



# Kyle of Sutherland Fisheries Trust

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## KYLE OF SUTHERLAND DISTRICT FISHERY MANAGEMENT PLAN

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## **1. Kyle of Sutherland District Fishery Management Plan**

### 1.1 Aims

To assist with management of the sustainable development of fish populations and fisheries, the prevention of deterioration of present stocks and the preservation of biodiversity and genetic fitness within the Kyle of Sutherland District (the District)

## **2. Introduction & Background**

### 2.1 Board & Trust

The Kyle of Sutherland District Salmon Fishery Board (The Board) is the statutory body for the District. The Board was established in the mid 1800s and has obligations to conserve and protect migrating fish stocks and to administer the interests of salmon proprietors.

The Kyle of Sutherland Fisheries Trust (The Trust) was established in 2003. It endeavours to facilitate ecological and socio economic improvement works within the communities, fisheries and catchments of the five main Kyle of Sutherland rivers – Carron, Oykel, Cassley, Shin & Evelix and other minor rivers in the Kyle of Sutherland District.

River and riparian zone management within the District is undertaken by the Board and Trust jointly.

A volunteer Board of Trustees and Directors governs the Trust. They are broadly representative of most of the interests which it sets out to bring together into workable improvement projects. It has charitable status and is a company limited by guarantee.

The Trust works closely with the Board, riparian zone landowners, and river proprietors, angling associations, public agencies, local businesses, corporate benefactors and local investors. Where possible, it acts as a facilitator for collaborative activity, bringing



together developments, improvements and community projects with multiple partners from both within the District and, more widely, within the Moray Firth Region.

## 2.2 District

The District contains some 163,647 ha, 46 miles of tidal zone, 70 miles of principal rivers, 400 miles of tributary rivers, 61 freshwater lochs, lochans and numerous minor feeder burns and streams.

The rivers all run into the tidal waters of the Kyle of Sutherland. They are managed on a local basis by estate ghillies & keepers and on a broader basis by the Kyle Board & Trust.

## 2.3 Economic Drivers

In a similar manner to other Highland river systems, the economic driver for the management of lower rivers is salmon and sea trout angling and for the higher catchment rivers it tends to be deer stalking. These can prove to be two very conflicting economic interests. One part of the work that the Trust and Board is involved with is to bring together these two very distinctly different agendas into a unified management policy. Discussion should be held in open forum to minimise negative impact between the two activities.

## 2.4 Stocking & Hatcheries

Other than in the Shin river system upstream of Hydro impoundments, where there is only a very small population of breeding salmon, stocking rivers is no longer the Board's policy. Past practice had encouraged stocking but recent research indicates that this can in some circumstances be ineffective and possibly damaging to wild stocks of salmon.

## 2.5 Hydro

The Carron, Cassley and Shin are impacted by Hydro development. Most development occurred in the 1950's within the district. Hydro structures and plant present particular problems to migrating fish.



Free passage of fish, timing of compensation flows, gravel movements and other issues are in a continual process of review.

The Board have a close working relationship with Hydro operators and regulators.

### 2.6 Land Use

A general description of local land use: Upper catchments are over grazed by sheep & deer with some cover from blanket coniferous forestry encroaching on the riparian zone.

Mid catchments are heavily covered in coniferous forestry, and the immediate riparian zones tend to be well wooded with native species of hardwood trees. Land lying adjacent to that is un-intensively farmed or crofted with some damage to riverbanks by grazing stock.

Lower catchments are farmed & crofted and are generally fenced from livestock. The District does not suffer unduly from agricultural run-off, as the level of farm production is not intensive.

Land use has not altered much in the last 100 years other than with the introduction of blanket cover coniferous forestry plantations in some parts of the District.

Acknowledgement is due to national policy which discourages liming of hill ground, open ditching for drainage and intensive farming and encourages the re-establishment of Caledonian forest – all of which impact upon the fishery.

### 2.7 Water Quality

The water quality in the District is high. Pollution sources are identified as coming from rural industries such as: treated estate and individual rural housing effluent, agriculture, forestry, aquaculture, run-off from renewable energy construction projects.



## 2.8 Climate

The climate is typical of the North Highlands with higher rainfall in the western hills and less towards the East coast. The rivers are consequently all spate rivers with the usual issues of spate run off and occasional wash-outs which can result in discolouration and additional silting in the downstream river. Where and when possible, flood mitigation procedures should always be fully examined with a view to alleviating downstream flooding, helping up-stream migration and providing earlier danger warning to the community. This should include re-afforestation in high run-off areas of the upper headwaters.

## 2.9 Industry

Only small industry exists within the area with the most economically important being tourism, including angling tourism. There is also some game and fish/sea food processing and local services. Other local industry includes aquaculture, renewable energy, forestry, mussel fishery, coastal netting and eco tourism.

## 2.10 Settlements

The District has a population of approx 2000 people living in Rosehall, Lairg, Invershin, Culrain, Ardgay & Bonar Bridge as well as in an increasing number of re-instated rural settlements. Protected areas designated for water interests (e.g. River Oykel SAC and River Evelix SAC) will help to ensure that development does not have adverse effects on specific interest features (e.g. freshwater pearl mussel) and their habitats.

