TRIPARTITE WORKING GROUP

CONCORDAT AND REPORT

WILD AND FARMED SALMONIDS

ENSURING A BETTER FUTURE

WILD AND FARMED SALMONIDS - ENSURING A BETTER FUTURE

CONCORDAT

1.1 Foremost amongst Scotland's natural resources are its salmon and sea trout. Long recognised for the important contribution which they make to various aspects of Scottish life, their decline over a number of years has been a source of considerable concern. This concern has been most manifest in the north west of Scotland (all systems north of the Clyde) where problems for sea trout have been particularly acute.

1.2 Scotland's rivers, lochs and coastal waters which provide suitable habitat for wild salmon and sea trout have also offered the opportunity for the development of a sustainable aquaculture industry. Co-existence of wild salmon and sea trout fisheries and salmon farming has generated conflicts.

1.3 It was against this background that the signatories to this document met on 3 June and agreed to establish a Tripartite Working Group, chaired by the Scottish Executive Rural Affairs Department, to explore how such conflicts might be removed in future.

The agreed Terms of Reference of the Tripartite Working Group are:

> "Having regard to the serious decline in wild salmon and sea trout stocks in the west of Scotland and to the sustainability of the salmon aquaculture industry:
>
> 1. To develop and promote the implementation of measures for the restoration and maintenance of healthy stocks of wild and farmed fish, including:
>
>   - Environmental standards and husbandry practices.
>
>   - The availability and implementation of effective medicinal treatments.
>
>   - Fallowing and rotation strategies.
>
>   - Location of sites.
>
> 2. To develop and promote the initiation of measures for the regeneration of wild salmon and sea trout stocks, including:
>
>   - Identification of the river systems which are of highest priority, in terms of imperilled sea trout and salmon stocks.
>
>   - The design of procedures to develop restoration projects for these systems.

- Preparation of a broodstock programme to hold stocks from fragile systems until restorative action is possible.

3. To propose arrangements at a local and national level for taking forward the foregoing and to ensure that the results of this work are reflected in the development of Local Authority fish farm planning guidelines and Framework Plans."

Membership is set out at Annex 1.

1.4 As a Group, we subsequently met on 8 September, 11 November and 27 March. Some members of the Group also had a meeting with representatives of the fish farming companies on 27 January this year to discuss the concept of Area Management Agreements (AMAs). This work is continuing. In particular the proposed wider approach has been, and will continue to be, explored at a local level by Area Management Groups (AMGs).

1.5 Our discussions have been conducted in a frank and constructive way with an acknowledgement on all sides of the spirit of co-existence and collaborative working. All of us recognise that restoration and maintenance of Scotland's wild stocks of salmonids are essential for many reasons including conservation, employment and support of regional economies. Similarly, we acknowledge the considerable contribution which fish farming has brought to remote rural areas where alternative employment opportunities are limited. The issue we have faced is how to conduct activities in common waters which ensure the maintenance of a healthy stock of wild fish whilst at the same time promoting a sustainable aquaculture industry.

1.6 A report of the work undertaken on behalf of the Group by sub-groups and subsequently endorsed by the main Group is attached.

1.7 Our principal conclusion is that there must be closer co-operation at a local level between the interests of wild and farmed salmonids, building, where appropriate, on the salmon farming Groups subscribing to the Sea Lice Strategy Management Areas and involving the West Coast Fishery Trusts already established. To that end, we have encouraged the development of Area Management Agreements. These are being drawn up by the relevant parties to ensure that the potential impact of aquaculture on wild fish, with particular regard to sea lice production, is minimised to create conditions in which wild fish populations could successfully co-exist with a viable aquaculture industry. Co-operation on the following issues will be required to achieve this:

- identification of suitable sites for aquaculture – including evaluation of existing sites;

- development and implementation of husbandry practices eg, fallowing, rotation and sea lice control strategies designed to minimise the impact of sea lice on wild fish populations;

- the promotion of the responsible and strategic use of new sea lice treatments to complement such practices; and

- a means for an open exchange of information between wild and farmed fish interests to support the above.

1.8 We see the adoption of such an approach throughout the west of Scotland as a reasonable ultimate objective. We recognise that such an approach will have resource implications but our view is that, given a positive attitude by participants, there are benefits in the initiative for all concerned. In the short-term however, and to allow for experience to be gained, we have proposed that the approach should be tested in pilot areas. These areas are described in Chapter 1.

