The Committee will meet at 10.00 am in Committee Room 2, to consider the following agenda items:

1. **Declaration of Interests:** The Convener will invite new members of the Committee to declare any relevant interests.

2. **Subordinate Legislation:** The Committee will consider the following negative instruments—
   - The Water Supply (Water Quality) (Scotland) Regulations 2001 (SSI 2001/207)
   - The Water Supply (Water Quality) (Scotland) Amendment Regulations 2001 (SSI 2001/238)
   - The Existing Facilities in Quality Partnership Schemes (Scotland) Regulations 2001 (SSI 2001/218)
   - The Public Service Vehicles (Registration of Local Services) (Scotland) Regulations 2001 (SSI 2001/219)
   - The Air Quality Limit Values (Scotland) Regulations 2001 (SSI 2001/224)

3. **Public Petitions:** The Committee will consider the following Public Petitions—
   - **PE 59:** PE59 by Mr Frank Harvey calling for the Scottish Parliament to take certain steps to improve passenger safety on public transport in Scotland.
   - **PE 113:** PE113 by the Campaign for Borders Rail on the reinstatement of a Borders Railway.
   - **PE 178:** PE178 by the British Aggregates Association, calling for the Scottish Parliament to investigate the implications for the Scottish economy of the aggregates tax and to make representations to the Westminster Parliament as appropriate.
   - **PE 334:** PE 334 by Mr Tony Southall on behalf of the Scottish Campaign for Nuclear Disarmament, calling for the Scottish Parliament to ask the Scottish Executive to initiate a review of Emergency Planning measures for nuclear
submarine accidents in Scotland to ensure there is adequate protection for the local population and the environment. The Committee will decide whether or not the petition falls within the remit of the Transport and the Environment Committee.

**PE 346**: PE 346 by Mr Lawrence Fitzpatrick on behalf of Scotland Opposing Opencast, calling for the Scottish Parliament to take various steps to protect local communities and the environment from the adverse effects of opencast coal mining in Scotland.

**PE 357**: PE 357 by Aberdeen City Council on Investment Transport Infrastructure.

4. **Petition PE 96 on Sea Cage Fish Farming**: The Committee will consider a paper from the reporters along with a paper outlining options for further consideration of this issue.
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<td>Papers relating to Petition PE 96 To follow</td>
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Subject: Petition PE59 – Petition by Mr Frank Harvey calling for the Scottish Parliament to take certain steps to improve passenger safety on public transport in Scotland.

Meeting No: 20th Meeting

Meeting Date: 5 September 2001

Author: Note by the Assistant Clerk

Introduction

1. This paper invites the Committee to consider for a second time a petition from Mr Frank Harvey which is concerned with (a) the passenger safety implications of overcrowding on public transport; and (b) the potential dangers caused by taking dogs on public transport. Mr Harvey is the sole signatory to the petition.

2. A copy of the petition is circulated separately as paper TE/00/2/6.

Progress of the Petition

3. This petition was referred by the Public Petitions Committee (PPC) to the Transport and the Environment Committee on 21 January 2000. In referring the petition, the PPC stated it was not requesting further any consideration of the petition unless the Transport and the Environment Committee felt that this was necessary.

4. The Transport and the Environment Committee considered the petition on 2 February 2000, and agreed to seek further information on the policy of the rail industry with respect to safety and overcrowding prior to further consideration of the petition. A response has been received from the Scottish Executive, and a copy of the response is attached with this cover note.

Petitioner's Specific Requests

5. Mr Harvey's first request is that a limit is placed on the number of passengers travelling on public transport in Scotland. The background to this request is his concern that over-crowding on trains is compromising passenger safety.

6. Passenger safety on public transport is a reserved matter. The response received from the Executive indicates that it is specifically a matter for the Health and Safety Executive. The Executive response notes, for information, that the current franchise performance payments system for surface trains penalises overcrowding. In relation to buses, capacity levels are prescribed under
7. Mr Harvey’s second request is that all dogs, apart from guide dogs, should be banned from public transport. During the Committee’s previous discussion on this petition, members raised some concerns at the possible impact of such a blanket ban. It would prevent, for example, sheep dogs travelling on ferry crossings to island communities.

8. The petition is concerned specifically with potentially dangerous dogs which are permitted to travel on public transport.

9. The response received from the Executive sets out the legislation governing the control of dangerous dogs. The Dangerous Dogs Act 1991 makes it an offence for anyone in charge of a dog to allow it to be dangerously out of control in a public place (the definition of which would include public transport). The definition of “dangerously out of control” would include occasions where there are grounds for reasonable apprehension that the dog will injure a person, regardless of whether it actually causes injury. The Executive considers this current legislation to be effective.

Options

10. The Committee is invited to take a view on the specific requests for action made in the petition:

- that a limit is placed on the number of passengers travelling on public transport in Scotland; and
- that all dogs, apart from guide dogs, should be banned from public transport.

11. There are a number of options available to the Committee to take forward or conclude consideration of this petition. Options open to the Committee include:

Option A

12. To conclude the petition by writing to the petitioner to inform him which areas of his petition relate to reserved matters, and to forward to him a copy of the Scottish Executive’s response to the Committee on his petition.

Option B

13. To seek further information on the issues raised in the petition. If the petition is not concluded at this meeting, it will be brought back to the Committee at a future meeting once this additional information has been received.

Other Action
14. The Committee can of course take any other competent action it deems appropriate.

Recommendation

15. The Committee is asked to consider how it wishes to respond to the petition.

Alastair Macfie
Assistant Clerk to the Transport and the Environment Committee
August 2001
TRANSPORT AND THE ENVIRONMENT COMMITTEE

AGENDA ITEM

TE/01/

Subject: Petition 113 – Petition by the Campaign for Borders Rail on the reinstatement of a Borders Railway

Meeting No: 20th Meeting

Meeting Date: 5 September 2001

Author: Note by the Clerk

Introduction

1. This paper updates the Committee on the progress of Petition PE113, invites members to consider the current position and suggests options for its conclusion or further consideration. The following documents relevant to consideration of the petition are attached:

- the petition
- letter from the Enterprise and Lifelong Learning Committee
- letter from the Rural Development Committee
- memo from the Social Justice Committee
- letter from the Executive and Volume 3, Part 7 “Funding and Development” of the Borders Railway Feasibility Study
- Executive memo on Scottish Borders Railway Feasibility Study
- executive summary of the Scottish Borders Railway Feasibility Study
- Executive news release on £1.9M Public Transport Fund award to Scottish Borders Council
- progress report from Scottish Borders Council.

Background

2. The petition was submitted by the Campaign for Borders Rail. The petition states the petitioner’s view that the reinstatement of a railway into and through the Borders is vital for the area’s future well being and requests that the Scottish Parliament “consider ways of making this aspiration a reality through:

- initiating debate in the Parliament;
- examination of the issues before the Social Inclusion and the Transport and the Environment Committees
- securing the release of public finance to fund the scheme.”

Progress of the Petition

3. The petition was considered by the Public Petitions Committee (PPC) on 27 March 2000 when it was formally referred to the Transport and the Environment
TRANSPORT AND THE ENVIRONMENT COMMITTEE

Committee. This Committee considered the petition on 4 April 2000 and agreed to consult the Enterprise and Lifelong Learning Committee, the Finance Committee, and the then Rural Affairs and Social Inclusion, Housing and Voluntary Sector Committees. The titles of these last two Committees have since been changed to the Rural Development and Social Justice Committees respectively. (This paper will refer to these two committees by their current names).

4. The Committee also agreed to write to the Executive to clarify the potential mechanisms for, and sources of, funding for a railway into and through the Borders and to request that a summary of the Scottish Borders Railway Feasibility Study be provided.

Enterprise and Lifelong Learning Committee

5. The then Convener of the Enterprise and Lifelong (E&LL) Learning Committee John Swinney wrote to the Convener on 31 May stating that the Committee recognised the advantages that the re-instatement of railway would bring to economic development and tourism. However, he also reported that members had expressed some concern about the issue of obtaining the Parliament’s support for securing the release of public funds to finance the development

Rural Development Committee

6. The then Convener of the Rural Development Committee Alex Johnstone wrote on 3 May stating that the Committee had agreed to express its unanimous support for the petition. Mr Johnstone also stated his intention to write to the Parliamentary Bureau to request that a debate be held in the Chamber on the matter. This debate subsequently took place on 1 June 2000.

Social Justice Committee

7. The clerk to the Social Justice Committee reported that Committee’s views in a memo dated 21 September 2000. The Committee had written to the Scottish Borders Council seeking its view on the social inclusion implications of reinstating the railway and also wrote to Edinburgh City Council to ascertain its views on the significance of a Borders Rail Connection.

8. Copies of the responses received are attached. Scottish Borders Council response stated that it had not commissioned any specific work on social exclusion arising from the lack of a Borders rail link. However the Council highlighted a number of issues such as access to jobs and educational deprivation where it felt that the reinstatement of the railway may have an impact and which might benefit from further research.

9. In their response Edinburgh City Council stated its view that “Edinburgh would benefit from the Borders Rail in increasing the city’s labour market by a more sustainable form of public transport and the Scottish Borders and Midlothian would benefit from greater accessibility to the city’s employment opportunities. The wider Scottish community would be able to share in Edinburgh’s growing
TRANSPORT AND THE ENVIRONMENT COMMITTEE

prosperity. The City of Edinburgh Council, therefore, welcomes the Borders Rail proposal with enthusiasm."

10. Having considered these responses the Social Justice Committee took the view that the lack of a railway link does have social inclusion implications. The Committee also stated that while recognising the importance of the rail link to the Borders it did not wish to focus on one specific proposal, but on the social inclusion implications of transport issues across Scotland.

Finance Committee

11. The Finance Committee made no comment on the petition.

Scottish Executive

12. A reply was received from the Scottish Executive which in relation to funding mechanisms referred members to Part 7 of Volume 3 of the feasibility study. A copy of this part of the report is attached.

Debate in the Parliament

13. On 1 June 2000 the Parliament debated the following motion lodged by Alex Johnstone MSP on behalf of the Rural Affairs Committee: S1M-922—That the Parliament recognises and endorses the case for the establishment of a railway linking the Scottish Borders to the national network at Edinburgh and Carlisle and urges the Scottish Executive to consult with the Strategic Rail Authority and others to facilitate its establishment. After debate, the motion was agreed to (DT

Scottish Borders Railway Feasibility Study

14. On 15 February 2001 Sarah Boyack, Minister for Transport announced the publication of a feasibility study by consultants Scott Wilson into the reopening of the Borders Railway. An Executive summary of the report is attached. The study was commissioned by the then Scottish Office together with Scottish Borders Council, Midlothian Council and Scottish Borders Enterprise with support from Railtrack and Virgin. (A fuller summary report was also produced and can be provided on request. In addition the SPICE Research Note 00/39 also contains a summary of the reports findings.)

