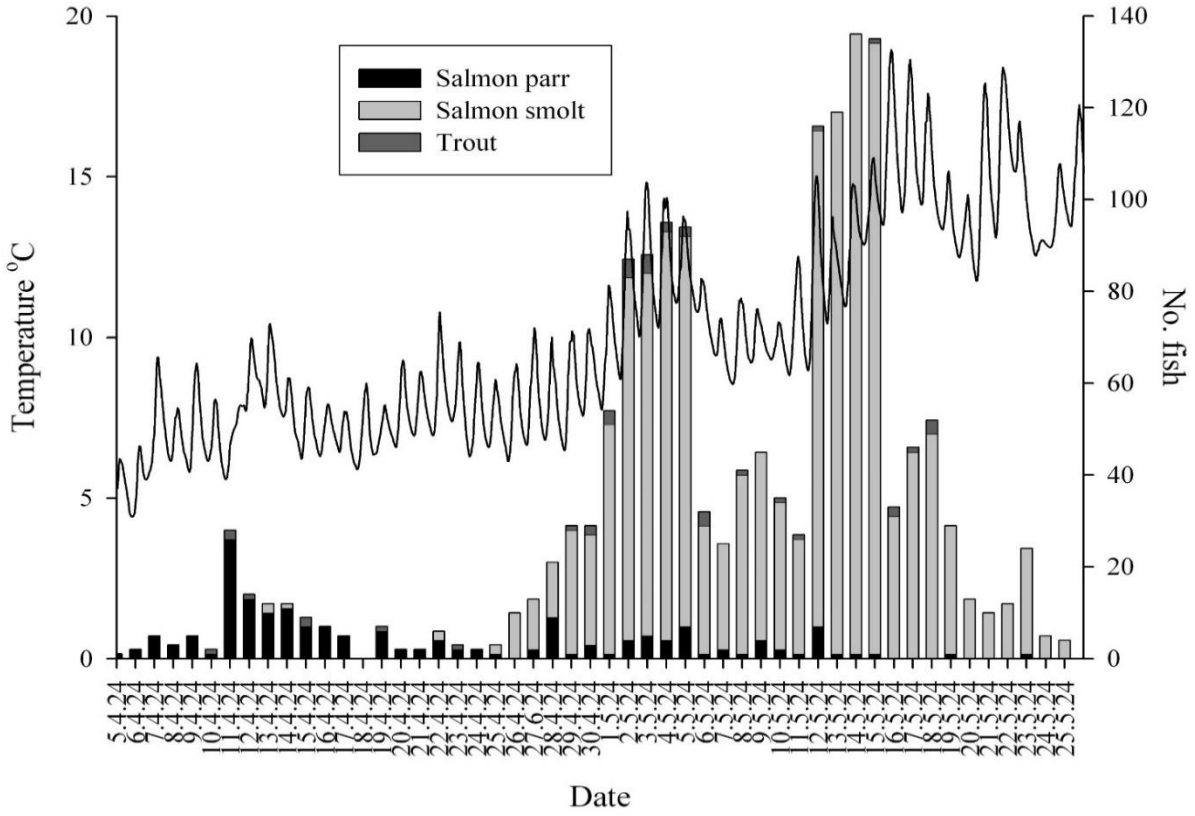
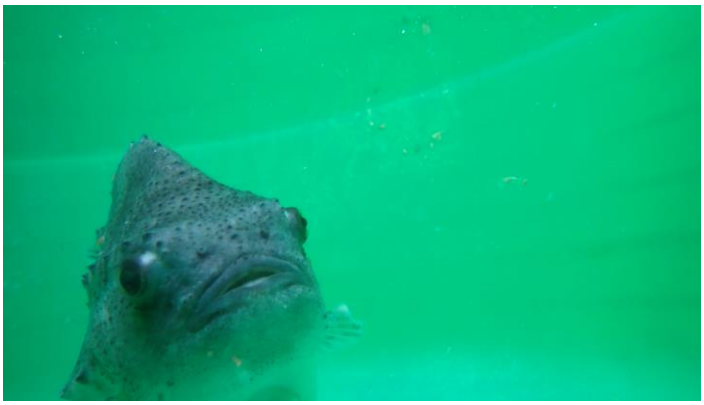