## 2.11 Fish Species Present.

- Atlantic salmon
- Brown trout / sea trout / ferox trout
- Lamprey (sea, brook & river)
- Arctic charr
- Sticklebacks
- European eel

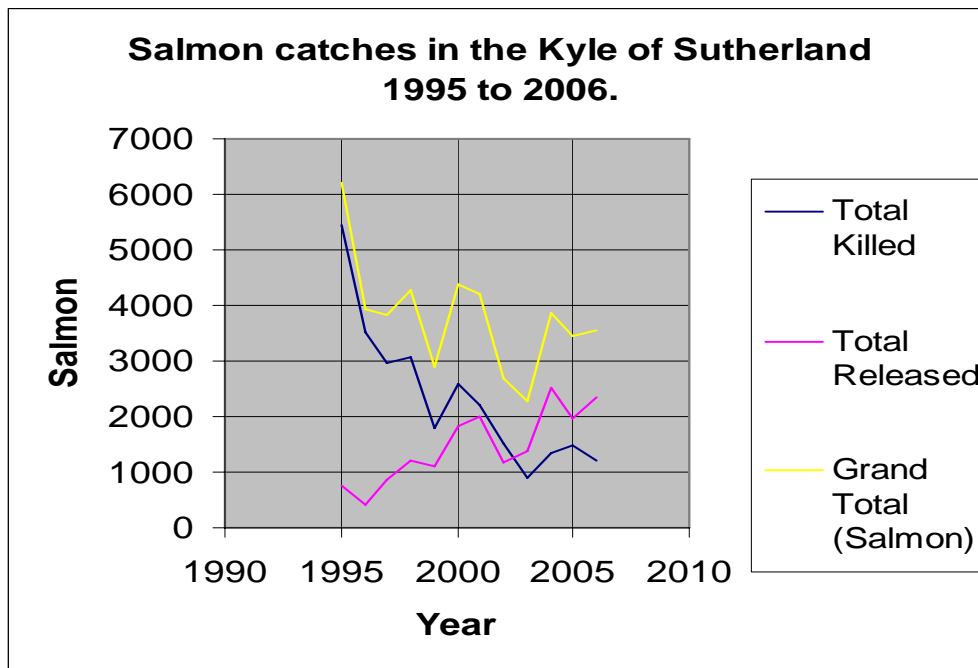


- Minnows (non-native)
- Stone loach (non-native)
- Rainbow trout (non-native)

### 2.12 The Fisheries

The largest and economically most important fishery in the district is the salmon fishery, which includes both rod and net fisheries.

Data Source - FRS Statistical Bulletin



There has, over the last ten years, been a marked increase in the proportion of fish that have been released after capture in the rod fishery. There is currently about a 70% release rate. Catch and release (C&R) exceeds 80% on the Carron river. Targets for C&R may be amended where appropriate.

The tidal part of the Kyle is a known sea trout fishery. Sea trout are also caught on the rivers but as a by-catch by anglers salmon fishing.



The Brown trout fishery within the region could be developed to a greater extent. Loch Shin is a popular venue for trout anglers.

### 2.13 Predators

The Board partakes in and supports the development of the Moray Firth Seal Management Plan. The plan has been developed to protect fisheries and seals. The Dornoch Firth has SAC status for common seals whose numbers have been in sharp decline over the last few years. The Board's past policy of control by shooting was perceived as having an adverse impact on common seals. All of the Boards that operate within the plan region (which includes the Kyle of Sutherland District) now control seals within agreed designated areas and quotas.

Sawbill ducks impact on salmon populations throughout the District – most especially during the spring smolt run. The Moray Firth Boards are attempting to agree a management plan with other organisations to address this problem and have set up a Sawbill duck working group which recognises the issues at stake of attempting to control the impact of one species upon another.

Bottlenose Dolphins are an SAC protected species in the Moray Firth. The population will impact on adult salmon migrating through coastal waters. There is extensive research into the Moray Firth Dolphin population.

Trout predate on salmon at all life stages apart from adult fish. Similarly, otters, birds of prey, other birds and marine fish prey on salmon at their various stages of life.

Salmon and trout are a natural part of the food chain. They cannot and should not be protected from normal rates of predation. The purpose of identifying predators is to recognise when excessive predation may be taking place and to ensure that, where appropriate, it is possible to take remedial management action to maintain a natural balance within the populations.



### 2.14 The Plan

This Fisheries Management Plan (FMP) is being developed with financial assistance from the Scottish Government (SG), input from Rivers & Fisheries Trusts Scotland (RAFTS), Fisheries Research Services (FRS) and both the Kyle Trust & Board. It has evolved out of the audit of information which was provided under contract to FRS in March 2008. It will become the blueprint and point of reference for the management of all research, development and maintenance works which the two organisations will become involved in over the next 5 years. The Plan will not, however, be totally definitive over that period. Clearly, work plans will evolve with the results of new research and the availability of funding.

Its purpose is to provide guidance and credibility to the development of a 5-year programme of research, habitat restoration, socio-economic development & fisheries protection within the District. It is intended to encourage collaborative working between all sectors of society and the local economy involved in the well-being of rivers and their immediate habitat; including landowners, fishing proprietors, tenants, angling associations, farmers, aquaculture, private business, hydro abstraction and Government Agencies. It is also intended to provide knowledge and opportunity for children within the community.

## **3. Current Work and Activities**

### 3.1 Categories of Work

The work schedules of the Trust and the Board cover the following activities:

(Detailed description of this work forms the basis for the FMP and individual projects are expanded upon in the following section)

- Fisheries Protection
- Habitat Restoration
- Fish Population Research



- Non Native Species
- Education
- Communication
- Employment
- Community Activity related to Riparian Management
- Financial & Budget Management
- Liaison with Agencies
- Liaison with Hydro Electric operators

All activities are related to a multi species remit and are considerate of the needs and requirements of as many sectors of the community as possible.