1.9 We are pleased to note that the next stage of the process has begun with several Area Management Agreements already prepared and under discussion in the following areas:

Laxford – Laxford/Loch nan Thull/Bad na Baithe systems
West Loch Tarbert (W. Isles) – Meavaig/Leosaid/Eadurra/Laxdale/Halladale systems
Fyne – Fyne/Kinglas/Shira/Aray/Douglas/Leachann systems
Ewe – Ewe and Loch Maree, Loch Sguod and Tournaig systems
Torridon – Torridon, Balgy, Sheildaig and Corrie systems
Carron/Kishorn – Carron, Kishorn and Attadale systems
Lochaber – Linnhe/Lorn/Sound of Mull/Nevis systems etc.

Preliminary work on developing a restoration strategy is underway. An institutional framework to support restoration has been developed and this is described in Chapter 3.

1.10 We are grateful for the contribution which Scottish Natural Heritage and the Scottish Environment Protection Agency made to our deliberations. The support which these bodies have given to the approach outlined is welcomed and we see their involvement (and possibly that of other bodies such as local authorities), as being equally crucial at the local level.

1.11 As a Group, we would urge a positive response by all those with an active interest in the matter. We firmly believe that this co-ordinated approach is in the interests of all concerned and essential for the joint objectives of securing strong, healthy wild stocks and a sustainable aquaculture industry.

1.12 We propose to continue to meet and receive regular updates on progress and problems from the Area Management Groups (AMGs). The TWG will also have a developmental role and will encourage: the development of other AMAs; better relations between wild and farmed fish interests; and the development of ideas about how to reconcile further the problems that exist between the two interests.

Signed…….
Association of Salmon Fishery Boards

Signed…….
Scottish Anglers National Association

Signed…….…….
Atlantic Salmon Trust

Signed…….
Association of West Coast Fishery Trusts

Signed……...
Scottish Executive Rural Affairs Department

Signed…,…...…….…
Scottish Quality Salmon

ANNEX 1

MEMBERSHIP OF TRIPARTITE WORKING GROUP

Scottish Executive

Dr Paul Brady (Chairman)	- Scottish Executive Rural Affairs Department
Mr George Thomson	- Scottish Executive Rural Affairs Department
Miss Diane McLafferty	- Scottish Executive Rural Affairs Department
Mr Gordon Brown	- Scottish Executive Rural Affairs Department
Mr David Dunkley	- Scottish Executive Rural Affairs Department
Miss Joy Dunn Mrs Gillian Moynihan	- Scottish Executive Rural Affairs Department (Joint Secretaries)

Dr Dick Shelton	- Freshwater Fisheries Laboratory, Faskally
Dr Andy Walker	- Freshwater Fisheries Laboratory, Faskally
Dr Ron Stagg	- Marine Laboratory, Aberdeen
Dr Alasdair McVicar	- Marine Laboratory, Aberdeen
Dr Anne McLay	- Marine Laboratory, Aberdeen

Dr Willie Duncan	- Scottish Natural Heritage
Professor David Mackay	- Scottish Environment Protection Agency

Wild Fish Interests

Mr Andrew Wallace	- Association of Salmon Fishery Boards
Mr James Butler	- Association of West Coast Fishery Trusts
Mrs Jane Wright	- Scottish Anglers National Association
Mr Jeremy Read	- Atlantic Salmon Trust

Fish Farming Interests

Lord Lindsay	- Scottish Quality Salmon
*Mr William Crowe	- Scottish Quality Salmon
Dr John Webster	- Scottish Quality Salmon
Mr Angus Morgan	- Scottish Quality Salmon
†Mr Gordon Rae	- Scottish Quality Salmon

*until November 1999
†from November 1999

ANNEX 2

Framework agreement between salmonid farming and wild salmonid interests.

1. Background and introduction

The Tripartite Working Group (TWG) was established in June 1999 against a background of declining stocks of salmon and sea trout in rivers on the north west coast of Scotland and an acknowledgement of the continuing importance of aquaculture and wild salmonid fisheries to the rural economy. Its purpose is to address problems common to salmonid farming and wild salmonid fisheries and to seek solutions for mutual co-habitation. Membership of the Group is drawn from the Scottish Executive, scientists from the Executive's Fisheries Research Agencies, the salmon farming industry and representatives of the wild fisheries interest groups.

