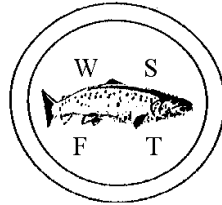


The Third Fishery Management Plan for the area covered by the West Sutherland Fisheries Trust, 2019 – 2023



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This document follows on from Plans produced in 2008 & 2014, covering the period to 2018. As with the preceding Fishery Management Plans, this document has been produced following a wide ranging public consultation involving many of the interests in Sutherland, including proprietors, anglers, Government and non-Government Agencies. It is an advisory document, based on scientific research on the actions required within the area to increase fish numbers. It will therefore remain active, being updated as a result of new research and findings.

1 Introduction

Fish populations in Sutherland are an invaluable renewable resource, with rod fisheries, predominantly salmon and trout, representing an important source of revenue for the local economy. This combines with the fact that the fish species are an important and integral part of the local ecology. The full economic potential and ecological value of the fish populations can only be achieved, and sustained, by careful and sustainable fisheries management supported by all with an interest in the fish and fisheries of Sutherland.

The West Sutherland Fisheries Trust (WSFT) is a charity established in 1996 by proprietors, fish farmers and hoteliers in order to protect and conserve the fish populations within the area. The trust remit, which covers all native fish species within the area, makes it well placed to lead the coordination and delivery of the required sustainable management and scientific actions informing management in the area.

This document follows on from the work undertaken in 2008, which first attempted to detail the actions and information required to improve management of the fisheries within the area. That report represented the conclusions of the work undertaken within the area, including juvenile surveys, habitat assessments, water quality assessment and adult stock assessments and is available from the Trust. The second edition details the work and results from this plan and sets out the range and nature of management actions required to sustain our important fish and fisheries.

This edition follows on from this detailing the work completed and looking at new challenges within the area. The plan has an implementation period of 5 years. The suggested management actions are aimed at achieving the natural potential output of fish within the freshwater habitat. This area, unlike the marine habitat, is largely within the control of the river owners. Suggestions within the marine habitat can be discussed and undertaken with the assistance of other stakeholders.

The area covered by the WSFT extends from the River Hope in the north to Achiltibuie in the south, taking in all river catchments flowing west within this region. This gives an area of approximately 1794.03 km², and contains the catchments for over 150 rivers of varying sizes. There are also innumerable freshwater lochs within this area. Of these, information has been obtained on 35 river catchments, covering the main systems within the area, and an additional 15 lochs within other catchments. Surveys are spread throughout the geographical extent of the area.

It has a typical highland landscape of glacially carved mountains, bordered by a heavily indented coastline, which is skirted by many small islands and rocks. The mountains range up to 998 m in height, including large massifs such as Ben Hope, Foinaven and Ben More Assynt and smaller, iconic hills including Suilven and Stac Pollaidh. Many have steep gradients from a low level. The coast is broken by the deep narrow lochs of Eriboll, Inchar, Laxford and Chàirn Bhàin, together with more gentle inlets and bays. The coastline comprises mainly of cliff, intersected by sizable sandy beaches including Ceana Beinne, Ballnakiel, Sandwood Bay, Oldshoremore, Clashnessie, Achmelvich and Garvie Bay, and estuaries including the sizeable Kyle of Durness.

On the land, Assynt and Eddrachillis alone contain over 1,000 fresh water lochs of a huge variety of depths, shapes and sizes, and this is repeated throughout west Sutherland. The remaining area is primarily mountainous heath bog intersected with numerous streams and rivers. Indeed, Sutherland and Caithness between them house the biggest treeless oceanic blanket bog in Europe, extending to some 2000 km².

2 The Fishery Management Plan, 2019 – 2023

The purpose of this section is to detail the different issues affecting the fish populations and provide recommendations to rectify them. The WSFT will assist in the implementation of the plan, monitor its progress and evaluate its success. Also important to the implementation of the plan is the North & West District Salmon Fishery

Board (N&WDSFB), whose area coincides with that of the WSFT. The DSFB is the statutory body responsible for the management of salmon and sea trout within the area, and covers all migratory rivers.