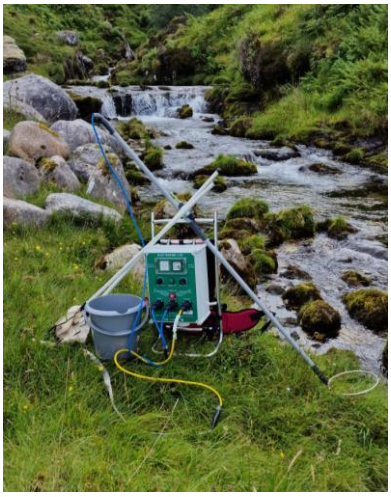
Fig. 4 Showing the temperature regime within the river (line) and no. of fish caught on each day (bar)

Acknowledgements
We would like to thank Professor Colin Adams and SCENE for the loan of the screw trap and all advice provided in its operation and the analysis of the data.

The full report of this project can be obtained by contacting the Biologist.



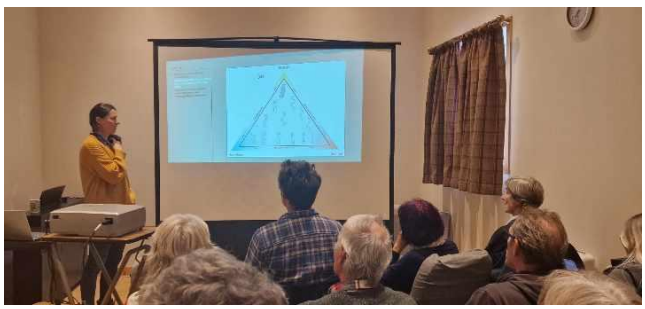
Who are you looking at? (S. Marshall)



Electrofishing kit (M. MacKenzie)

Tagging in the midges (S. Marshall)

A range of salmon (M. MacKenzie)

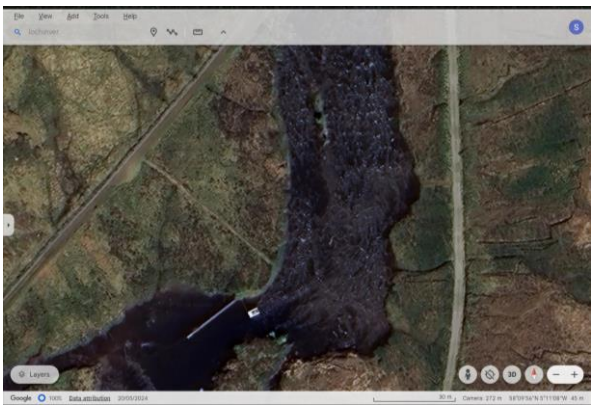


Maja Pepper presents on river restoration (M. MacKenzie)

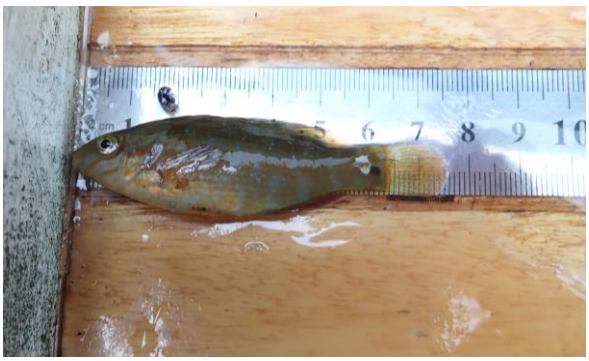
Setting the net (S. Barnes)

John Dory (S. Marshall)

Smiling despite the midges (S. Marshall)



Screw trap in situ (Google Earth)



A rock cook (S. Marshall)

Erosion in action (S. Marshall)

Shore rockling (S. Marshall)

Monitoring of sea trout post-smolts

Introduction

Started in 1997, this project was originally designed to give an indication of the migrations and growth of sea trout within the area. In addition to these data, the numbers of sea lice were also assessed. This has now progressed, such that sea lice counts are the most important part of the project.