Amongst other things, the TWG considered how existing fallowing and sea lice strategies might be adapted to provide improved benefits for both wild salmonid and farmed salmon stocks. The result is a framework agreement setting out the general principles which local Area Management Agreements (AMAs) should seek to incorporate.

2. Area Management Agreement (AMAs).

With the objective of promoting and maintaining the good health of both wild and farmed salmonids, AMAs between fish farming companies and District Salmon Fishery Board (DSFBs)/Fishery Trusts should be formally established at local levels. These AMAs should be formed either through their incorporation into AMAs already existing between farming companies or by the creation of new AMAs where inter-farm agreements do not already exist.

An Area Management Group (AMG) should be established to formulate and manage each AMA. Group members will include representatives of local salmonid farms, the local Fisheries Trust Biologist and/or trustees and a representative of the local DSFB where present. The Group may invite attendance from other relevant parties (eg SEPA, SERAD, Area and Community Councils) as appropriate.

3. Joint AMA Measures

The joint AMAs should aim to incorporate the following measures:

a) Synchronised production: To ensure the breaking of cycles of diseases and parasites, the fish farm production and fallowing cycles should be synchronised within an area. This requires the use of single year classes in the area. It is recognised that farmers with one site will have difficulty in achieving this. Where changes in farm practices would result in significant production losses the AMA will consider supporting the development of new sites or increase in production within the management area.

b) Zero ovigerous sea lice objective: Salmon farms in AMAs should have the objective of continuously achieving zero ovigerous salmon lice on stocks. This objective is most critical during the period immediately prior to and during the wild smolt migration periods (February - June inclusive). This can be achieved through:

- strategic timing of fallowing of sites (February - April) or
- rigorous zone control of lice by best currently available treatment methods and synchrony of treatments between farms in the zone.

c) Furunculosis vaccination: To reduce risk to wild fish from furunculosis in farmed stocks, only smolts vaccinated against this disease should be used within the AMA area.

d) Farm escapes: To minimise the risk from escaped farmed salmon, the recommendations of the Escapes Working Group should be taken into account by farms within the AMA area.

e) Relocation: To consider the relocation of some fish farm sites in particularly sensitive areas, if necessary by encouraging the development of new, more suitable sites, or by increasing the production in less sensitive sites within the general area.

f) Other Codes of Practice: To maintain general high health status of farm stocks, accepted best husbandry practices should be used as recommended by the Scottish Salmon Growers' Association, now Scottish Quality Salmon, Codes of Practice and the recommendations made by the Joint Government/Industry Working Group on Infectious Salmon Anaemia.

4. Monitoring.

Each AMG should submit bi-annual progress reports to the TWG. The reports should, in addition to highlighting successes, highlight any problems arising in the AMA.

REPORTS FROM SUB-GROUPS

CHAPTER 1 - CLASSIFICATION AND IDENTIFICATION OF PRIORITY RIVER SYSTEMS

1.1 As a first step, all parties agreed that it was important to categorise and identify the principal river systems on the north west coast that required action. A sub-group was formed to take forward this important first step with the following terms of reference:-

> "Mindful of the resolve to develop and promote the implementation of measures for the restoration and maintenance of healthy wild and farmed stocks, sub-group 1 will categorise the principal river systems on the north west coast (north of the Clyde) into differing priorities for action based on the following criteria. Systems where remedial measures are likely to prove practical and cost effective will be afforded first priority. It is intended that work on more complex systems and situation will benefit from information generated by this process. Criteria (no order):
>
> - the status of the stocks of salmon and sea-trout in these systems;
> - the river and local marine ecology of these systems;
> - the presence of established monitoring programmes;
> - the presence of fishery trusts;
> - the size, proximity and complexity of fish farming operations in these areas."

1.2 This was done by examining the status of stocks of salmon and sea trout in these systems and taking into account river and local marine ecology, the presence of fishery trusts as well as the sizes, proximity and complexity of fish farming operations in these areas. The sub-group looked in detail at 10 sites and the following 9 sites were agreed as potential pilot areas. One area was dropped because the fish farming operation was specific to rainbow trout:-

- Laxford
- West Loch Tarbert (covering River Systems – Meavaig, Leosaid and Eadarra).
- Ewe (also covering River Systems Ewe and Loch Maree).
- Torridon (covering River Systems Torridon and Balgy).
- Carron/Kishorn.
- Ailort.
- Linnhe/Eil (covering Lochy, Leven and Coe river systems).
- Nevis (covering Inverie and Carnach river systems).
- Fyne.