In general, the rivers of west Sutherland have few anthropogenic features limiting fisheries and fish populations as identified either by WSFT or SEPA for the WFD in the River Basin Management Plan. Of the issues identified, culverts and bridges are the dominant factor impacting on the rivers. This is the result of the low population density, sparse housing, low industrial activity and mountainous terrain which limit the human impact on the area. As such, the main bottlenecks to fish production within the area are natural. Within freshwaters, these are water chemistry, temperature and the flow regime, which, together and in combination, limit the production of invertebrates and growth rates of fish and therefore the natural carrying capacity of the systems. There are also a small number of Hydro-electric developments within the area, which may impact on fish populations.

2.1 Catchment Management Plans

While this Fisheries Management Plan provides recommendations for the management of the west Sutherland area and the myriad catchments within that area, individual catchments can also have specific issues that must be addressed. It is therefore considered important that individual catchment based fishery management plans are produced across the area in order to prioritise local issues and support the implementation of this area based plan.

Over the period from 2000 to the present time WSFT, in conjunction with SNH and the Scottish Government, have to date produced separate Management Plans for 21 catchments within the area (Table 2.1; Fig. 2.1). These list the issues relevant to that catchment and provide recommendations with grid references, where required, to improve access and available habitat together with other management requirements.

The importance of these plans to the individual systems cannot be overstated as they will provide a detail that cannot be given here. It is therefore proposed that the surveys be extended to give coverage of all systems within the area, detailing the presence of blockages and other habitat improvements of benefit to those systems. Any work undertaken as part of these plans is noted under the appropriate headings within this document.

Table 2.1 Catchments for which individual river management plans exist

Catchment	Grid Reference	Catchment	Grid Reference
Hope	NC4761	Bhadaidh Daraich	NC1544
Polla	NC3954	Geisgeil	NC1641
Grudie	NC3562	Duart	NC1736
Strath Shinary	NC2265	Glinne Dubh	NC2833
Loch Innis	NC2255	Gleann Leireag	NC1431
Achriesgill	NC2554	Inver	NC0923
Rhiconich	NC2552	Culag	NC0922
Loch na Thull	NC2350	Kirkaig	NC0719
Laxford	NC2347	Garvie	NC0413
Bad na Baighe	NC2246	Polly	NC0614
Claise na Fearnna	NC2047		

Under the previous plan management plans were produced for Achriesgill, Loch an Thull and Grudie catchments.

- It is recommended that individual plans continue to be produced for the rivers within the area, although flexibility should be maintained. Many of the priority catchments have been completed, but the Dionard remains as a major river still to be surveyed.
- It is recommended that the current plans are progressed accordingly. Care should be taken to ensure that developing issues are also noted and addressed.

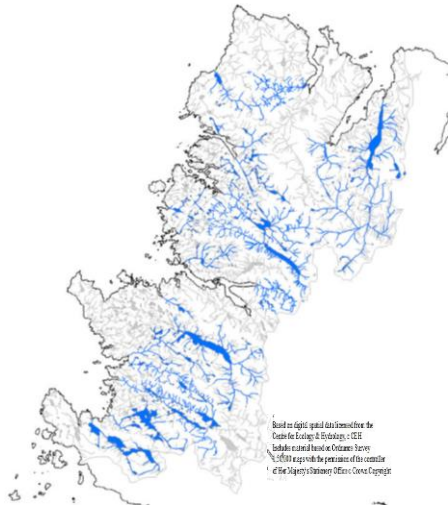


Fig. 2.1 Showing the catchments with existing fisheries management plans

2.2 Barrier removal

The primary issue with regards to increasing the potential of fish stocks within the area is the presence of blockages, many of which have natural causes but are of a non-permanent nature, i.e. peat plugs and vegetation. Their removal makes additional habitat available, however small, and therefore increases the number of fish that have the potential to be present within the system. Several man-made barriers have also been noted within the area and the fish passage issues associated with these should be addressed. In some cases this will be undertaken as a result of the Controlled Activities Regulation (CAR) legislation and will be the responsibility of SEPA as the regulator, although WSFT will work with SEPA to raise the priority of the licence review. For sites not licensed by SEPA it will be necessary to negotiate with proprietors and users in order to reach a solution. Again, WSFT can take an active role in this and can assist with fund raising if required.