Materials & Methods

Two estuaries, Laxford Bay and the Polla estuary were sampled monthly where possible from April to August, at low tide. A total of 127 fish were individually measured and scale samples taken. The fish were also examined for the presence of sea lice, which were counted and staged, and visually examined for gill condition.

Results and Discussion

The fish caught were of varied age and length, reflecting a mixed population structure. The age structure in the estuaries was similar, with a predominant smolt age of 2 years (S2), although there were several S3s also present. In addition, a small number of S1s were observed in the Laxford. A greater range of lengths was observed within the Laxford, with the Polla comprising primarily of smaller fish.

The presence of post-smolts at all sites throughout the year indicates a heavy usage of estuaries by this group, presumably for feeding and shelter.

The by-catch from the netting in each area was as expected from previous years, with few species and low numbers observed. We did, however, have the oddity of a juvenile John dory in the Laxford during July. This solitary fish is usually found at greater depths. We also caught wrasse on 2 separate occasions in the Laxford, and mullet. While mullet have been caught before, wrasse are unusual.

Recaptures

There were 3 recaptures during 2024, all within Laxford Bay. The growth of recaptured trout is shown in Table 4. All were tagged and re-captured in the same location. This pattern is common to the sampling programme over the past 27 years and demonstrates that the majority of sea trout do not stray far from their home rivers. This is further supported by tracking studies in Laxford Bay, showing the migrations within and out of the sea loch
(https://wsft.org.uk/images/pdf/Laxford_sea_trout_tracking.pdf).

Sea Lice Infestations

Sea lice were present to a varying degree in both the Polla and Laxford populations, although at different times. Both estuaries showed a mixture of lice stages. The highest numbers were seen in the Laxford during August. However, the total lice number per sample is dependent on sample size and the use of abundance and intensity data give a better assessment of the situation.

Laxford

Lice were only present in July and August, with abundance increasing over this time. *Caligus* were present in May and June on a small number of fish.

The neighbouring cages were stocked in October 2023. With the exception of the week commencing 1 April, *Lepeophtheirus* numbers remained below 0.1 adult females per fish until week commencing 19 August. *Caligus* were present throughout.

Polla

Lice were present in April and June, with the highest abundance found in April. *Caligus* were also present in April and June only.

Within the neighbouring cages, Sian was harvested out in April, while Kempie remained fallow throughout the year. *Lepeophtheirus* numbers were not recorded in 2024 on veterinary advice, then prior to harvest. However, numbers of adult females were above code of good practice levels at the end of 2023.

Gill condition

Gill disease, primarily Amoebic Gill Disease (AGD) and Proliferative Gill Disease (PGD), are becoming increasingly problematic within the aquaculture industry. However, from papers and discussions with professionals it appears that wild fish are not a significant reservoir for *Paramoeba perurans*. This pathogen seems key in driving gill disease outbreaks in farms, even if other pathogens contribute to PGD, so its absence in wild fish may reduce vulnerability to gill disease. Further, wild fish are at a lower density and can avoid the environmental conditions likely to trigger poor gill health, i.e. plankton blooms and poor water quality. Thus, gill disease is not seen as a concern within wild fish populations although the need for more information is noted. As part of this the decision was taken to visually assess the gills during this survey.

AGD and PGD were identified in both estuaries, at a low level. Within the Polla AGD was identified in 2 fish, while PGD was present in 1. Within the Laxford, 4 fish were identified with AGD and 2 with PGD. In addition, a further 3 were identified as having short and scarred gill filaments. In all cases, bar 1, the levels were recorded as 1 on the 1 – 5 scale used by the neighbouring fish farm. A level of 2 was recorded for AGD on one of the fish in the Laxford.

A risk assessment of the lice numbers present within the wild trout

Taranger, *et al.* (2014) gives a method to assess the increased mortality risk to salmonid populations based on the number of lice present per gram of fish. This is based on physiological effects determined from laboratory experiments taken from literature, and the use of sentinel cages within fjords.