### 3.2 Hydro Electricity Abstraction

The catchments in the District are widely used for hydro electricity. Exceptions are on the rivers Oykel and Evelix. Large-scale installations have been in place since the 1950s. It is recognised and accepted that abstraction rates are currently not negotiable with the main current operators. In most cases, abstraction rates have been established for a long period of time. However, this situation may change over the River Basin Management Planning cycles as SEPA discusses the environmental impacts with affected stakeholders and considers the implications for abstraction levels with operators.

Scottish and Southern Energy (SSE), the main current operators, are pro-active in assisting with research and development projects and there are well established working relationships in place.

There are major hydro installations on the rivers Shin (water diverted from the Brora and Naver systems), Cassley (water diverted to the Shin) and the Carron (water diverted to the Conon system).



### 3.3 Economic Drivers

A comprehensive study of angling and angling-related tourism, commissioned by the Kyle of Sutherland Fisheries Trust and supported by HIE / CASE, was published in March 2007. (“An Economic Survey of Angling in the Kyle of Sutherland”, Glasgow Caledonian University and Cogent Strategies International).

The study has established that “angling, particularly for salmon, is a very important part of this small rural economy and, for well over a century, it has been supporting income and employment in what has become an increasingly fragile local economy. There are relatively few economic activities that have proved to be as long lasting”.

Their conclusions are:

- Some £3.73m is spent annually on angling within the District
- Every salmon and sea trout caught by anglers within the District generates an average of some £1100 spent within the local economy, annually
- Angling supports 86 fte jobs, which represents 13.7% of all employment within the District
- Wages & salaries for those 86 fte jobs are in excess of £1.68m annually
- If angling were to catastrophically cease, as many as 77 of those 86 fte jobs would cease to exist and unemployment would rise from 10% to 21% of the local working population

When improvements within a river system will facilitate free access for migrating fish to new or otherwise previously in-accessible habitat the following statistics may be applied:

- 3-5 eggs or fry per sq m of new wetted area will hatch to fry
- Resulting in: 1–1.6% maturing to smolts going to sea
- Smolts to Returning Adults (RA) = 5–10 %
- 10–20 % RA caught by anglers
- 1 salmon or sea trout caught by anglers in Kyle District is worth £1100 into local economy
- Economic value of creating access to new habitat is, therefore:



Wetted area (length x width) x 3-5 = live juvenile population

Live juvenile population x 1-1.6% = smolts to sea

Smolts to sea x 5-10% = returning adults (RA)

RA x 10-20% = caught by anglers

Caught by anglers x £1100 = value to the local economy in 1 year

1 year value x 10 = long term benefit

1 successful RA measured over a 10-year period is worth £11,000 into the economy over that period

Salmon and Sea trout are regarded as key species. Their presence indicates a healthy biodiversity and environment. The importance of key species within the Kyle district is reflected by the fact that parts of the district are subject to an SAC designation (see para 3.4 below).

All work that the Kyle Trust & Board are involved in is driven by the need to keep a robust population of salmon and sea trout within the district.

Although it is sometimes difficult to directly relate immediate tangible economic benefit or outcome to all research and development work it must be understood that the work being carried out has long-term effect/benefit and that improvement in socio-economic outcomes always remain the primary drivers.

No other organisation is working to combine broad interests to sustain this most vitally important part of the local economy.

### 3.4 Designations

The Dornoch Firth supports many overlapping designations and each designation is identified to protect specific qualifying interests, making this area perhaps one of the most protected locations within East Sutherland



- Dornoch Firth & Morrich More Special Area of Conservation (SAC)
- Dornoch Firth & Loch Fleet Special Protection Area (SPA) and Ramsar Site
- Dornoch Firth Site of Special Scientific Interest (SSSI)
- Dornoch Firth National Scenic Area (NSA)

The River Oykel SAC is designated for its Atlantic salmon and freshwater pearl mussel interest. This SAC site includes the Kyle of Sutherland, River Oykel, River Cassley, Corriemulzie River, Rappach Water and other upper tributaries. This SAC also includes some minor tributaries which include important spawning sites for Atlantic salmon.

The River Evelix SAC is identified for its freshwater pearl mussel interest only. This SAC site includes the main stem of the River Evelix up to Loch an Lagain.

There are other protected areas within the catchment of the Fisheries jurisdiction that overlap minor freshwater bodies. More detail on protected areas can be found on SNH's website ([www.snh.org.uk](http://www.snh.org.uk)) under 'Site Link'.

### 3.5 Classification

The Fisheries Management Plan will reference the classification results for the District. This would enable the actions of the Plan to be put into the context of improving water bodies to good status. The classification results will be updated each year based on new monitoring data. It is intended that SEPA may be able to provide maps for the plan showing the chemical, morphological and hydrological status of rivers and lochs in the District. This would be a good way to support dialogue between the Trust and SEPA on the classification of rivers and lochs.

One example that could be included in the Plan is joint working on recording morphological changes. The combination of aerial photography and the database already developed by SEPA could deliver big advantages for both organisations.



## **4. Work Programme**

### 4.1 Fisheries Protection

A major part of the Board's work is in fisheries protection. That is managed by a team of full time and seasonal bailiffs. The Board has a statutory obligation to protect migrating fish from exploitation. An ongoing budget is provided by the Board towards fishery protection.