Priority within this plan is given to 2 man-made structures within the area. These are: the road culvert in the Bhadaidh Daraich catchment (216500 944300) and the weir at Loch Poll, on the Oldany catchment (210000 931500). The easing of fish passage over these barriers will allow access to approximately 5 km of previously inaccessible habitat. Both come under CAR licence. However, it is important that all barriers are addressed and it should be noted that individual catchments will have different priorities with respect to barrier removal. In some instances these have been detailed in the catchment plans, in others they will be known to the individual proprietors.

Follow up habitat surveys will be used to determine the effects of the operations on the habitat below the structure or blockage removal. In order to determine the direct effect on the fish populations, it is recommended that fully quantitative electrofishing surveys are completed upstream and downstream of the proposed developments, together with invertebrate surveys, prior to work starting. Follow up monitoring should be undertaken for a minimum of 3 years and follow recommendations issued by MSS and SFCC. Other monitoring may be required by the operator as a result of SEPA or SNH regulation.

All information resulting from this monitoring, and the effectiveness or otherwise of the different actions undertaken should be made available to proprietors and other users, together with SNH and SEPA.

Under the previous plan no barriers were removed within the area, although several additional barriers have been identified.

- It is recommended that all barriers within the area are identified. Several barriers have been identified previously during other survey work, including the development of individual river management plans. Additional barriers will be identified during the development of further catchment plans (see 2.1) over the next 5 years.

- It is recommended that all identified barriers to fish movement are removed or altered to enable passage.
- It is recommended that action be undertaken in conjunction with SEPA to raise the priority of culverts within the action tables and ensure they remain ‘fish friendly’.

2.3 Aquaculture

The aquaculture industry is prevalent throughout the west coast of Scotland and occurs in both freshwater and marine areas. There are a variety of species farmed within Scotland, but salmon and shellfish are the only types of aquaculture operating within the West Sutherland area. It occupies a small part of the freshwater area within west Sutherland, with 3 operational hatcheries present and salmon cages in Loch na Thull, although other sites have been operated in the past. Sea sites for salmon aquaculture are also present throughout the area, with a history of escapes from these cages and the subsequent incursion of fish into the river systems.

Shellfish farming also forms an important part of the industry in Sutherland, with mussel lines in many of the sea lochs. In addition, oysters are farmed on a small scale in loch Eriboll and sea urchins have been farmed in Loch Laxford and Eddrachillis Bay. Potential impacts of shellfish aquaculture are unknown, but may include sea bed alteration and reduction in nutrients through filter feeding and defecation. This could reduce feeding opportunities for migratory fish species within the sea lochs.

Most concerns raised about the aquaculture industry in Sutherland have focussed on the salmon cages. These concerns extend to the impact of escapes, pollution and disease from these sites upon wild fish populations, particularly migratory salmonids. In the case of escapes, this relates to the potential dilution of the native genetic pool through intermixing. The risk to wild salmonids from escapes from fish farm cages is variable, and relates to the timing of the escape, with escapes of large, mature salmon in November having a greater potential risk than that of smolts or immature fish within months of their transfer to sea.

Pollution from the cages could also have a large impact, particularly in freshwaters. The increase of nutrients into the system has the potential to alter the ecological status of the water, and therefore the fish populations, and could ultimately lead to an algal bloom. Within the marine system this nitrification is more dilute, although there is still the potential for the altering of the sea bed and the species assemblage within the immediate area.

Similarly, the spread of parasites and disease from the cages to the wild populations, and *vice versa*, has the potential to alter the species composition within the area. Of primary concern is the presence of sea lice and their impact on migrating smolts, particularly sea trout. The potential impacts of sea lice have been extensively monitored within the area under the auspices of Marine Scotland.

While this section has concentrated on the impacts of salmon farms, it must be remembered that other species are also farmed, both fish and shellfish. It is likely that there will be issues relevant to the management of wild fish raised by all aquaculture activities within the shared waters and therefore this must be reflected within any management decisions.

Under the previous plan the Area Management Groups continued to meet and exchange information.