CHAPTER 2 - FALLOWING AND SEA LICE STRATEGY/PILOT PROJECT

2.1 Sub-group 2 considered practical actions which could be applied to fallowing and rotational strategies and sea lice treatments, particularly in relation to the pilot areas identified in Chapter 1. The terms of reference for the sub-group were as follows:

> "Mindful of the resolve to develop and promote the implementation of measures for the restoration and maintenance of healthy stocks of wild and farmed fish, and taking into account the husbandry and management proposals of the Joint Government/Industry Working Group on ISA (JWG), identify practical actions which can be implemented with reference to fallowing and rotational strategies, sea lice treatments and locations of sites."

2.2 A working document on "Proposed Lice and Disease Management Protocol for Salmon Farms", prepared by one member of the sub-group, together with an awareness of the proposals being developed by the JWG on ISA, formed the basis for the development of a draft model agreement between salmon farmers and wild salmonid interests. This addressed the practical procedures for control of sea lice and other diseases, which might be implemented at a local level. Although the smolt input on a farm between S1 and S½ would achieve a 6 month fallow period, the estimated loss in production (20%) on a farm would make this option economically unrealistic for most farmers. Emphasis was therefore placed on the proposed alternation of the need to achieve good lice control in the critical period prior to and during smolt runs.

2.3 It was proposed that should suitable locations be identified where fish farming practices could be modified, (such as by changing production cycles) leading to improvements in health of farmed and wild stock, then proposals for suitable new farm developments to offset production losses should receive support as part of Area Management Agreements (AMAs).

2.4 The lack of effective authorised sea lice medicines was recognised to be a major difficulty in controlling sea lice on fish farms. The recent and pending authorisation of new in-feed treatments to some extent addresses this problem and may also help to address SEPA's concerns about synchronous treatments in areas. The time taken to deal with applications for use of treatments was also recognised as a problem which could be addressed through additional staff and an increased focus on sensitive areas by regulatory agencies. How the public will perceive sea lice treatments also remains a matter for concern, particularly if new in-feed treatments are to be authorised for use by pilot areas by spring 2000. Public information meetings involving the manufacturer of emamectin may help to allay these concerns.

Framework Agreement

2.5 The "Framework Agreement between Salmonid Farming and Wild Salmonid Interests" (Annex 2 to the Concordat) sets out the general principles for AMAs, within which it could be possible for Area Management Groups (AMGs) to develop practical measures to facilitate the promotion and maintenance of healthy wild salmonid fish and farmed salmon stocks at local levels.

Priority Areas for Action

2.6 It was agreed that it would be desirable to establish as many AMAs as possible by Spring 2000 in the pilot areas identified by sub groups. In order to evaluate the effects of any fish health measures being implemented it would be important for farms at differing stages in their production cycles to be represented.

2.7 The recommendations of the sub-group are as follows:

- To facilitate the promotion and maintenance of healthy wild salmonid and farmed salmon stocks. Area Management Agreements (AMAs) based on the framework document (Annex 2) should be established and managed by local Area Management Groups (AMGs), initially on a pilot basis. AMGs should comprise representatives of local farming and wild salmonid fishery interests. There should be an inherent objective for a progressive evolution of AMAs to deal with wider objectives.

- The pilot sea lochs should be selected on the basis of the state of local salmonid stocks, the complexity and production pattern of the local salmonid farming industry and the level of local co-operation which can be achieved. Further development of AMAs to wider areas of the west coast should be encouraged.

- Regular consultation meetings by TWG should consider twice yearly reports from AMGs to evaluate the success of the AMAs at local and national levels, to consider unresolved problems and to identify solutions.

- The exchange of information between farming and wild salmonid interests should be encouraged in each AMG through an atmosphere of mutual trust and reflected more widely through the promotion of joint farming/wild fishery statements on this co-operation in the national and interest group press (eg farming and angling periodicals).

- The business of the local AMAs should remain the property of the local AMGs.

CHAPTER 3 - RESTORATION PROGRAMME

3.1 The restoration sub-group had the following terms of reference:-

> "Mindful of the resolve to develop and promote the implementation of measures for the restoration of healthy stocks, to identify the principles and processes which will be involved in the restoration, where and when possible, of wild fish populations affected by acute declines, having regard to financial, practical and other considerations."