15. Key findings in the report included:

- A half hourly service between Tweedbank (Central Borders) and Edinburgh could cover its own direct operating costs, with a slight operating surplus in its first year of operation (assumed 2006) of £0.68M (1997 prices). The capital cost of providing this service was estimated at around £73M.
- A frequent passenger service from Gorebridge to Edinburgh could also cover its direct operating costs with a similar level of service at an estimated capital cost of £27M.
TRANSPORT AND THE ENVIRONMENT COMMITTEE

- The cost of reinstating the entire Waverley route (Edinburgh to Carlisle) is estimated at over £100M in capital costs. The train operating companies and Railtrack are reported as seeing few benefits to such a route because it would be relatively slow for passengers, with too many steep gradients for freight compared to the East and West Coast Main lines.

Project Funding

16. The feasibility study indicates that, in relation to reinstating the rail infrastructure from Kinnaird Park (the planned terminus of the Edinburgh Crossrail service) to Tweedbank, the projected operating surplus could only support (in addition to generating an operator profit margin) project financing costs of no more than £5-£10 M.

17. Given that the estimated capital cost of reinstating the link to the central Borders is £73 M, the report indicates that the major part of the capital cost of the project will have to be found from external sources.

18. The report goes on to examine potential funding sources. In essence the report sees the scope for private sector funding (from developer contributions or existing businesses) as limited. A range of “public sector funding routes” are assessed including European funding, central government funding (including the Public Transport Fund, the Rail Passenger Partnership and PFI) local authority and local enterprise funding. The report concludes that “It is clear that the bulk of the capital cost will have to be met by the public sector and most of that from central government.” The report continues “the structures under which the project should be financed and procured are no more easy to decide upon than how the funding is to be sourced.”

Public Transport Fund Award

19. In November 2000 the Minister for Transport announced an award of £1.9M (approx) to Scottish Borders Council under the third round of the Public Transport Fund. The award was to help meet the costs of preparing the Parliamentary Order which is necessary to secure permission for reinstating the railway between Edinburgh and the Central Borders. In making the award the Minister emphasised that it did not mean that any future public funding for development of the project would be granted.

Current Position

20. Having made the award outlined above, the Executive position is that it is now a matter for the promoters of the railway, headed by the Scottish Borders Council, to establish the costs of the project and, if necessary, identify the need for public funding. A progress report from Scottish Borders Council is also attached giving the latest information from their perspective.

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1 Scottish Borders Railway Feasibility Study, Volume 3, Part 7 – Project Funding and Development, paras 1 and 2 pg 19.
Role and Remit of the Committee

21. The petitioners' request that the Parliament consider ways in which a railway in the Scottish Borders might be reinstated consists of three main elements. Two of these, to initiate debate and to have the issues considered by relevant Committees have already been met. The third aspect of the petition relates to the Parliament securing the release of public finance to fund the scheme. This final request is not within the gift of the Committee. However, the Committee could express a view on the issue of finance if it so wished.

22. Clearly securing funding for the route is complex and is currently the subject of detailed consideration by the Scottish Borders Railway Working Group. Consequently it may be difficult for the Committee to give a definitive view on how funding is to be secured at this stage.

Options

23. There are a number of options available to the Committee in considering how to either conclude or take forward consideration of this petition. It should be noted that the possible options set out below are not exhaustive. They are also proposed taking into account the fact that the Committee has an agreed work programme that will take it into 2001.

24. Options open to the Committee include:

Option A

25. The Committee could agree to conclude the petition by writing to the petitioners with a copy of all the correspondence received by the Committee and a copy of the Official Report of the meeting.

Option B

26. The Committee could conclude consideration of the petition by undertaking option A and, in addition, writing to the Executive and/or to Scottish Borders Council to highlight any outstanding concerns which it feels are worthy of further review, requesting that such further review be undertaken and that the conclusions be made public in due course.

Other Action

27. The Committee could of course take any other competent action it deems appropriate.

Recommendation

28. The Committee is asked to consider how it wishes to deal with the petition.

Shelagh McKinlay
Clerk to the Transport and the Environment Committee
August 2000
Subject: Petition 178 – by the British Aggregates Association

Meeting No: 20th Meeting

Meeting Date: 5th September

Author: Note by the Clerk

Introduction

This paper invites members to conclude consideration of PE178 from the British Aggregates Association. A copy of the petition is attached, together with other relevant documents and items of correspondence.

Background

Petition PE178 requests “that the Scottish Parliament investigates the implications for the Scottish economy of the aggregates tax and to make representations to the Westminster Parliament as appropriate.”

The tax on aggregate extraction was announced in the Chancellor’s budget statement in March 2000. The tax is described by the BAA as an environmental tax. The purpose is to encourage a more sustainable use of aggregates (through for example, increased use of recycled aggregates.)

In their submissions the British Aggregates Association (BAA) express concern about the impact of the tax on the quarrying industry. They contend that since aggregate prices in Scotland are lower than in England, the percentage of revenue they are required to pay in tax is higher and that consequently the industry in Scotland will be disadvantaged by the tax. They also suggest that the tax will impact most heavily on smaller operators, which make up a larger proportion of the industry in Scotland.

Progress of the Petition

The petition was considered by the PPC on 9 May 2000 when it was referred to the Enterprise and Lifelong Learning (ELL) Committee. The ELL Committee considered the petition at its meeting on 31 May when it agreed to pass the petition to the Transport and the Environment, Rural Affairs and European Committees for their views.

The ELL Committee subsequently considered the petition at its meeting on 28 June when it agreed in principle to take evidence on this issue, but recognised that there were timetabling issues which would require to be resolved in relation to its wider work programme.
TRANSPORT AND THE ENVIRONMENT COMMITTEE

This Committee considered the petition at its meeting on 6 December 2000. The Committee agreed that the Convener should ascertain what approach to the petition would be taken by the ELL and, in particular, how it proposed to consider the environmental aspects of the petition.

The Convener therefore wrote to the Convener of the ELL Committee who subsequently confirmed that due to other important issues arising and significant changes in the Committee’s membership, the ELL Committee would in fact take no further action on the petition. The ELL Committee have therefore concluded their consideration of the petition.

Remit and Role of the Committee

The petitioner’s request that the Parliament investigate “the implications for the Scottish economy of the aggregates tax” is not a matter within the remit of Transport and the Environment Committee (reflected in the fact that the petition was referred not to this Committee but to the ELL Committee).

In addition, members will also wish to note that as a taxation issue, the introduction of an aggregates tax is a reserved matter.

Recommendation

Since the Committee to which the petition was referred under Standing Orders has concluded its consideration of the petition and the petitioner’s request is not within the remit of this committee, it is suggested that members conclude their consideration of the petition.

Shelagh McKinlay
Clerk to the Transport and the Environment Committee
September 2001
TRANSPORT AND THE ENVIRONMENT COMMITTEE

AGENDA ITEM
TE/01/

Subject: Petition PE334 – by Mr Tony Southall on behalf of the Scottish Campaign for Nuclear Disarmament

Meeting No: 20th Meeting

Meeting Date: 5th September

Author: Note by the Clerk

Introduction

This paper invites the Committee to give a view to the Public Petitions Committee (PPC) on whether it would be most appropriate to refer the petition to the Transport and the Environment Committee or the Justice Committee(s). Members should note that the petition has not yet been referred by the PPC and it is therefore not appropriate for substantive work on the petition to be undertaken at this point.

Background

Petition PE334 calls for the “Scottish Parliament to ask the Scottish Executive to initiate a review of Emergency Planning measures for nuclear submarine accidents in Scotland to ensure there is adequate protection for the local population and the environment.”

Progress of the Petition

The petition was considered by the PPC on 6 February, 13 March, 8 and 22 May 2001. The PPC has obtained comment on the petition from the Scottish Executive, Argyll and Bute Council and the Steering Group for Nuclear Free Local Authorities.

Remit and Role of the Committee

Defence and the nuclear energy industry are reserved matters, although Part I of the Environmental Protection Act 1990 and the Radioactive Substances Act 1993 are exceptions. (These acts deal with the duties of the Scottish Environment Protection Agency (SEPA) in relation to the keeping and use of radioactive material, the disposal and accumulation of radioactive waste and the regulation of non-nuclear waste and nuclear installations and would be relevant to the remit of the Committee.)

The petitioner’s specific request is that a review of emergency planning measures for nuclear submarine accidents be carried out. This is not a matter within the remit of the Transport and the Environment Committee. Responsibility for the issue sits clearly within the Justice Department at the Scottish Executive, and as such the petition should be referred to the Justice Committee(s).
TRANSPORT AND THE ENVIRONMENT COMMITTEE

It would of course be open to the Justice Committee to ask for this Committee’s views on any specific environmental points which would be considered on their merits in due course. However, it is not for this Committee to take the lead on the issue.

Recommendation

The Committee is asked to agree that the clerk notify the PPC that the petitioner’s request is not within the remit of the Transport and the Environment Committee and that consequently the petition would be more appropriately referred to the appropriate Justice Committee.

Shelagh McKinlay
Clerk to the Transport and the Environment Committee
September 2001
TRANSPORT AND THE ENVIRONMENT COMMITTEE

AGENDA ITEM
TE/01/20/11

Subject: Petition PE 346 by Mr Lawrence Fitzpatrick on behalf of Scotland Opposing Opencast calling for the Scottish Parliament to take various steps to protect local communities and the environment from the adverse effects of opencast coal mining in Scotland

Meeting No: 20th Meeting

Meeting Date: 5 September 2001

Author: Note by the Assistant Clerk

Introduction

1. The Petition was referred to the Transport and the Environment Committee by the Public Petitions Committee (PPC) on Thursday 24 May 2001. A copy of the petition is attached, together with the following relevant documents and items of correspondence—

   - A briefing paper prepared by the Clerk to the PPC for the Committee.
   - A letter from the Scottish Executive to the PPC dated 20 April 2001.
   - A fax from the Petitioner to the PPC dated 16 May 2001.

Background

2. The Petition was submitted to the Parliament on 9 March 2001 by Lawrence Fitzpatrick on behalf of Scotland Opposing Opencast. The Petition outlines the concerns of Scotland Opposing Opencast with regards to the Scottish Executive’s National Planning Policy Guidelines on “Opencast Coal and Related Minerals”, published in March 1999 (NPPG 16).

3. The petitioners argue that the final guidelines (NPPG 16) do not provide the level of protection for local communities and the environment as the draft guidelines (NPPG 4) would have provided.

4. The Petitioners state that whilst there has been an overall reduction in the UK production of coal by opencast mining since 1991/92, annual production in Scotland has risen. They further state that Planning Guidelines in Scotland are more favourable towards mineral operators than the English and Welsh guidelines.
5. The Executive has recently published proposed modifications to the Lothian Joint Structure Plan, which relates to Opencast coal mining. The petitioners believe that the proposed modifications further diminish protection to local communities and the environment with regards to Opencast Coal Mining.

6. In summary, the Petition calls on the Scottish Parliament to quash the Executive’s proposed modifications to the Lothian Joint Structure plan; to take action to ensure that changes are made to the existing guidelines to ensure protection for communities and the environment; and further to empower planning authorities to charge fees to cover the cost of monitoring and enforcing mineral permission, as provided for in paragraph 59 of NPPG.¹

**Progress of the Petition**

7. The Petition was initially considered by the PPC at its meeting on Tuesday 27 March 2001. The Committee agreed to seek the views of the Scottish Executive on the issues raised in the petition, and in particular its views on the impact of the changes made to NPPG 16; community consultation; and any differences in opencast planning guidelines between England and Wales and Scotland.