- It is recommended that all new aquaculture developments continue to be assessed with respect to other structures already present within the loch, either freshwater or marine, taking account of added impact within the area rather than individual impact. Best available practice should be followed at all times and the relevant Highland Council Aquaculture Framework Plans adhered to.
- It is recommended that all existing structures are operated to best practice guidelines, with management reviews undertaken regularly. All companies currently operating in the area are signed up to the industry Code of Good Practice. However, all companies within the salmon farming industry should be encouraged to sign up to and comply with the industry Code of Good Practice.
- It is recommended that all anglers and ghillies are trained in the recognition of fish farm salmon and other species, i.e. steelheads, and that actions are initiated to remove them.

2.4 Communications

Communication between users is an important factor within the management of any resource. Where rivers have multiple owners this could take the form of management committees or other structures involving the different proprietors and enabling 'whole catchment' management. Several of these structures exist within the area but not in all multi-owner systems and the development of groups in these areas should be encouraged in order to ensure consistent management across a water body.

Within Sutherland the DSFB and WSFT share a common area and interest, although the WSFT has a wider remit. Communication between the two groups is on-going, with the Trust attending Board meetings as an observer and providing scientific advice where required. This is an important relationship within the area, and one that should be continued, as are the relationships developed between the Trust and individual proprietors, who have the more detailed management remits within the area.

The development of Area Management Agreements (AMA's) of which there are currently 2 within the area, Laxford and Eriboll are to be welcomed as a communication between wild and farmed fish interests. They should involve the sharing of information and best practice. These agreements are negotiated and signed by all relevant parties and are based on local requirements. They will vary in detail depending on the complexity of the area.

Communication from the Trust is undertaken through the circulation of reports and an Annual Review. In addition, the Trust has developed a website, www.wsft.org.uk, to detail the different activities undertaken, update their progress and publish final or annual reports. The Trust also makes use of Twitter and Facebook to communicate its activities. These are considered an important part of the Trusts communication policy and should be maintained.

Under the previous plan the Trust has continued to develop communications with external bodies and to maintain its existing network.

- It is recommended that existing management groups are maintained and that groups are created on multi-owner systems where these do not already exist as soon as possible.
- It is recommended that a network be devised allowing communications between all users and statutory bodies involved within the area. This could be facilitated through the DSFB or the WSFT.
- It is recommended that Area Management Agreements continue to be supported.

2.5 Education

This section includes the broad range of educational activities important to the implementation of this plan. It ranges from the provision of talks and educational visits, through the dissemination of results to the ongoing training of personnel involved in fisheries management.

Education is a priority area of work for WSFT, both of fisheries interests and the general public. This work is ongoing within the West Sutherland area and is seen as an important method for improving and developing river and fisheries management and care of the species present. Initiatives already established by WSFT within the area include:

1. the development of the 'Ghillies Seminar', an annual meeting which enables the Ghillies to interact with experts on issues relevant to them;
2. assisting with the Highland Ranger public walks programme by giving electrofishing demonstrations and invertebrate sampling and identification;
3. taking pre-school and school children into the field to learn about the rivers, lochs and intertidal areas of Sutherland.

Within the WSFT, dissemination of results is an important tool supporting wider education and awareness raising which is currently undertaken through the production of reports, maintenance of the WSFT website and activity on Facebook and Twitter. Similarly, the provision of advice on different aspects of fisheries management and fish biology where requested and the undertaking of public talks and meetings is undertaken on request.

Staff training and development is an important aspect of the WSFT education programme. By retaining well qualified and well trained staff the Trust is better able to deliver against its range of objectives and work activities.

By ensuring that staff follow recent developments within the field and maintain their knowledge of techniques and new technology, data collection and management advice will continue to be undertaken at the highest standard and to follow best practice.

Under the previous plan:

- ✓ *the Ghillies seminar was offered annually to the area.*
 - ✓ *Ranger activities continued to be offered and accepted.*
 - ✓ *school visits continued to be undertaken and opportunities offered as they became available.*
 - ✓ *outreach events were undertaken at a range of shows and galas.*
 - ✓ *the website was updated and the social media interactions maintained.*
 - ✓ *reports were produced and made available on the website.*
-
- It is recommended that the annual Ghillies Seminar continues to be provided and developed to meet the needs of the river workers.
 - It is recommended that the annual ranger and school programmes are maintained and extended to ensure maximum presence within the area.
 - It is recommended that the WSFT continue to update the website and maintain a high standard of reporting in order to ensure that management decisions are based on the most up-to-date information possible. This will be an on-going activity.
 - It is recommended that staff training and development is given a high priority within the area.