The data are treated differently depending on fish size and give a potential increased risk of mortality to each fish, with increasing risk as the number of lice increase. To determine the likely population effect, the proportion of fish within the population appearing in each band is calculated and a population risk determined. Fig. 5 gives the results by year for each estuary, with the banding indicating whether the risk is low (green), moderate (yellow) or high (red). Within the green zone it can be taken that there is minimal risk to the population, while the yellow and red zones show potentially population altering impacts.

From this, the potential risk of increased mortality in the Laxford, at 4.09, and the Polla, at 0, is low. In the case of the Polla, malfunctioning of the weigh scales in April resulted in those fish not being included within the analysis. However, it is highly likely that the increased risk, while not zero, would still be below 10%.

The Laxford and Polla data continue to show a biennial pattern in risk, reflecting the stage of production within the farm. While sampling within the Kyle of Durness has been less regular over time than the other 2 estuaries and has now ended, there would appear to be no real pattern within the data. However, the peaks in potential risk did appear to follow the Laxford more closely than the Polla. While not significant, this may reflect the tidal flows around the west coast.

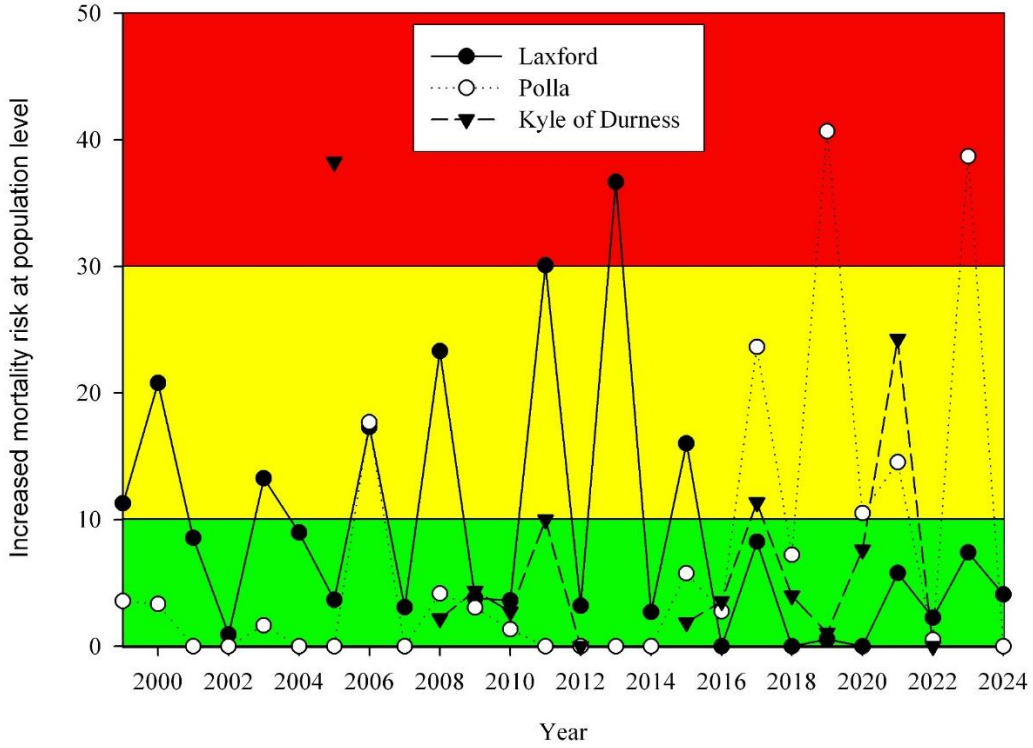


Fig. 5 Showing the increased mortality risk at population level created by sea lice

The full report of this project can be downloaded from the website or obtained by contacting the Biologist. Videos of the sweep netting process are also available to view on the website, Facebook or Youtube (https://www.youtube.com/user/WSFTrust).

Sea Trout Migrations

Since 2021, while undertaking the West Coast Tracking Project we also tagged a mix of sea trout smolts and adults for Project Laxford (see p. 21). The aim of this was to assess the usage of the sea loch by sea trout, and build on the findings of a similar project carried out by the University of Glasgow in 2018 (https://wsft.org.uk/images/pdf/Laxford_sea_trout_tracking.pdf). In 2023, only adult sea trout were tagged, with receivers through the sea loch and in the main river. The data from this survey were analysed by J. Rodgers, AST.