3.2 The sub-group considered what is meant by the term restoration, current restoration and enhancement projects on the west coast and controls and responsibilities in relation to the stocking of salmonids. An important issue is local adaptation of salmonid populations and its implications for management. Funding, and a proposal for an institutional framework to support restoration programmes for salmonid populations in west coast rivers, were also discussed. The sub-group's conclusions and recommendations are set out below.

The difference between enhancement and restoration

3.3 Recognition of the difference between restoration and enhancement was identified as fundamental to the sub-group's deliberations. The aim of enhancement is to increase the number of fish returning to a fishery above the existing natural production level. Enhancement may take many forms. It may involve repeatedly stocking non-native or hatchery-reared fish to a river in an attempt to increase catches in subsequent years. This differs fundamentally from restoration which aims to re-establish or accelerate the recovery of natural, self-sustaining populations of fish. Restoration is likely to present the harder and slower road to improvement of the fishery. Furthermore, restoration ultimately requires that factors limiting natural production are removed. In restoration, actions which might compromise the natural self-sustaining character of populations are ruled out. Thus, while restoration is a form of enhancement, enhancement is not necessarily the same as restoration. The sub-group agreed that the objective for the west coast should be the restoration of self-sustaining fish populations which are capable of supporting economically viable fisheries, and that both sea trout and salmon should be considered.

Restoration based on local stocks

3.4 Most available advice stresses the importance of using local stock for restoration. This is based on the knowledge that salmon and sea trout home to their natal rivers to spawn and therefore exist as more or less reproductively isolated populations, genetically adapted (best-suited) to local conditions. Although evidence for local adaptation is largely circumstantial, collectively it constitutes a compelling case. The sub-group agreed that local adaptation should be accepted as a guiding principle, and that restoration initiatives should be based on local stocks wherever possible.

A comprehensive evaluation

3.5 It was also agreed that the development of a restoration strategy, or specific restoration projects, should be based on a comprehensive appraisal of the current situation. This should include an assessment of the status of the populations and changes in the fisheries, and information on the genetic and life history characteristics of fish inhabiting different rivers. Although some of this information is available, it has yet to be

systematically assembled. The sub-group considered that this would be best undertaken by FRS Freshwater Fisheries Laboratory (FFL), in conjunction with the Scottish Fisheries Coordination Centre (SFCC).

Appraisal of management options

3.6 When catches are in decline, stocking is often the first management option considered. It is, however, only one of a number of measures which might be applied in restoration. The sub-group agreed it is important that the costs, risks and likely benefits of all management options are thoroughly assessed, and the effects of any actions taken are monitored. Vulnerable populations might also benefit from habitat improvement or reduced exploitation. Several fisheries on the west coast now operate on a catch and release basis. The sub-group believes that others should be encouraged to consider this or other restrictions on fisheries to relieve exploitation pressure. On the basis of available information, the need to take fish from west coast rivers to establish living gene banks, or to maintain fish in culture as part of supportive breeding programmes, is difficult to assess. The principles, however, that the costs and risks of such actions need to be assessed in relation to the likely benefits, and that the results of any actions need to be monitored, still pertain.

3.7 The sub-group recognised that it would not be possible to offer prescriptive solutions or recommend the most appropriate course of action in particular areas or river systems. Local circumstances are likely to dictate what might be possible and what is most likely to succeed. Individual projects should be considered in the context of a restoration strategy for the west coast as a whole. Every effort should be made to share experiences and not to dissipate scarce resources.

Towards an institutional framework

3.8 The sub-group identified an immediate need for information and impartial advice on restoration projects to be available to fisheries proprietors, fisheries trusts and District Salmon Fishery Boards (DSFBs) and for a mechanism to evaluate and co-ordinate activity. It was agreed that most rapid progress in the development of optimal restoration programmes would be made by defining new roles and improving links between existing organisations. A suggestion for an institutional framework to support restoration programmes and details of how it might operate are set out in the Annex to this report. It was thought that a more co-ordinated approach, supported by the proposed review mechanism, would increase funding for restoration work.