The Board is involved in the buy out of local netting stations. This is seen as a way of reducing mixed stock exploitation and allowing the Board to manage and protect the salmon stocks.

A Catch & Release policy was introduced in the rod fishery in the late 1990's and has been a successful tool in the conservation of salmon. This policy has been adopted by all stakeholders.

Objective:

- Fisheries will continue to be bailiffed
- Funding will continue to be raised as necessary to buy out or lease netting stations
- The Board will adjust their policies on exploitation as and when necessary to suit scientific advice & best practice and to maximise opportunity for conservation of the species

### 4.2 Habitat Restoration

Perhaps the most valuable work that river management organisations can become involved in is habitat improvement. A large scale project is being undertaken by the Trust in collaboration with landowners and river proprietors across the upper tributaries of the District.

During 2007/2008 the Trust became involved in a major proposal to re-establish native woodland corridors within the riparian zone of the upper tributary system within the



District. This project is collaborative utilising private sector donation, landowner and river proprietor investment and Forestry Commission Grant. The Trust will eventually become involved in the establishment of more than 1000 ha of new and regenerated native woodlands in the upper tributary systems. This habitat renewal and re-establishment is one of the Trust's most important and far reaching projects. The anticipated value to the local economy is large – >£2m over 5 years.

Work will continue to develop new opportunities on upper tributaries throughout the life of this plan.

Objective:

- Establishment of linked wildlife corridors within the upper catchments
- Greatly enhanced spawning habitat
- Increased feeding for the juvenile stages of migratory fish
- Mitigation of flash flood run-off
- Major contribution to upper tributary bio-diversity
- Increase number of migrating fish in rivers leading to direct economic benefit

#### 4.3 Identification and mapping of all in-river obstructions throughout the District

There is no fully comprehensive record of in-river obstructions within the District. In order to identify necessary remedial work, a full audit of obstacles is required. Obstacle removal is desirable to encourage free migratory access to all fish species and to mitigate flood damage.

This project will be scheduled to run as part of a programme of work to be allocated to a graduate placement position to be appointed during 2009. It will contribute to 1 x 1fte job.



#### 4.4 Identified Obstruction Removal

Three projects have been identified and are under application for funding approval to carry out the necessary scoping studies to enable them to proceed. They are: Pipe Bridge removal and replacement at Ben More Estate and Invercassley Estate. Additionally, the removal of a disused concrete private hydro installation on the Spinningdale Burn.

Objective:

- Definitive audit of all in-river obstructions within the District to guide future work
- Removal of 3 known obstructions will have an immediate effect on enabling free access to increased spawning habitat - approx 2.75 kms plus feeder burns to Loch Migdale – up to 6625 sq m wetted area
- Will contribute to 1 x 1fte job

#### 4.5 Gleann Beag Dam

The Gleann Beag Dam (operated by SSE) diverts water from the top of the Glen Mhor River (major tributary to the river Carron) to the top of the (neighbouring) river Conon system. The dam has been in place since the late 1950s. It does not have any fish pass or screening facilities thus denying migratory fish access. Historical evidence suggests that salmon used the area above this dam, pre hydro.

Negotiations are in progress with the hydro operator and the regulator (SEPA).

Objective:

- Allow access to traditional spawning areas that may be valuable to early running fish

#### 4.6 Education

Both organisations are involved in educational projects. The countrywide Salmon in the Classroom (SIC) project has been delivered to local primary schools by the Board/Trust



staff for the last 3 years. It is planned to continue with this although new funding is being sought for future years as the current source (LIFE Programme) has come to an end.

The Trust has funded a Work Experience Programme (WEP) by providing an opportunity for 1 locally based young person (ideally an undergraduate) to work alongside the experienced bailiff and research team for some months during the summer. This will also continue and will come under the same project heading for funding purposes as SIC.

Discussion forums with river workers and proprietors to achieve closer working relationships will also continue.

Objective:

- School children will continue to benefit from the hands on experience of raising juvenile salmon and seeing their efforts result in live fish being freed into the river system
- SIC can be expanded upon to include older children at secondary education level
- Schools can become operating partners
- WEP may eventually draw from children who have experienced the SIC programme
- An excellent funding opportunity for a locally based business to increase their profile within the community
- Improved inter-estate working relationships

#### 4.7 Communication

Both the Trust & the Board produce regular newsletters to update their membership with news of their activities. They also manage two websites. These publications could be brought together within the life of this Plan. The Trust published a fisheries information leaflet during summer 2008. Its success will be reviewed at the end of the 2008 season.



#### Objective:

- Information leaflet should become a source of annual funding by encouraging private donations and by sales
- Joint communication strategy demonstrates that fisheries management is working on a united front with the private and public agendas of both organisations being of equal importance
- Possibility of including information from the Kyle of Sutherland Angling Association (KAA) at the same time
- Increased, efficient & informative communication should lead to greater membership participation

## **5. Fish Population Research**

### 5.1 Fish Populations

Fish populations are dynamic and respond to many different environmental inputs. They can give an indication of how well or otherwise management actions are influencing populations.

Population data may also help to guide future research and management decisions. Long-term data sets can be very valuable.

### 5.2 Electro - Fishing

A regular programme of electro fishing to monitor species & population trends within the entire District is constantly undertaken. Results are recorded, monitored and are made available to Scottish Fishery Co-ordination Centre (SFCC) as required.