2.6 Biosecurity and non-native species

The potential impacts of introducing non-native species to an area are well documented and include a reduction in biodiversity and/or population size, and the altering of the ecological status of the water body. The resulting reduction in the native populations can be attributed to a range of factors from the out-competing of native species for food resources and habitats to the introduction of disease. Non-native species and their prevention are an important part of the SNH Species Action Framework and the Highland Biodiversity Action Plan. They also form part of the risk assessments performed under the Water Framework Directive. This demonstrates the importance of these species to an area and the potential impacts. As non-native species are often difficult, if not impossible, to remove or contain following an introduction, it is therefore important to ensure that there are no introductions undertaken. Running from 2017 – 2021, the Scottish Invasive Species Initiative coincides with much of this plan. The Trust is a partner in the initiative, which is managed by SNH and funded by the Heritage National Lottery Fund, Scotland.

Within the fish population there is a threat from the introduction of parasites (i.e. *Gyrodactylus salaris*), diseases, invertebrates and plants. The movement of fish or water between catchments can enable the transfer of disease, parasites, including *G. salaris* should it enter the United Kingdom, invertebrate and plant species and to subsequently have a serious impact on the fish populations. Many of these organisms can exist for several days on damp equipment, so it is important that all water users follow appropriate biosecurity measures. It is therefore important to introduce actions within the area in order to minimise the risk of the disease transfer in this manner. The issue of *G. salaris*, its prevention and containment, are detailed in the containment strategy produced by the Scottish Government (www.scottish.parliament.uk). The ‘Check, Clean, Dry’ campaign (www.direct.gov.uk) gives further details for the prevention of the spread of non-native species.

The transfer of wild fish between catchments is also covered by recent legislation. Since August 2008 it has been illegal to stock fish or ova of any species or source into a water body without written permission. In the case of salmon and sea trout this permission comes from the DSFB, all other species require the permission of Scottish Ministers. Application forms are available from www.scottish.parliament.uk or in writing from the DSFB. This legislation obviously covers the transfer of fish between catchments and as such will address the issues of disease and parasite transfer by this means.

Fish farms are subject to different legislation allowing the transfer of eggs and fish between catchments and along public roads in non-sealed transport. It is felt that this issue needs to be addressed and work on this will continue to be undertaken by Fisheries management Scotland on our behalf through the Aquaculture Working Group.

Under the previous plan:

- ✓ *work has started on the removal of Himalayan balsam (2 populations), Japanese knotweed(10 populations) and Skunk cabbage (1 population).*
 - ✓ *new populations continue to be reported and assessed for treatment.*
 - ✓ *mink monitoring and control continued with the assistance of our volunteers.*
 - ✓ *Biosecurity continues to be raised at events around the area.*
 - ✓ *treatment of Rhododendron populations within Reay Forest Estate started.*
- It is recommended that no introductions of non-native species are considered.
 - It is recommended that there is no transfer of fish between catchments, including the stocking of brown trout into lochs, without a full risk assessment being undertaken.
 - It is recommended that an awareness raising campaign is co-ordinated throughout the area on the requirement for biosecurity.
 - It is recommended that a monitoring network is established in order to map invasive non-native species and coordinate their eradication.
 - It is recommended that current monitoring and eradication programmes are continued.
 - It is recommended that Rhododendron is considered and a removal policy organised.

2.7 Restoration of habitat and fish populations

Fish populations within west Sutherland have declined in many systems and have become extinct in others. It is important to identify the cause of this decline or extinction and, where possible, address the issues and restore the populations.

In many cases this will be the result of issues out with our control but, where fish access is reduced or prevented by man made barriers or habitat degradation is implicated then the alleviation of the problems should be encouraged and action taken forward. These actions will follow the completion of habitat surveys and provision of individual catchment plans (see 2.1) and will follow the recommendations listed. Following the re-establishment of the habitat, then restoration of the species can be considered.