When and where to start

3.9 A number of factors may be responsible for the decline of the west coast fisheries. Many people believe that a major one is the presence of the salmon farming industry in the area. Others point out that the beginning of the decline in catches pre-dates salmon farming, and therefore reserve some doubts. All indications are that mortality of salmonid fish in the marine phase of life is currently high. Throughout the sub-group's discussions concerns were expressed that this would render attempts at restoration ineffective. The sub-group were aware that others within the TWG are working towards the development of Area Management Agreements (AMAs), which will involve closer cooperation at a local level between the interests of wild interest groups and fish farmers. In the meantime, the sub-

group considers that proposals for restorative action should be developed and assessed and that priority should be accorded to restoration projects in areas in which AMAs are in place.

The recommendations of the sub-group are as follows:-

- FRS Freshwater Fisheries Laboratory and the Scottish Fisheries Coordination Centre should produce a comprehensive assessment of the current status of Scottish west coast sea trout and salmon populations and fisheries

- FRS should review available information on the genetics, life history characteristics and population structure of west coast sea trout and salmon populations

- Information on restoration and the relative merits, likely costs, benefits and risks of different approaches, including stocking, should be made available to Boards

- All relevant agencies and organisations should work towards the development of an institutional structure to support restoration programmes for sea trout and salmon on the west coast of Scotland

- Contingent on development of such a framework, proposals for implementation of restorative action in a number of pilot rivers should be developed and assessed. Should the TWG be successful in establishing AMAs, priority should be accorded to restoration projects in areas where they are in place.

ANNEX

TOWARDS AN INSTITUTIONAL FRAMEWORK FOR THE DEVELOPMENT, IMPLEMENTATION AND MONITORING OF SALMONID RESTORATION PROJECTS

Essential features

Given our currently limited understanding and the likely uniqueness of each river's restoration requirements, it is essential that restoration management is both river-specific and adaptive. The term 'adaptive' implies that any management mechanism should include the capacity to adjust current activities in the light of understanding gained from prior actions or actions taken elsewhere. The adaptive approach will require an institutional framework which optimally assembles available information and expertise to achieve programme planning, implementation, monitoring and evaluation, as well as the synthesis of observations across programmes to advance general knowledge. Such a framework needs to be put in place because the knowledge base required for the development of optimal river-specific restoration programmes does not reside within a single existing organisational body, and existing organisational links are inadequate for this purpose. A schematic of the basic elements of the process along with a proposed institutional framework for the Scottish context is attached (Figure 1).

Proposed operation

It is proposed that in the first instance, restoration programmes and river-specific management plans be developed by District Salmon Fishery Boards, Trusts or fisheries proprietors. Such plans should be based on a careful evaluation of all available information on the state of stocks and their environment in the context of the best current understanding of salmonid biology. Plans should have clearly defined objectives which are specific, measurable, realistic (appear achievable) and timed. The best methods for achieving these objectives should then be identified.

Assembling and appraising the available information and identifying the most appropriate course of action is the critical, and in many respects, the most difficult part of the process. In recognition of this, it is proposed that SERAD - FRS - FFL develop a mechanism for reviewing plans. This review process is not envisaged as a formal mechanism for approval or disapproval of plans, but rather as a means of promoting information exchange and providing advice at the initial stage of programme development. Others organisations such as Scottish Natural Heritage (SNH) and the Atlantic Salmon Trust (AST) might also be involved in the review process. It should be noted that such an arrangement would not preclude Boards using private consultants or others in the development of plans. It would, however, afford them access to another source of independent and up-dated advice prior to implementation. A mechanism linking those responsible for the development of plans with local authorities, and possibly agencies such as SNH and the Scottish Environment Protection Agency (SEPA) is thought to be desirable at the planning stage, as a means whereby the initiators of plans can obtain legal and planning advice and possible get greater support for local initiatives.

Depending on arrangements Boards, Trusts, management authorities, their staff and/or consultants could be responsible for programme implementation. FRS might also be

involved in implementation, monitoring and evaluation, particularly in cases where programmes were likely to be scientifically informative. Finally, a mechanism needs to be put in place whereby knowledge gained from working programmes can be used to increase general understanding and improve future programme design. It is proposed that SERAD-FRS-FFL play a central role in this, maintaining an updated knowledge base, whilst at the same time promoting and conducting relevant research.