### 5.3 Moray Firth Sea Trout (MFST) Research Project

The Trust and the Board financially contribute to the costs of the newly created MFST Project. The Trust is the managing partner in this collaborative project, which is



examining population trends and the economic value of sea trout within the Moray Firth. All Fisheries Trusts and Fishery Boards and most Angling Associations within the Moray Firth are involved. It also has attracted patronage and funding from SNH, HC, HIE, Wild Trout Trust, Atlantic Salmon Trust and S&SE as well as numerous smaller private sector contributions. There are some 24 operating & funding partners collaborating to make this project successful.

Results will be published annually and they will, as necessary, be available to be fed into FMPs for all the rivers involved in the research programme. This will become a source of information for local areas to improve their FMPs as an increasing amount of information becomes available.

The project is currently funded for 3 years but may well attract further funding to take its work into more detailed areas of research. There is every expectation that this will become the definitive piece of research on sea trout populations on the east coast of Scotland.

Objective:

- Results will contribute to individual river and catchment management plans
- Habitat improvement work to enhance natural sea trout production can be planned
- Long term financial benefit to the fishery – especially through the KAA

#### 5.4 Shin Smolt Migration Research

A research project to ascertain the survival rates of smolts passing through the Hydro system at Lairg on the river Shin has been in place for 3 years. Results will be published in due course.

If the published results of this project prove that smolt migration is restricted by the Hydro system, solutions to the migration challenge will have to be considered.



The project to date has attracted funding from river proprietors above and below the Hydro system, the Board & Trust and from SSE.

Objective:

- Possibility of re-establishing a viable migratory fish population in the tributaries of loch Shin
- Major long term economic benefit within the community of Lairg
- Large inward investment in permanent infrastructure and labour to manage it

#### 5.5 Whole River Fish Counting – River Evelix

At the mouth of the River Evelix there is a fish ladder through which all migrating fish must pass. This structure is narrow with the flow being controlled, which would be ideal for the installation of a fish counter.

There are already two counters in the District which are operated by SSE. Although these are useful they only count the fish in the upper parts of the Cassley and the Shin.

Accurate statistics on fish movement, both upstream and downstream, can be a useful indicator of overall population dynamics. The data from the Evelix would help extrapolate the results from fish counters to the whole district.

The Kyle Trust & Board regard the installation of a total count fish recorder on at least one of the rivers within the District as being a priority. Data management will be analysed as part of the work of 1 x 1fte employee.

Objective:

- More accurate population statistics for the whole District
- Ability to target habitat improvement works
- Fishing regulation can be justified and accurate rather than the current broad brush approach



- Will become a major management tool contributing to sustaining the many jobs involved in recreational fishing within the whole District
- Will contribute to 1 x 1fte job

#### 5.6 Collation of Catch Records from all Estates and Fishing Stations

Every estate, fishing station and angling association holds fishing catch records; some dating as far back as the early part of the 20<sup>th</sup> century and before. Little or none of this information is collated and available to fishery management groups. This data could demonstrate population trends through time.

The work required to produce accurate, collated records from approximately 35 estates, 8 fishing stations and 3 angling associations on salmon, sea trout and brown trout catches and to relate them to identifiable changes in management practice within the District would provide sufficient work to contribute to 1 x 1fte job. This position could qualify for assistance as a Graduate Placement through the HIE funding scheme along with work required on two other proposed projects (Obstacle Audit & Fish Counter). The remainder of the funds required would be raised from the combined sources of private donation, the Trust & Board, local company sponsorship and estate & proprietor contribution.

Objective:

- Historical evidence to show the impact on fish populations of both appropriate and in-appropriate management practices
- Highly significant management tool which would directly influence work being carried out within the river systems
- Better informed management strategies will contribute to sustaining the long term value of work and jobs within the District
- Contribution to 1 x fte job
- Individual identities of sources of information can be protected



### 5.7 DNA Mapping of Atlantic Salmon in the Kyle District

All salmon rivers contain discrete populations of fish. Boundaries between these populations are often delineated by physical features.

#### Purpose:

To map the genetic variability of salmon within the District to:

- Enable targeted habitat management programmes to be developed
- Identify spawning areas for discrete fish populations – eg. to establish the destination of any individual identified at any time of year in any of the rivers
- Enable targeted conservation and exploitation policy

#### Method:

- Select 15 sites throughout the river catchments above & below geomorphologic breaks
- Electro fish the selected sites and take DNA samples (fin clips) from 50 parr per site – 50 parr x 15 sites = 750 samples
- FRS to manage DNA analysis to establish DNA map of existing parr populations
- Collect samples (fin clips or scales) from line caught adult fish in the 5 river systems across all of the following season (2009) by using selected, competent and regular anglers and ghillies – approx 100 samples per river will be needed
- Compare 2009 samples with existing DNA map
- Repeat this procedure for 3 years until trends have been established
- Results to be published in 2012/13 with interim annual reports

Note: The selection of only 15 sites throughout the catchments may result in ‘low resolution’ sampling. It may be that a more detailed sample is needed – equally, it may be that that number proves to be sufficient. This cannot be determined until an initial DNA survey is conducted to find out how geographically distributed local discrete populations actually are. Allowance will be made in the budget for the addition of a further 10 sites / yr for 2 years of the project thus more than doubling the sample of discrete populations and increasing the density of the resolution.