Under the previous plan:

- ✓ *an action plan was produced for the restoration of the Ledbeg burn.*
 - ✓ *the upper reaches of the Culag system were visited with the proprietors to discuss the potential for riparian woodland planting.*
- It is recommended that issues relating to the decline or extinction of fish populations be identified and countered where possible. This will follow the provision of individual catchment plans.
 - It is recommended that Bhadaidh Daraich continue to be monitored and action taken as required, thus ensuring that the migratory fish population continues to develop.

2.8 Investigations and research

Successful management is dependent on a detailed knowledge of the available resource and, in the case of animals, the existing population structure. Within the WSFT area development of this knowledge takes a variety of forms, including surveying of juvenile populations, analysis of catch data, assessment of the age structure of the population and the assessment of the marine environment. This programme is continually assessed and refined in order to ensure that the data continues to be of use in management decisions. In addition, the development of new programmes to assess other species, for example eels, life stages and habitats, for example lochs, adds to the detailed knowledge of the area.

Juvenile salmonid surveys within the area are currently completed on a 3 year rolling electrofishing programme. This covers over 30 catchments, including most major ones, within the area, with additional catchments introduced where issues have been raised or at the request of the proprietors. The use of a rolling programme, with sites re-visited, gives the added benefit of creating a time series and allowing population trends to be determined. This

information allows management practices to be targeted within the catchments and can identify issues likely to arise in the future, for example the loss of habitat or potential disease evidenced through a decline in juvenile densities.

The WSFT currently has no long term data set relating to smolt production, adult density or the population structure of other fish species present, including brown trout in lochs. These issues are important to the successful management of the fish populations within the area and should be addressed where possible. The development of different monitoring programmes should therefore be considered. In particular, the interactions between brown and sea trout, and potentially ferox, are an important consideration in the management and restoration of the sea trout populations.

Monitoring also plays a key role in the assessment of a wide range of management interventions and the assessment of potential impacts from proposed developments within the area. As such it plays a key role in the ability of the Trust and the DSFB to represent the interests of the fish within the area. Where restoration or barrier removal has taken place, as detailed in 2.7 and 2.2, it is important that it is monitored in order to determine the success or otherwise of the activity. The programme used will vary dependant on the circumstances but it is important to ensure that pre- and post-work sampling is undertaken and that the post-monitoring is undertaken for a minimum of 3 years to ensure adequate assessment. Where additional issues are determined then further work can be implemented.

Marine areas are also vital to migratory fish species. It is therefore considered important that a monitoring programme be developed in order to look at issues affecting the fish species in these areas, for example sea lice densities and food availability. The WSFT currently undertakes a programme of monitoring sea lice densities on sea trout within some estuaries but the extension of this programme together with its development into related areas would be advantageous. In particular, it would be advantageous to determine sea trout movements at sea in order to determine interactions with marine developments.

Continual assessment and development of the monitoring programme should be undertaken. It is important to ensure that the monitoring programme addresses any issues raised in order to ensure that the best fisheries management practices are employed within the area, both within the freshwater and marine areas. The continual development of analytical techniques and reanalysis of the existing data would help to ensure that this occurs. To this end the WSFT should continue to develop their analytical techniques and assess the monitoring programme to ensure that it addresses the management requirements of the area.

Data collection, analysis and storage are an integral part of any monitoring programme. Juvenile and habitat data are currently collected and stored using standard methodology devised by the Scottish Fisheries Coordination Centre (SFCC) and implemented throughout Scotland. Other data are collected and handled using accepted scientific techniques. However the development of new techniques and technology are on-going and it is important that the WSFT continues to assess its datasets to ensure that the best possible value is derived from it.

Under the previous Plan:

- ✓ *monitoring of the sea lice on sea trout within the estuaries continued. This feeds in to a national assessment undertaken by the Scottish Government as well as forming part of the AMA.*
 - ✓ *juvenile surveys continue to be undertaken. These data are available to Marine Scotland and have been used as part of National assessments.*
 - ✓ *an acoustic survey of the movement of sea trout in Loch Laxford was undertaken. Details are available on the Trust website or from the Biologist.*
 - ✓ *the smolt trap in Badna Bay continues to be run and the population structure monitored.*
 - ✓ *assessment of brown trout populations started.*
 - ✓ *monitoring of a Hydro-electric development was undertaken.*
- It is recommended that the present monitoring programme be continued, subject to continual assessment.
 - It is recommended that the monitoring programme be expanded over the period of this plan to encompass other species and life stages.
 - It is recommended that any restoration work undertaken under 2.2 and 2.7 be supported by a monitoring programme designed to determine the effectiveness or otherwise of the actions undertaken. This is part of

the Trusts role in assessing the impact of new developments, the development of new techniques and the assessment of existing problems.