Concluding remarks

Defining an optimal process and an appropriate and workable institutional framework for salmonid restoration in Scotland is not a simple issue. Many parties are involved. No single agency or organisation carries sole responsibility for the resource and there is no legislative requirement for co-operation. There is, however, considerable shared concern. It is thought that most rapid progress will be made by defining new roles and improving links between existing institutions and organisations. Definition of the roles and the nature of the links will require careful consideration. The framework proposed in Figure 1 is put forward as a starting point for this discussion.

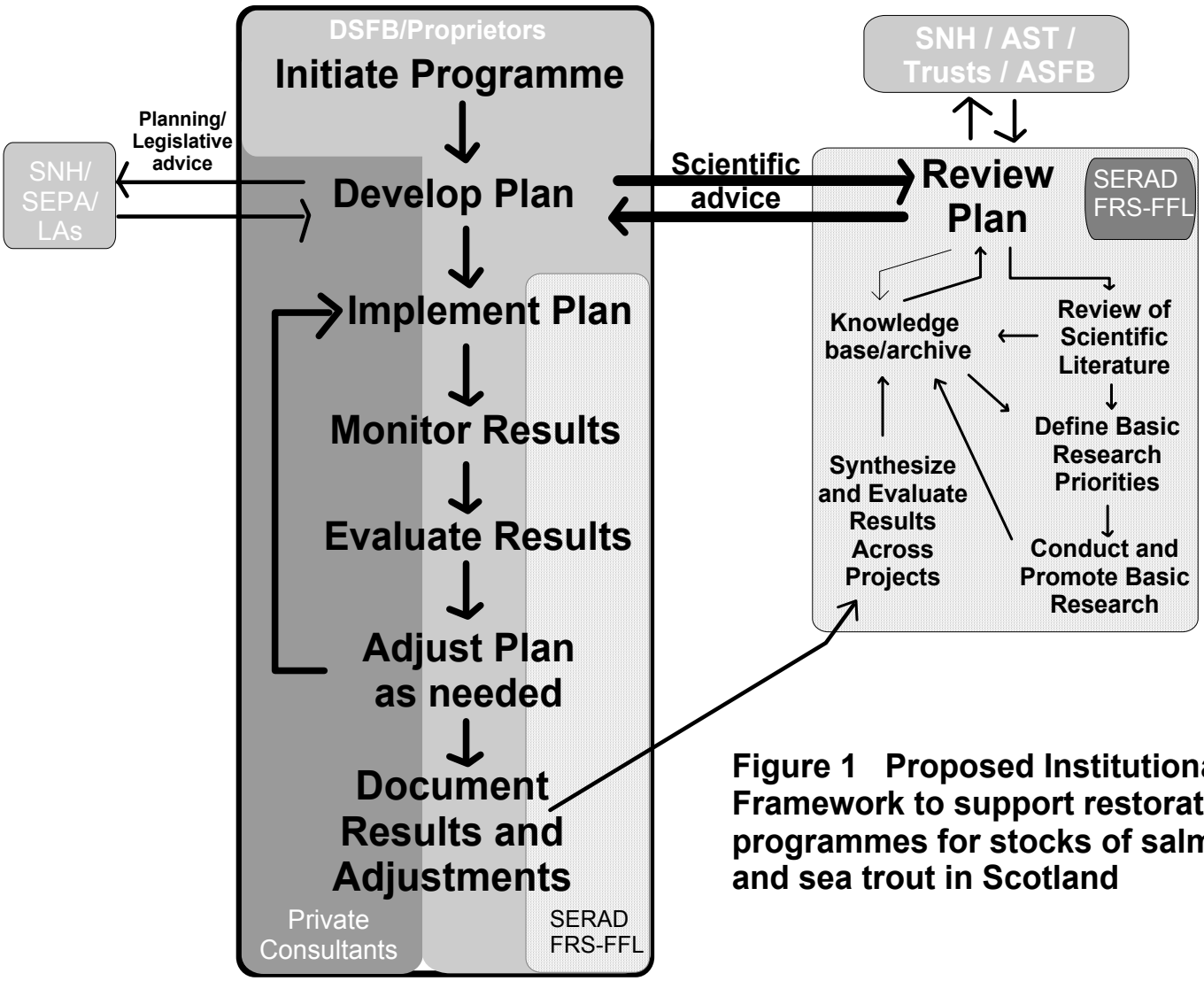

Figure 1 Proposed Institutional Framework to support restoration programmes for stocks of salmon and sea trout in Scotland