The results from this study largely align with the findings from 2022 study where some adult sea trout were also tagged. The two big differences found between the studies were that the 2023 sea trout seem to use the estuary area less than the 2022 cohort and that the 2023 sea trout also seemed to move out of the system much quicker. The average time spent in the estuary in 2023 was 1.58 days, compared to 27.2 days in 2022. Similarly, only 3 individuals were still being detected in the Laxford system in July 2023, compared to 15 in 2022.

The preliminary results from this study indicate that adult sea trout prefer the Inner part of the sea loch; however, they have the highest average time spent in Loch a'Chadh-Fi. This would indicate that, while most fish don't travel to Loch a'Chadh-Fi, those which do spend most of their time there.

A large proportion of individuals, 14 (28%), journeyed out of the sea loch, for an average of around 13.3 days. Four of the sea trout, which spent some of the longest detected periods outside of the sea loch, came back up the river on their return and went into tributaries upstream of the River Laxford. Three sea trout that left the loch were detected on the north coast, with 2 entering Loch Eriboll and one staying there for 40 days.

Released sea trout (S. Marshall)

Biosecurity Management

The Trust are partners in the Scottish Invasive Species Initiative (SISI), a partnership project covering an area of over 29,500 km^2 and involving 10 fisheries trusts and boards. Phase 1 of the project, funded by the Heritage Lottery Fund and Nature Scot, is now finished but during 2023 grant funding from the Nature Restoration Fund was secured to extend the project and keep up the good work of INNS eradication. Full details of the project can be found at https://www.invasivespecies.scot/.

Awareness Raising

Most awareness raising of Biosecurity was undertaken through social media, although we also gave a talk at the Ghillies Seminar, raised the matter at the District Salmon Fishery Board meeting and promoted it at the Moy Country Fair. Biosecurity includes the use of the simple 'Check, Clean, Dry' method by anglers, walkers and other water users, something that everyone can practice.

Biosecurity is an important issue within Sutherland as there are few non-native species compared to many other areas within the UK. This can make people blasé to the risks posed and the need for care and vigilance. It is important to prevent the spread of non-native species into the area and it is incumbent on all residents and water users to play their part. Gardens, ponds, fishing tackle and water sports equipment are all routes of infection and ones that should be easy to block if care is taken.

American Mink

A network of rafts and tunnels within the Trust area are monitored by volunteers and Trust staff. During 2023, as part of Phase 2, this has been expanded into Wester Ross with the help of Greg Miller. This will hopefully act as a buffer to west Sutherland. There have been a few sightings reported, with several individuals dispatched in Wester Ross – encouraging given the newness of the network.

WSFT is extremely grateful to all our volunteers for their assistance with this project. Without the time and commitment donated by these individuals we would be less able to protect this area against this invasive species. If you would be able to look after a mink raft, then please contact the Biologist and we'll get you set up. Any mink sightings, or potential sightings, should be reported to the Biologist. This information will then be passed on to the relevant volunteers.

Himalayan Balsam and Japanese knotweed

2024 saw the Biologists once again descend on Clashnessie to remove any Balsam plants found within the catchment. Unfortunately, there remains a substantial population within the catchment, although numbers are dropping in some areas. While the starter population remains present then this is likely to keep recurring but is disappointing. This area has been treated since 2010 and it has been good to see the population declining.

Japanese knotweed populations were monitored, with 2 found to have no plants, 4 to have only a couple of very small plants, 1 to have a number of small plants and 1 to be treatable by stem injection. Given the wet and windy year the decision was taken not to spot spray. As a result, only one population was treated.

Plans for 2025

We will continue to promote the importance of biosecurity and the need for everyone to play their part in the prevention of the spread of non-native species. At the same time, we will be monitoring the area for the presence of non-native species and would welcome reports from members of the public.

The mink monitoring network is an important part of the INNS work, and the Trust and our team of volunteers will continue to monitor rafts and respond to sightings. The Trust is a contact point for any new sightings or the collection of carcasses and is happy to respond to any calls.