#### Objective:

- Creation of a genetic map of salmon populations within the Kyle river system
- Improved understanding of the relationship between run timings and spawning destinations leading to targeted habitat restoration and conservation/exploitation policies
- Use of the knowledge gained will lead directly to improvements in the viability of discreet populations of salmon enabling an increase in smolt production and subsequent economic benefit

#### 5.8 Fresh Water Pearl Mussels

Assist external organisations with research requirements as necessary. No internal agenda other than to recognise that Freshwater Pearl mussels make a positive contribution to water quality and can co-exist in a mutually beneficial way with most native species. SNH welcomes assistance from partner organisations to help ensure that local rivers systems support viable populations of Freshwater pearl mussels.

#### 5.9 Non-Native Species

The District is fortunate in that it has few non-native species although Stone loach have been identified within the Shin system. Some non-native/indigenous trout are known to escape from private loch fisheries into the river system. This practice will be discouraged. It is recognised that it is essential that a bio-security policy is in place to protect the District from major invasive species such as *Gyrodactylus salaris* & North American signal crayfish and non-native plants.

A programme of awareness and education amongst anglers, ghillies, estate owners and proprietors is always being promoted. Annual updates will be circulated. SNH have a programme of raising awareness amongst stakeholder groups, which will also be utilised. RAFTS are developing bio-security contracts towards which all Scottish Trusts will be invited to contribute.



Objective:

- A defined bio-security policy
- Additional security for the District against the invasion of non native species
- Removal of the source of non native/indigenous trout
- Long term protection for existing employment and the rural economy
- Research projects required to identify non-native flora and fauna

5.10 Sponsorship of a Research Post

In conjunction with one of the Scottish Universities or Colleges the Trust would like to part sponsor a research project which would:

- Contribute towards a student's qualification at either under or postgraduate level
- Would provide useful baseline research for a project, which the Trust will take forward in further detail in the future

The Trust is currently supporting a research project for a student from the Scottish Agricultural College studying the value to the fishery of the catch & release policy for anglers.

There are many aspects of the fishery that require research and this would present opportunities for collaborative work with academic institutions. This is a project for the future and has not yet been scoped.

Objective:

- Policy decisions are driven by accurate and detailed research
- The overall cost of carrying out these studies will not have to be borne entirely by the Trust and those who share in that cost will benefit equally



### 5.11 Aerial Mapping

Map the in-river and riparian zone habitat to a high resolution within the whole District using aerial photography.

The information would give accurate indications of precise wetted areas, spawning habitat, riparian vegetation, substrate size, obstructions and flow types.

Objective:

- Allows targeted management planning
- Accurate assessment of localised smolt output
- Less expensive than walk over surveys
- Digital aerial photography allows for image manipulation which assists interpretation and can be utilised in habitat regeneration planning

### 5.12 Radio Tracking

#### Salmon

Tracking devices attached to returning adults that are identified at specific listening stations throughout their migration.

This project could be tied into a secondary stage of the DNA mapping project described at 5.7 above.

Objective:

- Increased detail of migration routes
- Similar outcomes to DNA mapping but in more detail for individual fish

#### Ferox Trout

Known Ferox trout population in Loch Shin. Radio tracking individual fish for up to 1 year would give an indication of fish movements and their interaction with prey species and with aquaculture practice.



A great deal of the work could be carried out by local angling club members thus involving them in useful research.

Objective:

- Detailed knowledge of Ferox trout movements
- Increased knowledge of predator/prey interaction
- Detailed knowledge of spawning behaviour
- Awareness of interaction with aquaculture

#### 5.13 River Shin Research Requirements – Diversion Dam to Kyle

Due to Hydro impact, over what is now an extended period of 50 years, there is a requirement to review freshet regimes, sediment compaction and movement and the natural adaptation of the river and the riparian species to long term Hydro impact. As part of ongoing improvements, SEPA will be assessing the flow regimes and discussing possible improvements with all water users and would welcome input from the Trust.

Objective:

- Consult regulator and others over freshet regimes
- Adjust future management policies regarding down stream effect of Hydro installations
- Develop improved management practices with SSE with no loss of power generation but based on robust science

#### 5.14 Research into Population Dynamics of Indigenous Fish Species

This project should examine and identify the population status, known breeding habitat and viability of native indigenous fish other than Atlantic salmon living within the District.

Some interaction will be necessary with the findings of the Moray Firth Sea Trout Project currently being studied. Some of the work will be new.



**Objective:**

- Improved understanding of other fish species
- Clearer picture of the interaction between species within the District
- Development of the socio-economic value of all species of fish rather than a concentration on Atlantic salmon

## **6. Community Activities**

### 6.1 Small Scale Private Hydro Schemes

There are a growing number of small scale <1 MW hydro systems being proposed and created within the District. Currently, 1 at Mid Fearn, Ardgay and 2 at Merkland, Lairg. Where appropriate, the Trust may actively encourage the use of small scale Hydro on non-productive streams/burns to contribute to the alleviation of downstream flood risk and the reduction of erosion.

As part of any new proposed hydropower scheme SEPA would seek advice from the Trust where appropriate. The impacts on the water environment, including fish, are now assessed by SEPA as part of a CAR application rather than through the planning process.

The Board is a statutory consultee in the planning process. Fish population assessments are often required to satisfy planning requirements and the Trust & Board are able to provide the necessary expertise.

**Objective:**

- Establish a reputation for providing accurate fish data to industry
- Increases the public credibility of the river management organisations when they are required to work as consultees



### 6.2 Disabled Access Fishing Boat

In spring 2007, the Trust purchased a disabled persons' fishing boat known as a Wheelyboat. This allows access to wheelchair users and to less able bodied people to fish on the tidal waters of the Kyle and on selected lochs.