8. The Scottish Executive responded to the PPC on 20 April 2001. The response stated that “The introduction of NPPG 16 certainly did not ‘seriously diminish the level of protection to local communities and the environment’”. It further stated that “NPPG 16, in fact introduced greater protection for communities against repeat applications”. The response went on to state that the Scottish guidelines are as strong as the English guidelines with regard to Opencast mines².

9. The PPC considered the Executive’s response at its meeting on Tuesday 8 May 2001 and agreed to seek the views of the Petitioners on its contents.

10. The Petitioner responded to the PPC on 16 May 2001, and stated that—

   - Any authoritative definition of planning guidance is a matter for the Courts and should not rest on a statement by a civil servant.
   - The petitioners agree with Convener of the PPC who stated that it would be inappropriate for the Parliament to quash the proposed modifications to the Lothian Structure Plan³
   - The Executive failed to address the matter of the planning authority’s lack of ability to impose conditions to pay for supervision of work.

¹ Paragraph 59 states that “It will be for the Scottish Executive and Parliament to consider whether to empower planning authorities to charge fees specifically to cover the costs of monitoring and enforcing minerals permissions.”

² NPPG 16 states “in the interests of protecting communities and the local environment from the unacceptable adverse consequences of opencast working, the following tests should be applied. If the proposal does not satisfy on one of the above tests it should be refused planning permission unless there are exceptional circumstances”. The English equivalent, MPG 3 states that “there should normally be a presumption against development unless the proposal would meet the following tests”.

³ See PPC Official Report from Tuesday 27 March 2001, col 1009
TRANSPORT AND THE ENVIRONMENT COMMITTEE

- NPPG 16 and its predecessor NPPG 4 have gradually watered down the Government’s ten point plan for opencast coal mining, produced in 1997.
- There is less protection for communities and the environment as demonstrated in the case of the re-opened inquiry into the appeal by J Fenton & Sons Ltd, against refusal of detailed planning permission for an opencast coal site at Wester Torrance and at Netherton Farms, Harthill, North Lanarkshire.⁴

11. Mr Fitzpatrick asserts in his response to the PPC that the Executive, in its letter of 20 April 2001 did not address the issue of fees to cover the cost of monitoring and enforcing mineral permissions as proposed in paragraph 59 of NPPG 16, which was one of the main points of the petition.

12. The Petitioners response was considered by the Public Petitions Committee (PPC) at its meeting on Tuesday 22 May 2001. The PPC, in light of the clearly conflicting views of the Petitioner and the Executive, agreed (under rule 15.6.2 (a)) to formally refer the petition and subsequent correspondence to the Transport and the Environment Committee for further consideration.

Issues for the Transport and the Environment Committee

13. It is clear from the correspondence that the view of the Executive and the view of the Petitioners are conflicting. Members will recall that a further Petition on opencast coal mining (PE 369) has previously been circulated to the Committee for information only.

14. PE 369 is from Mr Brian Rostron, on behalf of Confederation of UK Coal Producers, calling for the Scottish Parliament to urge the Scottish Executive to take steps to guarantee: (a) that exploitable coal deposits are accorded positive policies within development plans; (b) that opencast coal development is considered within the planning system like any other development proposal; (c) that the strategic need for coal is recognised in the determination of opencast coal applications, and (d) that energy, from a Scottish employment business and economic perspective, is recognised as an important consideration in government development planning and guidance.

15. As outlined in paragraph 13, Petition PE 369 has not been formally referred by the PPC to the Transport and the Environment Committee. Therefore it is not appropriate under the Standing Orders for the Transport and the Environment Committee to give substantive, formal consideration to it at this time. However Members may wish to bear in mind the views expressed in PE 369 in considering PE 346.

⁴ A copy of the statement for the case is appended.
TRANSPORT AND THE ENVIRONMENT COMMITTEE

Options

16. There are a number of options available to the Committee in considering how to either conclude or take forward consideration of this petition. Members will recall that the Committee previously agreed not to take a view or recommend further action in respect of individual cases which are subject to legal or court proceedings, industrial tribunals, or planning or other similar statutory procedures. In light of this, and the views expressed by the Convener of the PPC, it is recommended that the Committee should not take a view on the question of the Lothian Structure Plan.

17. It should be noted that the possible options set out below are not exhaustive. They are also proposed taking into account the fact that the Committee has an agreed work programme, which includes the handling legislation until Christmas 2001.

18. Options open to the Committee include:

Option A

19. The Committee could agree to note the Petition and write to the Petitioners stating this, enclosing the Official Reports of the relevant meetings and all correspondence received on the Petition.

Option B

20. The Committee could agree to write to the Scottish Executive, requesting further information on the issue of planning authorities charging fees to cover the cost of monitoring and enforcing mineral permissions, as raised by the Petitioners in their response to the PPC (see paragraph 11), and sending a copy of the response to the Petitioners.

Option C

21. The Committee could agree to defer consideration of the Petition until the PPC agrees a course of action with regard to Petition PE 369.

Other Action

22. The Committee could of course take any other competent action it deems appropriate.

Recommendation

23. The Committee is asked to consider how it wishes to deal with the petition.
TRANSPORT AND THE ENVIRONMENT COMMITTEE

Neil Stewart
Assistant Clerk to the Transport and the Environment Committee
August 2001
TRANSPORT AND THE ENVIRONMENT COMMITTEE

Subject: Petition 357 – Petition by the Aberdeen City Council on investment in Transport Infrastructure

Meeting No: 20th Meeting

Meeting Date: 5 September 2001

Author: Note by the Senior Assistant Clerk

Introduction

The Paper asks the Committee to consider for the first time Petition PE 357 by Mr Douglas Paterson, Chief Executive of Aberdeen City Council. The Petition requests that the Parliament support calls for the necessary investment in transport infrastructure in the Aberdeen area to be provided as a matter of urgency. A copy of the original petition along with a letter from the Scottish Executive and the Official Report from the Public Petitions Committee (PPC) are attached for member’s information.

Progress of the Petition

The Public Petitions Committee first considered the Petition on 8 May 2001. The Committee agreed to seek the views of the Scottish Executive on the issues raised and on the current status of talks with NESDEP (North-East Scotland Economic Development Partnership) on these issues. The response from the Scottish Executive is attached for information and has been copied to the Petitioner. The PPC considered the response from the Executive at their meeting on 19 June and agreed to refer the petition to this Committee.

Issues

The Executive state in their response that they are in regular contact with NESDEP regarding the proposals for an integrated Modern Transport System (MTS). Some of the proposals in this scheme have already been taken forward, with assistance from the Public Transport Fund. On 14 March the Minister announced a £1.25M support package to assist the MTS development. The biggest area of contention is the development of the Aberdeen Western Peripheral bypass. As this is not classed as a trunk road, it is the responsibility of local authorities. Supporters of the by-pass claim that the road should be trunked so that the Executive may fund construction, and therefore help reduce city congestion by diverting traffic.

Members will recall that the Committee has previously agreed not to take a view on or recommend further action in respect of individual cases which have been subject to legal or court proceedings, industrial tribunals, or planning or other similar statutory procedures. A similar rule could be applied to this petition, as it involves the
allocation of funding from the Scottish Executive for specific projects. The Committee may not wish to express a view on funding issues in relation to Aberdeen without having had the opportunity to review funding decisions as a whole across the board. The Transport and the Environment Committee does, however, have a legitimate interest in the broader issues raised by the petitioner relating to the development of integrated transport strategies and the provision of infrastructure needed to support them.

Members will recall that the Committee had originally planned to hold a meeting in Aberdeen during the course of the Water Inquiry and that this meeting was postponed. The Committee had agreed that they would take oral evidence from NESDEP at this meeting in Aberdeen and this evidence taking was also postponed due to the falling through of meeting arrangements. As yet, the Committee has not rescheduled any formal meetings in Aberdeen.

Options

The Committee had previously agreed at its meeting on 7 March, to take evidence from NESDEP on this issue. The Committee should therefore consider whether it wishes to confirm the earlier decision to take evidence from NESDEP on this issue. If so, it should consider options for achieving this. Options include:

Option A

Invite representatives of NESDEP to give evidence in Edinburgh. The most convenient time to hear this evidence may be in the break occurring between Stage 1 and Stage 2 of the Water Services (Scotland) Bill.

Option B

A meeting could be scheduled in Aberdeen as part of the Committee’s consideration of Stage 1 of the Water Services Bill. This option would also allow the Committee to fulfil the original commitment to hold a meeting in Aberdeen. The Committee could therefore combine taking evidence on the petition with taking evidence on the Water Services Bill from local interests.

Conclusion

The Committee is invited to consider the options above, or any other competent action they wish to take, and agree whether they wish to take evidence from NESDEP, and if so, indicate whether they wish to hear this evidence in Aberdeen or Edinburgh.

Tracey Hawe
Senior Assistant Clerk
August 2001
ENVIRONMENTAL IMPACTS OF SEA CAGE FISH FARMING

Thank you for your letter of 10th July regarding the Scottish Executive programme on this topic, and for the official report of the Committee meeting of the 26th June.

You requested, on behalf of the Committee Reporters, my views on the current Executive work programme, on whether there are identifiable gaps in the Executive work programme, and if so, what work is required to fill these gaps. My views on whether the approach the Executive is taking to the issue is appropriate were also sought.

Should I disagree with the Executive approach, the Reporters asked me to record precisely how and why, along with what actions I would instead recommend being taken, all by Monday August 13.

After examining a copy of the current SERAD fisheries group list of projects, sent by the Committee, I sought further information in order to make detailed comments to the Committee Reporters.

Scottish Executive Environment and Rural Affairs Department

On 14th July, I wrote to Dr Stagg, Deputy Director at the SEERAD Fisheries Laboratory, Aberdeen for information on the structure, scope and progress of the current projects, and any further information, which might be to hand. On the same day, I also wrote to Ms Hutchison of the Fisheries Group, Edinburgh, asking for the pre commencement details and both projected and current expenditure for the projects listed below. I also asked Ms Hutchison for details and expenditure on past research.

AE1158; Impacts of salmon farming on wild fish populations, Start date; Apr-00 End date Mar-04.

AE1159; Investigations into the identification and toxicity of *Pseudo-nitzschia spp.*, the causative organisms associated with ASP in shellfish. Start date; April-01, End date March-02.

AE1160; Collation and assessment of historical algal bloom data. Start date; April-01, End date March-02.

AE1252; Hydrobiology of the Minches. Start date; Apr – 1996, End date, Mar - 02.

Details of structure, scope, progress, budget and cost for the research lacking.
The letter to Dr Stagg was answered on the 25th of July by Dr Moffat, Programme Manager Aquatic Environment. He informed me that Ms Hutchison would be answering on behalf of the Aberdeen Laboratory.