With the help of Greg, we will continue to extend the mink network within Wester Ross, an integral part of the SISI programme. Volunteer assistance with all of the INNS work would be gratefully received. If you feel that you could help, then please contact the Biologist.

The Check, Clean and Dry Campaign

Principles

- Non-native species could be spread in any water or material. If you are visiting a water body there is a real risk that you could spread harmful organisms unless you follow good biosecurity practice.
- Biosecurity means taking steps to make sure that good hygiene practices are in place to reduce and minimise the risk of spreading invasive non-native species. A good biosecurity routine is always essential, even if invasive non-native species are not always apparent.

Check, Clean, Dry disinfection procedure

- **Check** - All clothing and equipment should be thoroughly inspected and any visible debris (mud, plant or animal matter) should be removed and left at the water body where it was found. Particular attention must be paid to the seams and seals of boots and waders. Any pockets of pooled water should be emptied.
- **Clean** - Equipment should be hosed down or pressure-washed on site. If facilities are not available equipment should be carefully contained, e.g. in plastic bags, until they can be found. Washings should be left at the water body where the equipment was used or contained and not allowed to enter any other watercourse or drainage system (i.e. do not put them down the drain or sink). Where possible, clean equipment should be dipped in disinfectant solution (e.g. Virkon) to kill diseases but note this is unlikely to kill non-native species.
- **Dry** - Thoroughly drying is the best method for disinfecting clothing and equipment. Boots and nets should be hung-up to dry. Equipment should be thoroughly dry for 48 hours before it is used elsewhere. Some non-native species can survive for as many as 15 days in damp conditions and up to 2 days in dry conditions, so the drying process must be thorough.

Further details from: https://secure.fera.defra.gov.uk/nonnativespecies/checkcleandry/

Himalayan balsam amid the garden plants (S. Marshall)

Education

Education forms a large part of our remit and the WSFT are particularly keen to get involved with schools and colleges within the area, as well as giving talks and demonstration to adult groups. This is an important tool in fish conservation and a link between the Trust, the general public, nature groups and the local community. It is a medium whereby scientific research data can be available to those interested in it.

Ghillies Seminar

The Ghillies Seminar provides an opportunity for the Ghillies, managers and interested anglers within the area to meet and discuss what's happening in their rivers as well as question some experts in the fields of fisheries management and salmonid biology. A platform for those working in the field to discuss issues that affects them directly, it is also a two-way process not only moving information to the workers, but also taking suggestions and ideas to the scientists and policy makers.

This year's seminar was a mix of different topics linking some of the work of the Trust and practical actions. Jess Rodgers, AST, started us off with an update on the west coast tracking project. This project ran from 2021 – 2023 and involved acoustically tagging salmon through the estuaries and coastal zone of the west coast. She was then followed by Beth Osborne, talking about Loch Duart, some of the challenges faced and the different solutions explored. After lunch Rory Finlay presented on riparian woodland.

There was keen participation and a genuine desire to address issues particular to this area. The discussion was lively, moving through the talks to plans and advice on translating the information into a practical, local, situation.

School days

In April Reay Forest Estate had a 'school day', introducing local children to the various aspects of life on the estate. We introduced salmon and sea trout, their ecology and life cycles, along with threats and the need for conservation. Despite the wet weather – the rainfall was biblical – and sodden children, everyone seemed to enjoy themselves and showed a good understanding of the various topics.

Public events

On the Saturday after the school day, we were once again back at Reay Forest for a similar public event. Well attended – and much drier! – we were joined by a range of individuals to discuss all things aquatic, Trust and conservation.

Back in June we were lucky enough to have Maja Pepper, from River Restorers, in the area. Maja agreed to give a public talk about river restoration – the whys and hows. Well attended, this interesting talk generated a good discussion.

Other Open Events

The Trust joined our colleagues from the Skye & Lochalsh Rivers Trust in a stall at the Moy Country Fair. A great opportunity to meet and talk to members of the public – as well as partners from Police Scotland and the Spey Catchment Initiative to name but a couple – and promote the area and the work of the Trust. Thanks must go the individuals who assisted on the day - manning the stall, putting up tents and organising the merchandise. These events are good fun to do and help in the promotion of the Trust and its works to the wider public.