- It is recommended that the WSFT continues to assess the data held using developing techniques, for example GIS. This may require re-analysis or the transfer of data to other media.

2.9 Salmonid genetics

As genetic analysis techniques improve, it is becoming increasingly apparent that sub-populations of salmon exist within larger catchments, and the extent of genetic segregation of populations within smaller catchments is unknown but likely to be significant. In order to properly manage the salmon populations within the area it is logical to determine the number of populations present, and the degree of separation. This requires the collection of genetic material from juvenile salmon throughout the area, and to this end a protocol has been developed by fishery trusts with Marine Scotland Science which can be followed to ensure best practice in genetic sampling.

Within the west Sutherland area there are not only different populations of wild salmon but also the presence of fish farm escapes. These fish will breed with the wild salmon and may alter the structure of the populations. In order to better manage the area, particularly where escapes have occurred, it is therefore important to determine the extent of genetic mixing within the area and the potential long term impact of these interactions.

- It is recommended that work be progressed on the development of a 'Scottish strain' marker to determine the potential introgression within the population.
- It is recommended that the trout population of west Sutherland be assessed in order to determine the inter-relationship between resident and migratory strains within the area.
- It is recommended that the results from the genetic analysis be used in an on-going manner to refine local management.

2.10 Fisheries protection and the implementation of local fishery policy

The Scottish Government, through The Conservation of Salmon (Scotland) Regulations, set minimum fisheries policies for each catchment. This classifies the catchments into 1 of 3 categories based on catch returns and determines the requirement for the use of catch and release as a management tool. On top of this, the establishment of fisheries policy and protection for salmon and sea trout and its enforcement is the jurisdiction of the North & West District Salmon Fishery Board. In the case of protection policies the DSFB appoints all bailiffs, although they are proposed and employed by the individual estates. All other species are managed by the individual proprietors, except where a Protection Order (PO) exists and the management is detailed within that document. Again, wardens to enforce the requirement for permits and the fishing methods used are appointed through the PO, although employed by the individual estates or nominated by angling clubs.

The degree of enforcement varies between and within catchments and it would seem sensible for an area-wide policy to be adopted. While it is recognised that this may be difficult to organise and co-ordinate, the DSFB could play an important role in this. Currently, although there is some sharing of assistance and knowledge between catchments this is sporadic and it would seem sensible to extend this and implement a system to share information across the area.

The use of catch and release is a positive development in stock conservation and a welcome tool for fisheries management. Throughout Scotland the use of voluntary catch and release is now widely employed, with some systems also introducing a more rigid policy. Within Sutherland the complete catch and release of sea trout in the Laxford catchment, for example, has been in place for over 20 years, while many systems are introducing bag limits for salmon.

The proportion of salmon caught and released within the area is increasing, while that of sea trout is higher and also increasing. However, given the low numbers of fish of both species within the area compared to historic levels, it would seem important that this level is increased. Similarly, while many of the rivers within the area follow a similar season, it should be noted that this is not always the case. Indeed different proprietors within one catchment can have different seasons. It would seem that this is counterintuitive to sensible management and is an issue that should be addressed.

The policy for fishing for other species, primarily trout and charr, is more difficult to determine as the populations are more static. However it is important that the populations are managed in a sustainable manner and that the individual systems are not over-exploited. This will require information on the populations within the lochs, information that can be obtained in part from angler records. Given the large number of lochs within the area, and the relatively low angling pressure, this is unlikely to be a significant risk but is one that should be reviewed.

- It is recommended that the percentage of fish released is increased and that a policy of catch and release for migratory salmonids is instigated throughout the area.
- It is recommended that enforcement policies are standardised and that intelligence is shared throughout the area.
- It is recommended that recording practices for non-migratory species are improved throughout the area and that management practices are reviewed on a 5 year basis.