On the 8th of August, I received a response to my letter to Ms Hutchison from Mr Brown, enclosing lists of the projects (and their costs) commissioned in each year between 1992 and 2001. He also enclosed a short (30–40 word) uncosted description of each of the 4 environmental projects (AE1252, AE1 158, AE1 159 and AE1 160). Unfortunately, actual costs for the 00-01 projects were not given, and the estimated costs for 01/02 were missing.

Budgeting requires estimated project costs, and as it is now well into August, 2001, one would expect that documentary evidence exists of the actual expenditure on projects conducted and in progress last year (00) and that in order to authorise expenditure, the Executive would, as in past years, require to have pre-commencement estimates of costs for research projects.

This is an important issue, deserving closer examination. Government fiscal policy requires the submission of structured and costed plans for research projects. I had asked for these in my letters to the FRS and SEERAD of 14th July. Reminded by e-mail on the 9th of August, Mr Brown replied; “I am afraid that within the short time you say that is available it will not be possible to provide you with the out-turn costs for 00-01 and the estimated costs for the current year, but I shall see that you are sent them when they are available”.

The Committee will understand that it is difficult for me to comment on research proposals when only a brief uncosted description is made available.

The Committee of Public Accounts and the National Audit Office

I have been in touch with the Committee of Public Accounts concerning these issues since May 1995 and quote the Scottish Office Agriculture and Fisheries Department response to my detailed questions on two major topics, relayed in a letter from K. J. Brown, Clerk to the Committee dated 28th January 1999.

“The Department are aware of scientific debate concerning the environmental impact of marine fish cage farming. However, on the evidence of scientists within the Department’s Fisheries Research Services Agency and of other international research in the field, they consider that the potential link between nitrogen based fish farm effluents and the occurrence of marine biotoxins has yet to be fully established”.

These comments indicate that FRS scientists were well aware of the potential link, as they were in 1990 and 1991, when I raised it at annual Controller of Fisheries Research and Development (CFRD) meetings considering planning and budgeting of the annual aquaculture research programme. They were also aware that in the Interim Report on the Quality Status of the North Sea (1991), the summary included the following extracts:

2. This report serves to fill the gap between both comprehensive reports on the Quality Status of the North Sea. It contains scientific information submitted by the North Sea Task Force on recent occurrences of exceptional algal blooms and the 1988 seal epidemic. The Task Force recognizes the existence of two types of sensitive issue: those of which the public is already aware of and those which the scientific community considers deserve special attention because of recent developments in scientific knowledge and understanding. The North Sea Task Force identified four sensitive issues of the latter kind. On the basis of this information the North Sea Task Force has made recommendations to address the gaps in knowledge and the sensitive issues in the 1993 Quality Status Report.

Algal blooms

6. The North Sea Task Force therefore recommends that
— further research should be earned out into the occurrence of algal blooms, and their implications for the dynamics of coastal ecosystems
— research should be initiated about the life cycle of toxic algae, and more particularly
about the resting stage (cysts);
— research should be conducted into the possible association between the presence of fish farms and localized exceptional algal blooms; and
— monitoring of the proliferation of macroalgae should continue and research into exceptional occurrences should be carried out.

Unfortunately when I insisted on having my concerns that the operation of sea cage fish farms could promote biotoxin production minuted, following the November 1991 CFRD meeting, I was banned from attending any such meetings thereafter.

Although FRS has attributed expenditure of £594,934 to the “Study of Environmental impact of Fish farming” during the years, 1992-1999, I am unaware of any published work by the FRS concerning research on relationships between fish farms and algal blooms or toxins.

After seeing some of my published and draft papers on links between pollution and biotoxin production, a meeting was suggested by the former Scottish Office Minister, Lord Sewel. In February 1998 I met formally with the former FRS Deputy Director, Dr Davies. He explained to me that due to heavy expenditure on farmed fish disease research, there was little prospect of any work on these matters being conducted in the near future, and that as other fishery scientific staff in Canada discounted any such links, the FRS took the position that the Scottish events were natural and nothing to do with discharges from sea cage fish farms. Despite many requests over the years, FRS have not produced any evidence to support this view.

FRS reported to the Committee of Public Accounts in 1999, that; “The potential link between nitrogen based fish farm effluents and the occurrence of marine biotoxins has yet to be fully established”, indicating that they accept the link is partially established. In the absence of material or co-incidental evidence to the contrary, in civil law, this fulfills the criteria required to prove nuisance, i.e. “balance of probability” in Scottish, and “preponderance of evidence” in English law.

**Parasite infestation on wild fish originating from farmed marine fish**

SOAFD, presumably on the advice of the FRS stated in their 1999 response to the Committee of Public Accounts, that;

“The Department do not consider there is sufficient scientific evidence to prove the simple proposition that parasitic transfer from marine fish farms is the sole cause of reduced wild fish stocks”.

To my knowledge, no one has ever suggested that parasitic transfer from marine fish farms is the sole cause of reduced wild fish stocks. There is however a great deal of evidence that wild salmonid stocks in areas affected by sea cage fish farming have suffered catastrophic decline, to the point of extinction.

There was no need to prove that driving under the influence of alcohol was the sole cause of road accidents to enact legislation making it a criminal offence.

**Scottish Natural Heritage (SNH) and the protection of wild fish stocks**

The body designated responsible for the protection of the wild fish stocks which form part of our natural heritage is the SNH. Despite this, as part of their statutory advisory duties SNH have never objected to the granting of leases, licences and discharge consents for marine fish farms on the grounds that they may have an adverse effect on wild fish stocks.

SNH contributed to the funding of research carried out in 1995 on sea lice genetics at St Andrews University. A peer reviewed paper on the first part of this research was published in the Journal of Experimental Marine Biology and Ecology, No 210, (1997).

The abstract concludes;

“Samples of sea lice taken from west coast wild sea trout subjected to RAPD analysis also revealed the occurrence of putative ‘farm markers’ in some individual parasites, indicating that they had possibly originated from salmon farms."

Experiment 2 described in the paper, states on page 267;
"thus at least six of these 21 Lepeoptheirus salmonis sampled from west coast wild sea trout carried markers otherwise predominantly or exclusively associated with farms. This might, therefore, indicate a connection between wild sea trout - at least on the west coast - and farmed salmonid populations with regard to the source of sea lice infestations of wild fish."

Talking about the high number and frequency of putative "farm marker" bands recorded, and the extreme levels of differentiation between farms. The paper states on page 268;

"The obvious potential selection agents in the farm environment are the chemotherapeutants applied in attempts to control parasite numbers"

The continuation of this research clearly had the potential to prove genetic links between sea lice from farmed fish and those infesting wild fish in affected areas. In a 1998 letter, the then Chairman of SNH, Magnis Magnusson KBE informed me that the project would shortly be completed and the results published in the scientific literature in due course.

In response to my letter of 17th July asking for further information on the matter, Professor Roger Crofts, Chief Executive of SNH told me that the RAPD analysis used in the 1995 research had not proved to be as reliable as hoped, and consequently the methodology had been changed. Reports of this work are to be published, and I have a copy of the executive summary, which makes no mention of chemotherapeutant markers.

To my knowledge no refutation of the peer reviewed RAPD work published in 1997 exists. If the method was later proved to be unreliable, then this work should have been published. In the absence of published refutation, it may be assumed that, having the potential to provide forensic conclusive proof of cause and effect, there are other political and commercial reasons behind the decision to discontinue work funded from the public purse. This matter requires open and public investigation.

The Scottish Environmental Protection Agency (SEPA) and scientific aspects of marine pollution

Throughout the last twenty years, I have regularly aired concerns over the lack of a sound scientific approach to the environmental impact of sea cage farms with SEPA and it’s predecessors.

Extensive, detailed and referenced objections to the granting of discharge consents have been continually rejected, and requests to the Secretary of State for proper examination of such decisions dismissed.

Promised a proper response to scientific questions by the Chairman of the SEPA Fish farm group in February 1999, I sent them a copy of a discussion paper, which I was giving as a poster at the 1999 ICES, Symposium on the ‘Environmental Effects of Mariculture’ in Canada. The committee promised a response following their March meeting, none was forthcoming. Instead both SEPA senior biologists resigned from the committee and took early retirement.

An example of the ‘scientific’ approach to environmental impact from marine fish farming is the recently produced report; ‘Box modelling of Nitrogen from Marine Caged Fish farms in Loch Roag. June 2001’

This first came to my notice via a press report in the THE WEST HIGHLAND FREE PRESS  June 6 2001

Headlined “Lewis sea loch given clean bill of health” The report stated (extracts);

“Salmon farming in Loch Roag – the Lewis loch which has become a target for absentee-owned estates and campaigners hostile to the industry – has been given a clean bill of health by the countries top environmental monitors.

An intensive study, undertaken by the Scottish Environmental Protection Agency, has found that discharges from the salmon cages do not create pollution in the loch – or, in the language of the report, “the current consented biomass is unlikely to lead to hypernutrification”.

The report has been warmly welcomed by community representatives in the area and by the salmon farming industry. The local Labour councillor, Norman A Macdonald, said that it exposed the “scaremongering nonsense” engaged in by Friends of the Earth.

The Free Press has learned that the industry will now ask SEPA to apply the same methodology in other sea lochs which have become focal points for the hostility of landowning interests and environmental campaigners. They believe that the best way to counter prejudice against
the industry is with hard scientific evidence of the kind produced by SEPA. …”having assessed 18 “scenarios” within the loch, using box modeling techniques, the SEPA report concludes: “Any hypernutrification that occurs is likely to be localized as the majority of the loch experiences sufficiently energetic tidal currents to promote dispersion. “Only small pockets with very low tidal currents would be affected”.

Councillor Macdonald said: “This scientific study confirms the evidence of experience among those who know the loch. It shows that the tidal flows around the fish farms in Loch Roag are strong enough to disperse and dilute waste products quickly enough to make their effects insignificant.”

Modelling the impact of discharges is a favourite tool used by regulators such as SEPA to inform decision making, and of course depends for credibility on the accuracy of the physical, biological and ecological factors used to construct and operate the model.

The SEPA report states “The loading of nitrogen is concluded to be as follows: “Current farming practice can achieve food conversion ratios of 1.1, i.e. for each 1100kg of feed, 1000kg of fish are harvested. A typical nitrogen content for fish carcasses is 3%.

Hence, the mass of nitrogen discharged per tonne of fish is: (1.1 x 0.4 x 0.16 -0.03) x 1000kg = 40.4kg/tonne of fish.”

This typifies the unscientific approach adopted by SEPA. Figures provided to the author by SEPA Stornoway, detailed that during the four years 1996 to 1999, 12,233 tonnes of fish were produced with an input of 18,929 tonnes of fish feed. This means that the known feed conversion ratio achieved in Loch Roag calculated from actual records is 1.547:1 i.e. 50% higher than the figure used by SEPA to model loadings in Loch Roag. The figure of 40.4kg of nitrogen introduced per tonne of fish based on real evidence should be nearer to 60kg/tonne of fish. This is only one of the lesser demonstrable examples of SEPA’s failure to adopt a sound scientific approach to such matters.