Set up for the Reay Forest Open Day (S. Marshall)

Project Laxford

A partnership between Reay Forest Estate and the Atlantic Salmon Trust, with support from the Marine Directorate, Project Laxford is a 10-year project aimed at restoring wild fish populations through habitat improvement. Starting in October 2021, the project has initiated a number of exciting programmes, all with the aim of establishing restoration projects then monitoring the restoration actions and their impacts on the fish and the environment.

There has been a significant amount of work undertaken within the catchment, aimed at getting a better understanding of the status of the catchment and its fish populations and determining the most appropriate restoration plan. To date, this has included the production of a catchment audit as well as the development of a comprehensive monitoring network. The latter will allow the effects of any restoration activities to be assessed.

Fish counter

Placed in the tidal zone, this will give a count of all the fish entering and leaving the river. By counting the smolts out and the adults in we will have a good indication of the size of the run, together with marine survival.

Aris counter in situ (S. *Marshall)*

PIT array and tagging

Passive Integrated Transponder (PIT) tags are similar to the microchips used in dogs. Inserted in the body cavity of the fish, these uniquely coded tags are identified by special receivers, which record the fish identity, date and time. With no battery, these tags continue to operate through the lifetime of the fish and will give information on freshwater movements for both juveniles and adults as well as information on the timing of the run, parr to smolt survival and marine survival of individual animals. During 2024 a further 2000 salmon parr were tagged, bringing the total tagged to date to just over 5400.

Temperature network

Rising temperatures have been an issue for the salmonid populations for several years throughout Scotland, with water temperatures regularly exceeding levels that impact on salmonid growth and survival. The temperature network will help to assess the effects of restoration actions, such as riparian tree planting, on the catchment. Riparian woodland has many beneficial effects on rivers, from bank stabilisation, food supply, shelter and nutrient provision, to reduced water temperatures due to shading.

Environmental DNA (eDNA)

All organisms release genetic material into the water and the use of eDNA allows this to be analysed. Collecting water samples from around the catchment and analysing these for traces of genetic material gives an inventory of the species present and can be used to monitor the effects of restoration activities on invertebrates and fish. eDNA sampling is remote and may identify the presence of rarer individuals within the area, ones not identified from more traditional sampling methods. Further, the method is potentially less labour intensive and destructive.

Riparian woodland

Re-establishing native riparian woodland is key to habitat restoration within the catchment. Aiming to plant up to a million trees near to rivers, burns and streams, this will be supplemented in the long term – perhaps 50 years – by natural regeneration within 3 large restoration enclosures, covering a total area of over 25 km^2. This removal of deer grazing pressure will benefit a wide range of species and habitats including breeding birds, blanket bog, sub-alpine heaths and montane acid grasslands.

For further details on the project visit https://atlanticsalmontrust.org/project-laxford/

Salmon conservation regulations

This policy was introduced during the 2016 season. It implemented a variety of measures, including:

- A ban on the taking of any salmon, by rod or net, before 1 April;
- A ban on fishing out-with estuary limits;
- The classification of rivers based on a model of population estimates, exploitation rates and biological recruitment. (Further information can be found at: http://www.gov.scot/Topics/marine/Salmon-Trout-Coarse/fishreform/licence/status)