The boat has been presented to the KAA to operate on behalf of the Trust for both their membership and visitors to the area. It is available by prior arrangement. The boat was jointly financed by KAA, the Trust and HIE.

Objective:

- Should help to bring together some of the common interests of local angling associations
- Will increase angling opportunities to disabled fishers
- Will increase the client base and public profile for the KAA
- The Trust makes a £14,000 contribution to community activity

### 6.3 Tain / Aldie Burn – Sea Trout Restoration Project

The Tain & Aldie Burns flow from the Scotsburn hill. They pass through FC conifer plantations, native woodland and traditional croft land. In their lower reaches they flow past newly established rural housing development, intensive agriculture and stock land and out into the Dornoch Firth tidal water to the east of Tain.

To understand what is required in terms of restoration, we will need to carry out a survey of existing river condition, and juvenile populations.

Once the above assessment has been completed a 5 year restoration and improvement plan in partnership with landowners & farmers will be developed.

Proposed funding partners: Landowners & farmers, agricultural improvement grants, Kyle Trust & Board, Community Common Good Fund (Tain), SEPA Restoration Fund.



### Objective:

- Restore sea trout habitat
- Will sustain and improve existing habitat for migrating and local populations of fish and for all species living within the riparian zone
- Will create a blueprint for future use on other similar sized burns and tributaries requiring collaborative management over their whole catchments
- Although the Tain & Aldie Burns support little in the way of commercial angling they do provide some recreational trout fishing and they are important to the immediate communities in their catchments

### 6.4 Employment

The senior Director responsible for day-to-day management of the Trust is also the senior Director responsible to the Kyle Board. Between the Trust and the Board they employ:

- 1 x f/t Director
- 1 x p/t Project Director
- 1 x p/t Secretary
- 1 x p/t Clerk
- 3 x f/t Bailiffs
- Up to 4 x Seasonal Assistants
- 1 x WEP asst.

As managing partners of the MFST Project they employ 1 x f/t Project Officer and they plan to employ 1 x f/t PO for their current research programmes.

That represents:

5 x f/t jobs

1 x f/t job proposed

7 x p/t jobs

1 x WEP job



The total salary value is > £160,000

Objective:

- This is a vitally important part of the local employment & economic infrastructure
- Employment is sustainable by the implementation of the plan

## **7. Liaison with Government Agencies and Other Bodies**

The Trust and the Board have policies of always working within the confines of Government Agencies and other public bodies. There are numerous public bodies involved in river & land management policy making and all are influential in fisheries management and usually require the co-operation of one another and of any applicants to enable assistance of any kind to be forthcoming.

The Director sits on a number of these consultative groups to enable the Trust & Board to have first hand input into the creation of local policy. He is also regularly consulted by the statutory bodies.

They include:

- AAG – Area Advisory Groups
- Moray Firth Seal Management Group
- Sawbill Duck Group
- Statutory Bodies - FC / SEPA / SNH / HIE / HC / SEPA /SG

Objective:

- Direct input for the river management group in managing local conservation policy
- Awareness of opportunity and legislative influences
- Greater understanding of synergy between narrow interest groups



## **8. Internal Management Policies**

### 8.1 Management Structure

The Trust and Board are continuously examining ways to bring their agendas closer together and save costs by organising and managing the two organisations in the most cost effective way.

A part of their obligations is to manage their own administration, budgets and financing. In the case of the Board, this has traditionally been done by a Clerk (an external agent with relevant experience and interest – usually an Accountant or Land Agency). The Trust manages its own administration and financial affairs with the assistance of a secretarial service.

Over the period of this plan both organisations will be examining any advantages in bringing these two services closer together.

Objective:

- It is always good practice to review managerial structure
- Administrative cost savings should always be a priority
- Financial management practice should always be subject to review and audit

### 8.2 Membership

The Trust has a paid up membership of approx 60 individuals. It also has an affiliated membership of a further approx 250 (through Angling Associations etc). A complete review of the membership will be carried out by spring 2009 with a view to simplifying the system and obtaining a greater level of reliable financial support.

Objective:

- Membership has the potential to be further developed into a major funding source



- Representing a larger number of people will provide the Trust with greater credibility

### 8.3 Relationship with Estate Workers & Ghillies

The Director of the Board & Trust holds regular seasonal meetings with ghillies and estate workers to provide a forum for information and ideas exchange. This is well attended and is generally found to be a useful communications tool.

This will be continued over the life of this plan as it is regarded as essential that all river workers are able to work in harmony and with a co-ordinated development plan, the aim of which is always to add to the greater good of the fisheries.

### 8.4 Review

A part of managing the FMP process is that it is constantly reviewed and altered to suit changes in circumstance. This ensures that it grows, evolves and becomes increasingly fit for purpose as it progresses.

A wide range of analytical tools may be used in stock assessment and project delivery. Improved tools should be sought and applied as the plan is reviewed and updated.

Tools that may be applied include;

- Development of conservation plans
- Use of trapping and counter data
- Comparison with a variety of historical data which may be on catchment, regional or national basis
- Juvenile stock data, recent and historical
- Development of analytical models
- The use of analysis over a variety of scales



The Plan will be subject to annual review by the Trustees, Board Members and Scientific Advisors to the Kyle Trust and Kyle Board. Additionally, where appropriate, all projects will be subject to monitoring processes to assess success, delivery or otherwise. The assessment of results of monitoring programmes will form a part of the review process.