Nutrients are not conservative in reality. Nutrification is the increase of nutrient levels above normal background levels, this occurs in winter near discharges. Hypernutrification is the accumulation of nutrients beyond the uptake capacity of the biota. This occurs in some heavily polluted estuaries and coastal waters. It is very unlikely to occur in summer in coastal waters flushed by nutrient depleted inflow.

The most significant environmental risk comes from seasonal alterations in the balance of nutrients arising from discharges. This, the most important issue, appears to be ignored by SEPA in assessing the effects of discharges.

The whole regulatory ‘scientific’ approach to the evaluation of the effects of nutrient discharges into coastal waters requires testing and verification. It appears that the current regulatory criteria are selected for political rather than scientific reasons. There is a huge body of published research on coastal waters and the natural processes within them. A reasoned and logical examination of the evidence available indicates that anthropogenic activities induce trophic changes away from net primary production to increased net secondary production. Increased microbial production depresses local chlorophyll production. Nutrient inputs may alter species selection and promote harmful algae.

Around 90% of the discharged waste from marine cage fish farms leaves the cages entrained in the water column. The concentration of research and regulatory effort on localized seabed impact on this minor aspect of environmental impact is in reality only of benefit to fish production. The whole regulatory approach needs to be re-evaluated, tested and prioritized.

A summary, and detailed list of suggestions for a more effective approach to the research programme on environmental effects of marine fish farming will be forwarded separately.

Yours sincerely,
Allan W. Berry,
The Aquaculture Health Joint Working Group met for the first time in February 2000. This new Group is the successor to the Joint Government/Industry Working Group on Infectious Salmon Anaemia (ISA) but has wider industry representation and more regulatory focus. The following are the Group’s terms of reference:

- consider ways in which to improve the general health, welfare and management of aquaculture animals;
- make recommendations, as appropriate, to Ministers and Industry Associations;
- to make recommendations for research and development, reporting these to CARD;
- produce an annual report by end March each year.

The need to follow through the recommendations made by the ISA JWG was accepted and “A Code of Practice to Avoid and Minimise the Impact of ISA”, incorporating the majority of the earlier group’s recommendations, was written by members and published in August 2000. Publication costs were met by the Crown Estate.

At the meetings of the Group EC issues, reports from the EC Experts Group, the ISA withdrawal scheme and ISA vaccination, the EC Food and Veterinary Office mission looking into the outbreak of ISA in Scotland, welfare, fish health legislation review and the draft decision on ISA diagnosis have been recurrent agenda items. Discussion points have contributed to the development of regulation which lead to the Commission Decision approving the scheme submitted by the UK for the withdrawal of fish in Scottish farms infected with ISA (2001/186/EC), implemented by SSI 2000 No.330, which became law on 9 March 2001.

In June the Group discussed the Ministerial response to the ISA JWG Report and heard presentations relating to the future direction of the Group’s work. These covered a list of diseases for review, the fish health regime, marine VHS, ISA surveillance and demonstration of compliance with the ISA Code of Practice. VHS and IPN subgroups were established to work on these health priorities.

At the September meeting fish welfare was the main item on the agenda. This included presentations on farmed fish welfare legislation and the Council of Europe Recommendation on the Welfare of Farmed Fish. Industry reported on the Federation of European Aquaculture Producers and feedback was received from the VHS subgroup.
The ISA JWG had made a commitment to meet in Shetland in recognition of the travelling of Shetland representatives and the volume of their industry production. Due to ISA pressures it was not possible to do so. However in November the AHJWG was able to fulfil this commitment, meeting for two days at the North Atlantic Fisheries College, Scalloway. The agenda included the disease risk associated with increasing use of wellboats for harvesting farmed salmon, EC matters, feedback from the IPN and VHS subgroups, briefing on the English lactococcosis outbreak in trout, malachite green usage (a fungicide) and the R&D requirements of sectors. A wellboat subgroup was constituted to re-examine the disease risk assessment of their operations. A half-day programme of visits on and offshore gave an impression of Shetland salmon farming and its associated industries. Implementation of the recommendations of the ISA working group was highlighted by a visit to a fish processing effluent disinfection plant.

Whilst some outcomes have been mentioned in this report it is no more than an outline of work in progress and its future direction. Specific subjects being worked on will be reported on in detail in due course.

**Schedule of meetings in 2000**

- 8 February  Marine Laboratory Aberdeen
- 22 June      Scottish Quality Salmon, Perth
- 1 September  University of Stirling Institute of Aquaculture
- 14 November  North Atlantic Fisheries College, Scalloway, Shetland
Appendix 1

List of AHJWG issues discussed in 2000

Publication of an ISA Code of Practice based on the JWG recommendations

Contingency planning for exotic diseases – *Gyrodactylus salaris, Piscirickettsia salmonis*

List of diseases for review, including emerging diseases, from which the following initial priorities were selected:
- IPN and its control in salmon
- VHS and marine rhabdoviruses particularly with regard to “new” species

Disease outbreaks including:
- lactococcosis

New domestic regulation

EC matters including:
- The EC mission report on ISA (FVO Report)
- ISA flexibility scheme
- Fish health legislation review
- Council of Europe recommendation on the welfare of farmed fish
- ISA Epizootic Report
- ISA draft decision on diagnosis
- Fish and shellfish movements
- Shellfish aspects of EC regulation

Exports including:
- salmon eggs for Chile

Fish medicines including:
- ISA vaccine
- malachite green/Pyceze

Imports including:
- Possible future importation of Norwegian smolts
ISA and trout:
Mandatory fallowing

Monitoring implementation of the ISA Code of Practice

Monitoring implementation of the JWG recommendations

R&D including:

- List of R&D recommendations to CARD

Review of fish health legislation and status of notifiable diseases including the implications of cross border regulation Scotland/Norway and Scotland/England

Scottish Parliament European Committee 7th Report 2000 and the SERAD response

Welfare including:
- farmed fish welfare legislation
- Stocking density

Use of Wellboats for harvesting
Appendix 2

List of AHJWG issues to be addressed in 2001

(1) The following on going issues from 2000:

Contingency planning for exotic diseases – *Gyrodactylus salaris, Piscireckettsia salmonis*

List of diseases for review, including emerging diseases, from which the following initial priorities were selected:
- IPN and its control in salmon
- VHS and marine rhabdoviruses particularly with regard to “new” species

EC matters including:
- Fish health legislation review
- Council of Europe recommendation on the welfare of farmed fish
- ISA Epizootic Report
- ISA draft decision on diagnosis
- Fish and shellfish movements

Exports including:
- salmon eggs for Chile

Fish medicines including:
- ISA vaccine
- malachite green/Pycezes

ISA and trout

Mandatory fallowing

Monitoring implementation of the ISA Code of Practice

Monitoring implementation of the JWG recommendations

R&D including:
- List of R&D recommendations to CARD

Review of fish health legislation and status of notifiable diseases including the implications of cross border regulation Scotland/Norway and Scotland/England
Welfare including:
- farmed fish welfare legislation
- Stocking density

Use of Wellboats for harvesting

(2) The following new issues:

Other diseases from the review list

Shellfish including:
- Polydora infestation
- The monitoring programme for *Bonamia* and *Marteillia*
Appendix 3

Lists of R&D priorities from sectors forwarded to CARD

BMFA:

Vibrio and vaccination policies, when to vaccinate and efficacy.
Virology – IPN especially and Nodavirus.
VHS vaccines for new species.
General concern – welfare.

BTA:

Health:

Proliferative kidney disease.
Bacterial kidney disease in hatchery production.
Rainbow trout fry syndrome – No very effective treatment.
Whitespot.
Legislative concerns relating to VHS, ISA and IHN.

Cultivation:

Harvest methods and welfare.
Stocking density. The BTA has some projects underway.
Pigmentation.
Algal taint.

Availability of medicines:
A malachite green alternative.
Malachite green related R&D issues eg residues in sediments.
Cost concerns, malachite green was 20 times less than Pyceze.

FVS:

Vertical transmission of IPN in salmon and other species.

SQS:

IPN vertical transmission.
Control of Saprolegnia in freshwater.
Carrying capacity to inform SEPA which doesn’t have a dispersion model for Pyceze.

In other respects SQS agreed with the BTA priorities.
SSFA concerns, mostly on IPN, were covered by the foregoing.

Appendix 4

LIST OF INFECTIOUS DISEASES OF FISH AND SHELLFISH

FISH DISEASES

Viral diseases
- Infectious salmon anaemia (ISA)
- Infectious pancreatic necrosis (IPN)
- Pancreas disease (PD)
- Spring viraemia of carp (SVC)
- Viral haemorrhagic septicaemia (VHS)
- Infectious haematopoietic necrosis (IHN)
- Nodaviruses
- Epizootic haematopoietic necrosis (EHN)
- *Oncorhynchus masou* virus disease (OMV) and other herpes viruses
- Erythrocytic inclusion body syndrome (EIBS)

Bacterial diseases
- Furunculosis and other diseases caused by *Aeromonas salmonicida*
- *Aeromonas hydrophila*
- Bacterial kidney disease (BKD)
- Bacterial cold water disease (*Flavobacterium psychrophilum*)
- Enteric redmouth (ERM)
- Vibriosis (*Vibrio* spp, *V. viscosus, V. salmonicida*)
- Piscirickettsiosis (*Piscirickettsia salmonis*)
- Mycobacterial infections
- *Pasteurella* “salmonicida”
Parasitic and fungal diseases

- Sea lice (*Lepeophtheirus salmonis, Caligus elongatus*)
- *Saprolegnia*
- Proliferative kidney disease (PKD)
- Gyrodactylosis (*Gyrodactylus salaris*)
- Epizootic ulcerative syndrome (EUS)
- Whirling disease (WD)
- *Anguillicola crassus*
- *Argulus* spp
- White spot (*Ichthyophthirius multifiliis*)
- Amoebic gill disease (*Paramoeba* sp)
- *Diphyllobothrium*
- *Eubothrium* spp
- *Trichodina*
- *Phoma herbarum*
- *Exophiala*
- *Myxidium* spp
- *Kudoa* spp

Diseases of unknown aetiology

- Ulcerative dermal necrosis (UDN)
- Cardiomyopathy syndrome (CMS)

SHELLFISH DISEASES

Viral diseases

- Iridovirosis

Parasitic and fungal diseases

- Bonamiosis (*Bonamia* spp)
- Haplosporidiosis (*Haplosporidium* spp)
- Marteiliosis (*Marteilia* spp)
- Mikrocytosis (*Mikrocystos* spp)
- Perkinosis (*Perkinsus* spp)
- Crayfish plague (*Aphanomyces astaci*)

Pests

- *Polydora*
Appendix 5

AQUACULTURE HEALTH JOINT WORKING GROUP (AHJWG) MEMBERSHIP

Dr Ron Stagg Deputy Director, Marine Laboratory Aberdeen - Chairman

The composition of the plenary group is as follows:

Mr Ralph Baille, Salmon Management Company representing independent salmon growers
Dr Ian Bricknell, Marine Laboratory Aberdeen
Professor Niall Bromage, University of Stirling representing the British Trout Association
Mr Gordon Brown, SEERAD FFAME 4
Mr Andrew Grant MRCVS, Novartis representing the Fish Veterinary Society
Professor Barry Hill, MAFF CEFAS
Mr Doug McLeod, Scottish Shellfish Growers Association
Mr Charles Milne, State Veterinary Service
Mr David Mullin, MAFF Fisheries Division II
Dr Pauline Munro, Marine Laboratory Aberdeen
Mr Gordon Rae, Scottish Quality Salmon
Mr Steve Rex, WISCO representing the Western Isles
Professor Randolph Richards, University of Stirling representing SQS
Mr Andy Rosie, SEPA
Mr David Sandison, Shetland Salmon Farmers Association
Mr Paul Shave, Secretariat
Mr Richard Slaski, British Marine Finfish Association
Mrs Maureen Spence, Orkney Fish Farmers Association
Mr Alan Stewart, Landcatch representing smolt producers
Mr Dave Wyman, SEERAD FFAME4
Additional experts for subgroup working

Much of the work of the AHJWG is done by subgroups to which additional experts are invited. Currently there are subgroups on Infectious Pancreatic Necrosis (IPN) and wellboats. Details of the additional representation on these subgroups can be supplied if desired.
Dear Tracey.