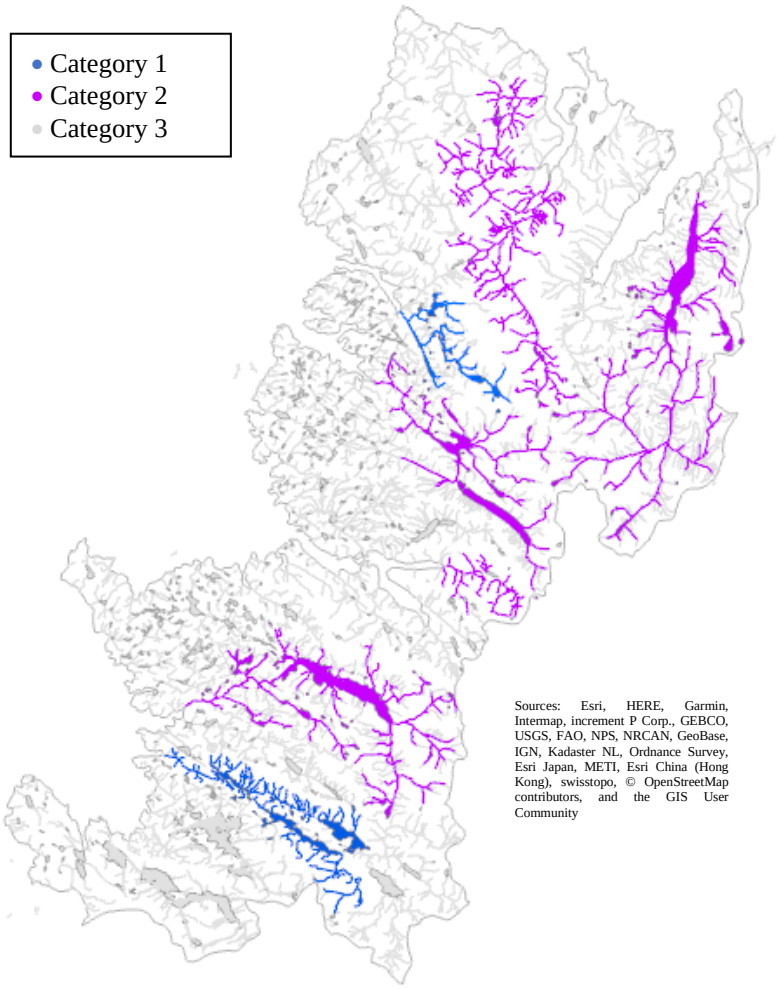
The categories denote the conservation measures required such that, for West Sutherland during 2025:

Category 1 – (Rivers Rhiconich and Kirkaig) where the conservation limit has been met on 4 of the last 5 years, exploitation is sustainable and therefore no additional management action is required.

Category 2 – (Rivers Hope, Grudie, Dionard, Daill, Laxford, Gleann Dubh and Inver) where the conservation limit has been met on 3 out of the past 5 years, meaning that management action is necessary to reduce exploitation. While mandatory catch and release will not be required in the first instance, this will be reviewed annually.

Category 3 – (Rivers Polla, Strath Shinary, Oldshoremore, Duartmore, Polly and Osgaig) where the conservation limit has not been met on 3 out of the past 5 years, meaning that exploitation is unsustainable, and management actions are required to reduce exploitation for 1 year i.e. mandatory catch and release (all methods).

All systems not listed above have insufficient data and therefore will be classed as Category 3.



Acknowledgements

The Trust would not be able to function without the assistance of an army of volunteers, many of whom give up substantial amounts of time to the Trust. Similarly, we would like to acknowledge those who support us financially and without whose help we would not be able to operate. Grateful thanks also for the assistance of the various estates. In particular, sincere thanks must be expressed to Reay Forest Estate and Scourie Estate for their donations of accommodation.

A number of other individuals have assisted the Trust with its work programme, some listed below. Apologies to those not mentioned by name, but our grateful thanks all the same.

Catches and Scale Reading

The WSFT acknowledges the assistance of hotels, estates and anglers in compiling catch records and collecting scale samples.

Monitoring of sea trout post-smolts

This work would not be capable of completion without the assistance of the Reay Forest Estate and Wildland Ltd. Also to Andy, Donald, Keith and Ian for their assistance, together with the staff of Loch Duart Ltd and the Naver Fisheries Board.

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Biosecurity Planning

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SISI Phase 2 is grateful for the funding provided by the Nature Restoration Fund, again managed by Nature Scot.

The following Charitable Trusts, Foundations, Estates and organisations have kindly donated funds or provided grant funding towards the West Sutherland Fisheries Trust. Our sincere thanks to all listed, and to the many individuals who will remain anonymous but have donated time and money to the Trust and its activities. Without all of this support we would not be able to operate.

Trusts & Organisations
Assynt Angling Company Ltd
Atlantic Salmon Trust
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Estates
Reay Forest Estate
Scourie Estate
Wildland Ltd

Businesses
Loch Duart Ltd