3 Legislative requirements

There are a wide range of legislative responsibilities when considering any management option. They are shared between a variety of statutory bodies, dependent on the activity under consideration, the location and the methods used. As statutory consultees SEPA, SNH, the Local Authority and the DSFB may all be involved in any decision.

SEPA are the environmental regulator, with responsibility for the licensing of any discharges to air, water or land. This includes the diversion of water, for example, through a hatchery even if there is no addition of chemicals or food. SEPA are also responsible for the implementation of the Water Framework Directive (WFD) and the Controlled Activities Regulations (CAR). As part of the WFD, Area River Basin Management Groups have been established and the production of Area Management Plans has been instigated.

The CAR provides SEPA with the opportunity to regulate a range of activities which can relate to fishery management issues. In addition to existing controls on point source pollution (which have been revised as part of these regulations) SEPA now regulates activities including water abstractions, water impoundments, diffuse source pollution and river engineering. Further information on this is available from the SEPA website, <http://www.sepa.org.uk/wfd/regimes/index.htm>.

The implementation of these regimes by SEPA provides an opportunity to better protect the water environment to the benefit of fisheries and fish. This process allows third party representations to be made at certain times. Essentially SEPA must advertise all licences where it considers that “good ecological status” objectives will not be achieved through the licence conditions. This consultation process allow any interested party to inform the regulatory decision and the Trust will use these opportunities to respond to relevant consultations in order to achieve better environmental outcomes for the fisheries of it’s area.

SNH has responsibility for promoting, caring for and improving Scotland’s natural heritage. This includes protected areas, which are designated through national legislation such as Sites of Special Scientific Interest (SSSIs) and Marine Protected Areas or Natura sites which include Special Areas of Conservation and Special Protection areas, designated under the European Habitats and Birds Directives. Where a site lies within, or an activity is likely to impact on a designated area, or a species that is specially protected, then SNH must be fully consulted. This can include freshwater pearl mussels or black throated divers, badgers, bats or otters to name a few. SNH also deals with species licencing in Scotland. More details can be found on the SNH website, www.nature.scot.

The Local Authority has responsibility for planning and development and the fish farm location. The Highland Council has produced a variety of development plans for the area. Further details of the planning requirements and development plans can be obtained from the Highland Council website, www.highland.gov.uk.

4 Action Table

Section	Activity	Responsible party	Timetable
Individual catchment plans	Undertake riparian work within the Culag system	WSFT; Assynt Foundation	2020
	Undertake works identified in the Catchment Management Plans	WSFT; Estates	Ongoing
	Undertake a survey of the Dionard catchment	WSFT; Estates	2020
Barrier removal	Remove previously identified barriers	Individual estates	On-going
	Identify and remove additional barriers	WSFT; Individual estates	On-going
Aquaculture	Continue with the AMA process	WSFT; fish farmers; individual estates	On-going
	Vigilance and education of wild fish interests for escaped salmon and trout	WSFT; individual estates	On-going
Communications	Attend local games fairs, shows and galas	WSFT	Annual
	Produce report and publicise	WSFT	Annual
Education	Organisation of the Ghillies Seminar	WSFT	Annual
	Undertaking of demonstrations with the local HC Rangers	WSFT; HC Rangers	Annual
	Creation of projects with schools	WSFT; local schools, HC Rangers	Annual
	Retain and update the WSFT website	WSFT	On-going
Biosecurity and non-native species	Vigilance for the introduction of non-native species and the need to stop their introduction	All users	On-going
	Monitoring and removal of non-native species already present	WSFT; Estates	On-going
Investigations and research	Continuation and review of the present monitoring programme	WSFT	On-going
	Monitoring of smolts and adults	WSFT	On-going
	Monitoring of the impacts of barrier removal and restoration schemes	WSFT	On-going
	Review of data collection, analysis and storage techniques	WSFT	On-going
Salmonid genetics	Assess the sub-lethal impacts of aquaculture on sea trout populations	WSFT	2022
Fisheries Protection and the implementation of local fishery policy	Standardisation and enhancement of the catch and release policy	Individual estates	On-going
	Standardising of enforcement policy and the sharing of intelligence	Individual estates	On-going
	Establishment of a recording policy for non-migratory species	Individual estates	2020
	Review of the management practices within lochs	Individual estates	2022