My thanks for your request for our views on the progress of SEERAD on the issue of the environmental impacts of sea-cage fish farming. We wish this to be considered a joint submission of the ASFB and Atlantic Salmon Trust.

We think that it would be more constructive to answer your second, more general, question first, in the context of the Committee’s continuing call for a public enquiry into the environmental aspects of sea cage fish farming.

1 **Is the current approach of SEERAD to sea cage fish farming issues satisfactory?**

We consider that the approach taken by the Executive falls short in the following aspects:

- Slow recognition of the need for urgent action to deal with the impact of salmon farming on wild fish.
- Consequent delays in taking effective action.
- Over-reliance on voluntary action by organisations and individuals to achieve improvements.

There is clearly a considerable appetite for an independent public enquiry into sea-cage fish farming, with considerable pressure from the Parliamentary Committees, wild fisheries interests, the industry and the general public.

As the Executive claims, many live initiatives associated with salmon farming are being promoted by both the Executive and others. We have concerns that many of these initiatives have made slow progress and are heavily reliant on the voluntary effort of organisations and individuals with many other commitments.

However, in the light of the potential of some of these initiatives some important questions do need to be asked concerning the merits of an Enquiry. For example (where appropriate our organisations’ inclinations are indicated in brackets):
Will an Enquiry polarise the debate at a time when there appears to be a growing understanding of the problems and their possible solutions? (Possibly)

Will an Enquiry impede the progress of any or all of these initiatives and is that desirable? (Unless care is taken, an enquiry could be used as an argument to delay urgent action. This would be most undesirable)

What is the time-scale of an enquiry, Parliamentary or Public?

Are the facts, arguments and actions that might result from such an enquiry not already well rehearsed and could they be productively and speedily advanced in existing forums? (Yes, but they might come to greater public notice through an Enquiry)

What opportunity cost in terms of officials’ and everybody else’s time will such an Enquiry present us with and will this divert resources away from important current initiatives? (An Enquiry must not be allowed to divert resources from current initiatives)

These questions need to be given proper consideration.

The argument being deployed by the Executive against an Enquiry is that there is already action on many of the fronts that an Enquiry would examine. We would be willing to accept this argument providing that the Executive demonstrates clearly and unequivocally its commitment to the relevant initiatives, and supports this commitment with adequate resources to ensure that they result in real progress.

The Executive is relying heavily on non-governmental effort to make progress. This effort comes at a considerable cost to those people and organisations concerned – a cost which is not always recognised. If Aquaculture Policy Development is to actually do what we want it to do – namely result in improvements in aquaculture on the ground and the resolution of problems, then resources will need to be found - both for the Executive, to ensure they can play their part properly in that process, and for those participating bodies on whom they rely.

2 Comments on SEERAD Aquaculture Policy Development Work Plan

We wish to make the following comments on the current SEERAD workplan. Several of the initiatives listed may be dealt with under more than one heading.

2.1 Development Of Longer Term Strategic View

- We welcome the development of a long term strategic view, and would wish to see wild fisheries interests involved in the proposed Strategy Group.
- It is essential that the development of this long term view properly accommodates, and is co-ordinated with, the array of other current existing initiatives including Coastal Zone Management Plans, Framework Plans, the Water Framework Directive, Natural Heritage Zones, Coastal Forums etc. There is a need and an opportunity to draw all these issues together.
- There is as yet no indication of action to form the Strategy Group.

2.2 The Review of Regulation

- The current regulatory regime for marine fish-farming involves nine regulatory authorities. The industry claims that it is the most heavily regulated aquaculture industry in the world whilst many critics claim that the industry is badly under-regulated.
There have been calls in the past (see Scottish Salmon Strategy Task Force Report 1996) from many quarters for a ‘single independent regulatory authority for the fish farming industry’. This issue requires serious consideration and, with aquaculture occupying an ever more important and controversial place in the Scottish rural economy, such a concept should not be dismissed out of hand. However, this would clearly take some time to develop as a concept and the challenge of the regulation problem for aquaculture is one that needs addressing now, regardless of future developments.

We share the view of the industry that it is less a question of lack of regulation and more one of ensuring that existing regulation is harmonised and effectively applied.

At the same time, we wish to stress that there do exist a number of important and specific gaps in the existing regulatory framework which need to be covered, principally in four areas:

- Regulation of infestation by, and dispersal of, sea-lice and other parasites that may fall outwith normal fish health regulations
- Consideration of whole loch/cumulative impacts
- Minimisation of escapes, and of their consequences
- Non-compliance with the recommendations of the ISA Joint Working Group.

2.3 Gaps in the Regulatory Framework

a) Sea Lice

The impact of sea-lice incurs costs for the Scottish salmon farming industry in both expense - in terms of the cost of treatments - and in serious loss of production and damage to fish. The cost of this damage is estimated by the industry at £30m/annum. The cost of the impact on wild fish stocks has not been quantified, but stocks of both salmon and sea trout in many West Highland rivers have collapsed. There is currently no regulatory mechanism to manage the sea-lice problem, although voluntary industry codes of conduct have been formulated (Sea Lice Management Strategy). Chemical, management and biological strategies have been proposed, but these have largely failed due to there being no obligation to co-ordinate lice management in discrete production areas. Until there is a requirement to manage, treat and monitor sea-lice levels in a way that recognises the parasite as a serious and extremely costly fish health issue for both farmed and wild stocks, there can be little hope that sensible strategies will be applied to solve the problem.

b) Whole loch/cumulative impacts

The Area Management Agreement process is likely to deliver some answers to these questions but these will have to be underwritten by regulation to ensure that all fish farming operations comply with the strategy and the ‘free-rider’ problem [whereby a single farmer either benefits from or jeopardises the efforts of his neighbours to control fish health issues through an unwillingness to comply with synchronised management/treatment strategies] is overcome.

The current remit of SEPA is defined by COPA legislation and the Environment Act legislation, much of which predates the advent of the salmon farming industry and which was designed for the regulation of entirely different processes. It is clear that the legislation under which SEPA operates needs reform to ensure that issues beyond the simple matter of point source pollution can be properly considered. SEPA increasingly need to have the resources and models to make informed decisions, not simply about the impact in a specific locality, but about what cumulative impacts over large areas, might have on water quality, flora and fauna from a number of production units.
c) **Escapes**

In 2000, over 400,000 salmon (adults and juveniles) escaped from Scottish salmon farms. The potential for the spread of disease between fish farms, and between farmed and wild fish is considerable. Good progress has been made on the subject of containment but there remains heavy reliance on codes of practice which are ultimately voluntary in nature.

d) **ISA Code of practice**

The JWG on ISA was an industry/SERAD document backed by salmon farming companies. A core feature of the recommendations was the identification of management areas, calculated from single tidal excursion patterns, within which it was strongly recommended that stock should be managed as a single year class. All appear to agree that this procedure is a fundamental necessity for the effective management of ISA and other fish health issues (lice included). The TWG process has already identified a number of areas where it is claimed this practice cannot be, and has little prospect of being, implemented for management/financial reasons. Given the industry and (on occasion, public sector costs associated with poor fish health eg: ISA) it would appear entirely logical and indeed essential that the industry is required to comply with recommendations it itself has developed and endorsed. Such compliance is ideally implemented through voluntary effort; however, given the indications that the industry in some circumstances may not wish to or cannot comply it would appear obvious that regulation will be required to enforce such practice.

An appraisal of compliance with JWG recommendations is required with a clear identification of different classes of progress namely:

- Compliance achieved
- Compliance being attempted
- Compliance impossible

Action on the latter in the form of regulation might well need to follow and a requirement to comply with these recommendations should be made a condition of lease/consent in all future development (see below).

2.4 **Possible Regulatory Mechanism**

There is an opportunity to provide regulatory cover for these issues through the planning system – by making consents conditional on agreed codes of practice. However, the inconsistencies of the planning system both within and between Local Authority areas and the lack of expertise in these organisations are likely to expose LA policy making and decisions to problems of confrontation and lack of clarity as one or other interest’s views are given more weight. We have learnt under the present system that this would be unproductive and undesirable and that above all clarity is required. Moreover, there is need to control in-service operation of fish farming.

Therefore it would seem that a more consistent and effective mechanism would be to control these issues through regulatory instruments requiring the application of BAT (Best Available Technique). This method is used effectively in the poultry and pig industry under IPPC (Integrated Pollution Prevention Control). Such regulatory instruments are likely to prove far more effective and relevant than the existing reliance on COPA legislation which is poorly designed to cope with fish farm discharges.
### 2.5 Implementation of Regulation

As stated above, rather than increase the regulatory burden, much could be achieved by rationalising and better co-ordinating the existing regulatory processes. The concept of a single and independent regulatory authority has been discussed above but it is possible that a similar effect could be achieved by developing a single application procedure channelled through a small central co-ordinating staff charged with ensuring that the different aspects of applications were harmonised and were treated consistently and expeditiously by the various current authorities. Such a staff would also ensure the availability of a complete picture of fish farm planning/regulatory activity across Scotland. This may become increasingly important as the Local Authority network, not renowned for its consistency of decision making across administrative boundaries, assumes planning responsibility for the industry.

We understand that precedent for such ‘joined up’ regulatory thinking has already been set during the ISA crisis when the industry’s regulators managed to closely and quickly co-ordinate their responses to emergency applications for new sites with considerable efficiency.

We have no set formula for achieving this co-ordinated regulation but it would appear that the Planning Authority must have a key role to play in this process, as must SEPA. These organisations will need to work towards a system that is administratively simple and efficient for the applicant, and which is transparent and comprehensible to those who would wish to be consulted on applications. The current system fails both parties. It is important to realise that the current opaque and administratively time-consuming regulatory process is a source of immense frustration to the industry and its critics equally.

Early stage discussions with the industry, who appear also to support the concept of greater co-ordination in the regulatory process, suggest that there may also be value in a pre-application consultation process which might allow questions and disputes to be raised and resolved before the formal application process is entered into.