Local consultees will be: Trustees, SNH, SEPA and the relevant local departments of FC, HIE, HC & SSE. It will also be available for viewing on the Kyle Trust website.

SEPA is keen to work with the Trust to deliver improvements in the water environment. Consequently, it is important to make sure that work identified in the Fishery Management Plans and the River Basin Management Plans are coordinated. The Area Advisory Group can be instrumental in coordinating work between organisations.

By adopting an all inclusive policy on review, both at draft and at annual stages, the Trust expect that this will assist with granting credibility and viability to the Plan.



<b>Issue</b>	<b>Action</b>	<b>Timing</b>	<b>Funding partners</b>	<b>Comment on Costings</b>	<b>Priority</b>
Kincardine Hatchery	Maintain production for Shin	Annual	SSE / Board		High
Bankside/In-river M/ment	Maintain advisory status	On-going	Estates		Med
Hydro	Maintain good working relationship	On-going	N/a		High
Designations	Work within restrictions & limitations	On-going	N/a		High
Fisheries Protection	Maintain current high standard	On-going	Board		High
Habitat Restoration	Deliver current project & develop more	On-going	FC / Estates / Riparian Owners / European Nature Trust	> 2m	High
Identify & map obstacles to fish movement	Project scoping / allocate work to graduate employee	2008	HIE (Grad scheme) / Trust / Estates	Part of 20k pkg	High
Remove obstacles at Ben More, Invercassley & Spinningdale Burn	Ph1. Scoping studies Ph 2. Construction	2008/2009	SEPA / FC / Landowners	>100k	High
Open permanent fish access through Gleann Beag Dam	Continue working with SSE to achieve success	On-going	S&SE / Estate / others		High
Education – SIC / WEP	Pursue fundraising activity for 2009 season	2009 onwards	Scottish Power / Trust / HIE / HC	4500 / yr	High
Communications	Newsletters / websites. Review combining publications	2009 onwards	Self	Savings	Low
Electro fishing programme	Continue with existing programme to satisfy research requirements	On-going	Board		High
Moray Firth Sea Trout Project	Continue support & m/mnt	On-going	24 in total	>156,000	High
Shin PIT project.	Finalise 3 yr project and develop action plan based on results	On-going	S&SE / Fishery Proprietors / Board	>90,000	High



<b>Issue</b>	<b>Action</b>	<b>Timing</b>	<b>Funding partners</b>	<b>Comment on Costings</b>	<b>Priority</b>
Fish Counter – River Evelix	Ph.1 Scoping plan Ph.2 Purchase & installation	2008 onwards	Proprietors / landowners /Trust & Board		High
Collate catch records	Project scoping – allocate work to grad placement	2008 /2009	Estates & Props / HIE (Grad scheme) / Board / Trust	Part of 20k pkg	Med
DNA Mapping	Develop & manage project	2008 onwards	Private donation / RAFTS / Board	75,000	High
Fresh Water Pearl Mussels	No internal agenda				
Non Native Species	Develop and implement bio-security plan	2009 onwards	AAs / Board / Trust / SNH		High
Sponsor Research Project Brown & Ferox Trout / Aquaculture in Loch Shin	Identify students with Uni/College	2009	Uni / College / Trust / HIE	1 – 2k annually	Med
Small scale hydro	Work as consultees as required/requested	On-going	Possible income stream		Med
Disabled persons' fishing facility	Support KAA in their work of promoting the facility	On-going	N/a	14,500	Med
Tain/Aldie Burn Restoration and Management	Scope out project and attract local participation	2008 onwards	Local stakeholders / Tain Common Good Fund		Med
Employment	Maintain & improve on current levels	On-going	All stakeholders	200k annual salaries	High
Compliance & liaison with local interest groups	Maintain high status of compliance and liaison	On-going	N/a		High
Internal M/mnt Structure	Regular review	On-going	N/a		Med
Membership	Regular review to improve participation and increase income	2008 onwards	Trust	Income stream	High



<b>Issue</b>	<b>Action</b>	<b>Timing</b>	<b>Funding partners</b>	<b>Comment on Costings</b>	<b>Priority</b>
Relationship with Estate workers & Ghillies	Increase effort for group involvement in regular forums	On-going	Trust / Board		High
Annual FMP review	Identify dates and peer groups for regular review	On-going	Stakeholders		High
Aerial Mapping	Identify in-river and riparian zone habitats	2010 onwards	Sponsors to be identified		High
Radio Tracking	Add detail to DNA mapping	2011	Sponsors to be identified		Med
Ferox trout in Loch Shin		2011	Sponsors to be identified		Med
River Shin Management Review	Design research programme with SSE	Present and on-going	Sponsors to include SSE & Trust/Board		High
Study of population dynamics of fish species other than salmon	Design project parameters	2009 onwards	Sponsors to be identified		High

Created by: Kyle of Sutherland Fisheries Trust  
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In consultation with:  
Association of Salmon Fishery Boards (ASFB)  
Kyle of Sutherland District Salmon Fishery Board (KoSDSFB)  
Rivers and Fisheries Trusts Scotland (RAFTS)  
Scottish & Southern Electricity (SSE)

Fisheries Research Services (FRS)  
Forestry Commission Scotland (FCS)  
Highland Council (HC)  
Highlands & Islands Enterprise (HIE)  
Scottish Environmental Protection Agency (SEPA)  
Scottish Natural Heritage (SNH)