The advantage of such a system is clear. Where there is disagreement resulting from misunderstanding, such misunderstandings can be resolved before the process starts, and where there are disagreements of substance, at least the application process is entered into with a full appreciation of areas of difficulty. It is anticipated that Area Management Agreements (AMAs) could well have a role to play in this issue, however consideration needs to be given to the fact that these agreements currently only involve wild fisheries interests in this process. AMAs would therefore need to be considerably more formal and representative of the wider local community before they could fulfil this function with confidence.
2.6 Timing of Action

- The forthcoming Water & Environment Bill may prove an opportunity to address these issues, where primary legislation is necessary. Reference in the SEERAD workplan to “suitable opportunities” for legislation needs to be strengthened.
- There is no indication of any action to achieve speedier consents for the use of the in-feed therapeutant “Slice”[emamectin], which is widely and effectively used in other countries. This is urgently needed, and SEPA resources should be appropriately augmented to expedite assessment of applications.

2.6 Research Programme

- Impacts of salmon farming on wild fish. The period for this examination (not due to complete until March 2004) is unacceptably long. It should be investigating the effect of fish farming on populations of salmon as well as of sea trout.
- Review of any link between fish farming and shellfish poisoning events. Is “desk research” adequate?
- Investigations into the effect of cultivation of new species such as halibut and cod. We welcome the studies being undertaken by SEERAD, and hope that they may be speedily completed, in order to inform decisions on potentially beneficial diversification of aquaculture activity in Scottish waters.

We hope these comments have helped inform the decisions of the Transport and Environment Committee and would be happy to expand on any of the points raised in this submission, if required.

Yours sincerely,

Andrew Wallace
Jeremy Read
Dear Ms McKinlay,

**SCOTTISH EXECUTIVE WORK PLAN - FISH FARMING**

Thank you for your letter of 6 July addressed to Jinny Hutchison in which you request further information to assist the reporters, Robin Harper MSP and Bristow Muldoon MSP, tasked by the Committee to scrutinise the work of the Executive in respect of fish farming. I am replying on behalf of Jinny who has just gone off on leave. She has expressly asked me to convey her regret that she will not be present when the reporters meet with Executive officials later in the month - I have the 22nd in my diary for that discussion, but as yet no time. However, if it transpires that there is any follow-up action to that meeting or a need for further discussion then Jinny hopes she might be back and in a position to participate.

Despite it being the holiday season we are aware from industry and other sources that the reporters have already set to work and are likely to be busy on this issue throughout the rest of the month and perhaps beyond. I am conscious that they are due to meet scientific colleagues at the FRS Marine Laboratory in Aberdeen on the 14th and we have, of course, already assured them of a welcome at the Tripartite Working Group, to be held at Perth on the 20th of the month.

Turning then to the additional information you sought.

**Development of a strategic framework**

We are still considering with Ministers the details of how a strategy for aquaculture will be developed and rolled out. As Ms Brankin explained to the joint meeting of the Transport & Environment and Rural Development Committees on 26 June, in the first instance she intends to engage a wide cross-section of interests in a series of bilateral discussion about the key issues which surround aquaculture and its future development. Following that, probably around the turn of the year, we envisage a more focused discussion in a working group which Ms Brankin herself has it in mind to chair. Out of this process there should emerge a set of proposals which will form the basis of the strategy and upon which I would imagine there will be further public consultation.
Interim Planning Arrangements

As the reporters know a review of aquaculture regulation is currently underway with the aim of identifying ways to streamline and improve arrangements (a consultation paper was issued at the very end of June). It is our intention that any proposals arising from this review will be taken into account before the Executive takes forward any proposals to extend planning controls to aquaculture developments. However, the Executive remains committed to introducing these controls which would be operated by Local Authorities and will seek to do so as soon as an appropriate legislative vehicle can be secured. The reporters will be all too aware of the competition for places in the Parliamentary legislative programme.

In the meantime, therefore, it is important that the current "interim arrangements" continue to be effective. These give the local authorities the lead and the right to take decisions in the light of views received from the other relevant regulators i.e. SEPA, SNH, SEERAD etc., and from the public. Two years ago the arrangements were reviewed and found to be working satisfactorily. We are not aware of any pressing concerns since then, but in the course of the coming year we intend to review the position again with other relevant regulators. It should be noted that these interim arrangements do not apply to Shetland and those parts of Orkney where the respective Councils exercise the functions in their capacity as harbour authorities under the powers contained in the Zetland County Council Act 1974 and the Orkney County Council Act 1974.

Locational Guidelines

These guidelines, introduced by the Executive in the autumn of 1999 augment the interim planning arrangements and were intended to assist local authorities (in particular) and other regulators involved in the consideration of new and modified marine fish farming developments. They now also apply to renewal cases (i.e. where the Crown Estate lease has expired). It is very difficult to be precise about "how many farms are in line with the guidance". What I suggest is important is that they are widely recognised and routinely used by both potential applicants and the relevant regulators. Since their introduction all applications have been subjected to and considered in terms of the guidelines (although the authorities must also have regard to the specifics of the application coupled with knowledge of individual site characteristics). I understand from the Crown Estate that thus far they have accepted the local authority view in all cases since the interim arrangements were introduced. I think it is also worth emphasising that the "presumptions" contained in the guidelines against development on the north and east coasts continue to be observed.

Our view and that of that of the Crown Estate would be that the guidelines have concentrated the minds of applicants. Potential applications with little prospect of success have simply not been pursued. The standard of applications and supporting information has risen sharply since the introduction of the guidelines (due in part to the new Environmental Assessment legislation) and we anticipate this improvement may continue as industry becomes even more familiar with these still relatively new procedures.

We do accept, however, that even after just 2 years, the guidelines are beginning to require some revision and updating e.g., review of the designation of "constrained areas" and to take account of the development of new species, locating farms further off-shore, or conversely, on land. I think the guidelines can also be regarded as a first, but significant step, towards mapping the carrying capacity of Scottish coastal waters and in the review of the guidelines, which we intend to undertake over the next 12 months, this is an aspect which we will wish to consider developing.
Environmental Impact Assessment (EIA) Legislation

We have consulted the Crown Estate Commissioners as they are the "competent authority" for the EIA regulations (except in those parts of Orkney and in Shetland where it is the responsibility of the local authorities.) Since the introduction of the revised regulations in March 1999 they advise that all fish farming applications i.e. proposed new sites, modifications to existing sites and renewals have been screened for EIA purposes. As with the locational guidelines it is difficult to be precise about actual figures. The Crown Estate, for example, only counts an environmental report as an actual "Environmental Statement (ES)" where it has been prepared specifically to address the information needs arising from a screening exercise, or where it has been submitted in support of an application. It is sometimes the case that hydrographic, benthic and other supplemental information is either submitted or sought, say as a result of the consultation process, but this sort of data would not be regarded as an ES. It is also worth pointing out that very few modification applications result in ES because the majority only involve insignificant variations where the thresholds specified in the legislation are not breached. However, in an effort to give the reporters some idea of the numbers involved thus far - but bearing in mind what I have just said about what we count as ES - there have been 11 ES out of 42 applications screened, of which 22 were modifications and 8 were renewals.

Containment Code of Practice

Introduced only last autumn, this is a salmon industry code of practice. Within the main trade association, Scottish Quality Salmon (SQS), members are obliged to comply, or commit to working towards compliance with the requirements. I understand the Shetland salmon industry and the trout sector have similar arrangements in place. For information about compliance I would suggest you contact SQS direct (John Webster, SQS, Durn, Isla Road, Perth PH2 7HG: Tel 01738 587000). We in the Executive encouraged this process because, as members of the North Atlantic Salmon Conservation Organisation (NASCO), we have undertaken to ensure that our salmon industry take appropriate steps to improve site security and thereby minimise the risks of escapes and, to develop site specific contingency plans for recovery of any escaped fish, should this be considered feasible. In addition, plans are well advanced to introduce secondary legislation in the autumn which will make notification of escapes to the Executive a statutory requirement.

ISA Code of Practice

The ISA Code of Practice was published in August 2000 and every fish farm in Scotland was sent a copy. It recommends best practice on farms, in processing and transport to avoid and minimise the impact of ISA and has wider fish health status value. Formal monitoring of implementation of the Code on both fresh and seawater farms is being carried out by the SEERAD Fish Health Inspectorate. When the Code was published most farms were stocked, committing them to their current cultivation plan, so compliance in some respects will take time. Halfway through the first monitoring year the 330 compliance inspections completed indicate a number of shortcomings (e.g. too little documentation of disinfection (69% compliance)), but on the whole compliance is good. Many other compliance figures were in the high nineties with one hundred percent being achieved for separation of broodstock and juvenile fish and provision of predator control. We are continuing to monitor the position and will report to the Aquaculture Health Group later in the year. Wider pressures to comply include incorporation of the Code in industry quality assurance accreditation documentation and the awareness of retail multiple buyers and insurers.
Enclosed with this letter, as requested, are details of the last 3 years (and the current year's) aquaculture related R & D projects which we have commissioned from FRS at Aberdeen. It will be self evident that the list of projects is skewed significantly towards fish health and disease control. This is because of the need to underpin and support our statutory obligations in that regard, including the extensive national fish health inspection regime (a programme which costs around a further £1 million annually to deliver). Of course this only reflects SEERAD commissions from the funds available for aquaculture related R & D. Much more aquaculture related research is carried out by industry, other institutions and other parts of Government, notably DEFRA, with whom we work closely. I would also take this opportunity to say that Scottish interests have been well served over recent years through the research commissioned by the likes of DEFRA, NERC etc.

You also asked for information about the results of aquaculture related research projects that have been completed. We have thought quite carefully about how best to provide this sort of information. I think the simplest way would be for the reporters to scrutinise the 2 documents enclosed that list the scientific papers and other publications from FRS that report the results of its research. One lists publications by members of the Aquaculture and Animal Health programme, predominantly disease related, and the second, publications by FRS staff from the Aquatic Environment and Freshwater Fisheries programmes on environmental impacts of aquaculture. I suggest that if the reporters have questions or require further details they could be picked up when they visit FRS on the 14th of this month.

Links between shellfish toxins and fish farming

The reviews will take the form of desk-based studies and the areas to be addressed will be:

- the current knowledge on the occurrence of algal blooms (harmful or otherwise) in Scottish coastal waters;
- the impact of nutrient inputs from fish farms on the algal communities of the Scottish coastal zone; this assessment should take place over a range of scales from individual sea lochs to regional seas.

The reviewers will be able to utilise material provided by the Scottish Executive and will refer to the wider scientific literature in developing their reviews. Co-operation with other institutions will also be sought to provide a suitably wide package of background information for the reviewers and access to unpublished data which may be relevant. The organisations we have in mind include SEPA, FRS Marine Laboratory and research institutions such as Dunstaffnage Marine Laboratory, Oban, the Sir Alister Hardy Foundation, Plymouth and the Institute of Aquaculture, Stirling.

Environment colleagues are still going through the process of identifying the reviewers from a short list of experts in the required fields.
I hope this helps to inform and update the reporters on the above topics. That only leaves outstanding issue - SEPA’s modelling techniques - information about which I will get to you by your mid-August deadline.

I am copying this letter to Tracy Hawe in view of the interest of the Rural Development Committee.

Gordon Brown

Encl:
   Publication lists of completed R&D Projects
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2001-02  FISHERIES CUSTOMER GROUP BUDGETED COSTS 2001-02 Estimates and Actuals

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<td>AE1252</td>
<td>Hydrobiology of the Minches</td>
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<td>FC1180</td>
<td>Novel oral/immersion vaccine delivery systems for novel DNA vaccine formulations</td>
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<td>Evaluation of disinfectants against notifiable diseases, principally fish viruses</td>
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<td>FC1184</td>
<td>Diagnosis of emerging diseases</td>
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<td>FC1185</td>
<td>Solutions for Legislative control of VHS in the marine environment</td>
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<td>FC1186</td>
<td>Ecology, biochemistry, genetic characterisation, and immunology of Infectious Salmon Anaemia Virus (ISAV)</td>
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<td><strong>Totals 2001-02</strong></td>
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TRANSPORT AND THE ENVIRONMENT COMMITTEE

AGENDA ITEM
TE/01/

Subject: Petition 96 – Petition by Mr Allan Berry calling for an independent investigation into the environmental impacts of sea cage fish farming.

Meeting No: 20th Meeting

Meeting Date: 5 September 2001

Author: Note by the Senior Assistant Clerk

BACKGROUND

1. At its meeting of 26 June 2001, the Committee (together with members of the Rural Development Committee) took evidence from the Deputy Minister for Rural Development, Rhona Brankin. This evidence focused on the Executive work plan regarding sea cage fish farming, and the Executive’s view that an independent inquiry was not the best way to deal with the concerns identified by interested parties. The concerns identified included a lack of transparency and openness in Executive policy and decision making, and fears regarding the impact of nutrient enrichment, chemicals and medicines on the environment, and the impact of fish farming on wild salmon stocks.

2. At the conclusion of this evidence the Committee discussed ways of taking the issue forward. The Committee agreed to write to the Executive to reiterate its request that the Executive establish an independent public inquiry into the issue and agreed to appoint Robin Harper and Bristow Muldoon as reporters. It was agreed that the reporters would monitor the progress being made by the Executive over the summer recess in relation to the initiatives outlined in the Minister’s evidence. It was further agreed that the Committee would consider a paper on how to take forward consideration of the issue immediately after the recess.

3. A separate paper outlines the progress made by reporters on this issue over the summer recess. The Convener wrote to the Deputy Minister on 28 June reiterating the desire of the Committee to see an independent inquiry established. A response from the Deputy Minister has now been received. In essence, the Deputy Minister repeated her earlier view that an inquiry was not the best way to tackle the issues of concern. It is her belief that the issues requiring attention have been identified and are being taken forward by the Executive in the Executive’s research review of planning and regulatory powers and the development of an aquaculture strategy. She accepted that some gaps exist in scientific knowledge and noted that these gaps were being targeted in their research and development work programme, The Executive also undertook to provide any necessary assistance to the Committee in the event of the Committee agreeing to undertake its own inquiry.
4. **The purpose of this paper is to present options for taking forward further consideration of the issues by the Committee.** Members may wish to consider the matters set out in the paper from Reporters outlining their meetings and investigations carried out over the summer. This paper should assist members to assess the extent to which concerns expressed by themselves and external stakeholders have been or will be addressed by the Executive in their work programme.

**OPTIONS**

5. There are a number of options open to the Committee, including a full Committee inquiry, the continued appointment of reporters, or the concluding of the Committee’s consideration of the petition. This paper explores these options and outlines potential mechanisms for liaison or joint work with the Rural Development Committee in consideration of this issue. The paper also reminds members of the Committee’s planned work programme.

**WORK PROGRAMME**

**Transport and the Environment Committee**

6. Members will be aware that the Water Services (Scotland) Bill is expected to be introduced shortly after the recess. On its introduction, the Parliamentary Bureau will refer the Bill to a subject committee for Stage 1 scrutiny, and it is likely that the Bill will be referred to this Committee.

7. Under Rule 9.5.3 of Standing Orders, the business programme will set out the timeframe within which each stage of the Bill is to be taken. However, to inform members’ assessment of options for further consideration of sea cage fish farming issues, members should note that planned Committee time up until the Christmas recess may be fully taken up with consideration of the Bill. It must be stressed that this estimate is provisional, and will be influenced by a range of factors, not least the date of introduction of the Bill, which is not yet known.

8. In essence, this means that once the Committee’s subordinate legislation and petitions commitments are taken into account, there will be little or no spare capacity within Committee meetings scheduled between now and the Christmas recess (or the conclusion of Stage 2 of the Bill, whichever is later). Stage 3 of the Bill also makes demands on Committee Clerking staff, who will process Stage 3 amendments.

9. The Land Reform (Scotland) Bill is also likely to be introduced after the summer recess, and this Committee may have an interest in considering the access provisions of this Bill.

10. Members will recall that at the meeting on 26 June, the Deputy Minister made reference to the Water Environment (Scotland) Bill, which is expected to be introduced in the Spring session. No firm timeframes are available as yet for the
consideration of this Bill, however it might be anticipated that it will occupy a similar amount of time to the Water Services Bill.

11. The Committee will therefore be required to scrutinise two pieces of legislation in the next parliamentary year, meaning that time available to undertake inquiry work is more limited than it has been in the past. **On current information, the period between January and March 2002 is likely to be the only time during which the Committee is free from the pressures of lead committee primary legislation commitments and therefore the only time in the foreseeable future which could be specifically devoted to inquiry work.**

12. If the Committee wishes to pursue a fairly substantial inquiry into sea cage fish farming during this period (approx January – March 2002), it will be difficult to investigate other issues in which the Committee has indicated an interest (such as tendering of Highlands and Islands ferry services, Waste and Re-cycling) – unless extra meetings of the Committee are scheduled, with consequent extra demands on the time of members and staff.

13. Committees would not normally be expected to undertake inquiry work at the same time as fulfilling their duties as lead committee on a Bill. However, if a Committee felt that there were compelling reasons for an inquiry to take place in tandem with consideration of primary legislation there is no procedural barrier to this taking place. It would of course require additional meetings to be scheduled and resourced. In any event, if an inquiry was to be held, sufficient time must be set aside at the outset to undertake necessary preparatory work such as the collection and assessment of written evidence and the appointment of an adviser.

Rural Development Committee

14. If the Committee wishes to consider joint working with the Rural Development Committee (RDC), then members might find it helpful to be aware of the RDC work programme.

15. Discussion with the RDC Committee clerks indicates that they are also likely to be considering primary legislation in the period under consideration. The RDC Committee may also be involved to some extent in the Stage 1 scrutiny of the Land Reform (Scotland) Bill. If the Protection of Wild Mammals (Scotland) Bill proceeds to Stage 2, this will take substantial RDC time in Autumn 2001. The RDC is also likely to consider the Fur Farming (Scotland) Bill in the Autumn session and a member’s Bill on Organic Farming could be introduced in early 2002.

16. It is therefore not currently possible to identify with any certainty a gap in the RDC legislative timetable that coincides with the Transport and the Environment Committee’s period free from legislative commitments in early 2002. This does not mean that RDC scrutiny of the issue will be impossible. However, if the legislative picture did not change, it would require any inquiry or investigatory work to be carried out in tandem with legislative commitments and would again necessitate additional meetings and resources.
NEXT STEPS

17. There are effectively three main options for the Committee in taking this issue forward:
- Take no further Parliamentary action
- Undertake parliamentary scrutiny of the Executive Work Programme
- Undertake a Parliamentary Inquiry into the issue

An explanation of these options is set out below.

TAKING NO FURTHER PARLIAMENTARY ACTION

Option 1 - No further parliamentary action

18. If Committee members feel that the Executive is responding adequately to the matters raised, it is open to the Committee to decide that the matter does not warrant further parliamentary scrutiny at this stage. The matter would then be left in abeyance, although it would be possible for the Committee to return to these issues at a later date.

OPTIONS FOR PUBLIC PARLIAMENTARY SCRUTINY OF THE EXECUTIVE WORK PLAN

19. Members should note that Options 2(a) – 2(c) below are not mutually exclusive, and it is envisaged that they may be used in combination. It is open to the Committee to appoint Committee adviser(s) in conjunction with these options and this is strongly recommended given the technical and complex nature of the subject.

Option 2(a) – Scrutiny by Reporters/Progress Reports from the Executive

20. Robin Harper and Bristow Muldoon were appointed by the Committee to monitor the progress of the Executive over the summer months. They have met with a number of industry and environmental interests and held talks with Executive officials, including scientific experts.

21. It would be possible for the Committee to re-appoint reporters on this issue, and build in regular slots in the Committee timetable for reporters to report back to the Committee as a whole. This option has the advantage of allowing the Committee to be kept fully briefed on the latest developments (while allowing formal Committee meeting time to be used discussing other aspects of the Committee work programme). Indeed, some external groups may well find meetings of an informal nature more productive than formal evidence taking. Conversely, this option may not satisfy the need to make both the Executive policy-making process and the Committee consideration of Executive policy more transparent. However, to meet this objective it would be possible to request that the Executive provide regular written updates to the Committee on progress, and/or to request that the Minister regularly appear before the Committee to explain the work being undertaken and results of consultations. Given the number of Executive work
initiatives underway at present, the Committee may find this option useful to keep members up to speed.

22. This option does not offer a formal role for the RDC, however any member of the RDC may attend relevant meetings of the Committee on this issue and participate in discussions, with the agreement of the Convener.

Option 2(b) – Scrutiny by reporters with the addition of targeted Evidence taking

23. It is envisaged that this option would be carried out in conjunction with the use of reporters as described in Option 2(a) above. In addition to receiving reports from reporters and hearing from the Minister, the Committee could also take evidence from interested parties on the issues that appear to be of most concern.

24. This evidence could be taken in the gap between consideration of Bills as outlined in the ‘Work Programme’ section above. The advantage of this option would be to allow interested parties to put forward their views, and answer questions ‘on the record’ which could go some way towards meeting calls for greater transparency on this issue. Members should be aware that if this option were taken, it would reduce the time available to hear evidence or undertake inquiries on other subjects, unless extra meetings of the Committee are scheduled.

25. Given the intense interest in this issue, it would require careful management to ensure that expectations of this process were kept at a realistic level. (It should be emphasised that this option involves the Committee scrutinising Executive policy, and placing that information in the public domain, rather than constituting an inquiry mounted by the Committee.)

26. The RDC could if they wished appoint reporters to attend any such evidence sessions. The RDC could also choose to take a similar approach, taking evidence on issues relevant to their own remit. It should be noted that if both Committees were to take evidence at the same time, this would require careful co-ordination to minimise the risks of excessive demands being placed on witnesses and possible duplication of effort.

27. The two Committees could also seek the approval of the Parliamentary Bureau to consider the matter jointly under Rule 6.14. This would involve the Committees meeting jointly, with the meeting being convened by the Convener of either Committee. All meetings require both Committees to be quorate, and any vote taken in a meeting must be taken separately by both Committees. Any report produced following joint consideration of an issue must be produced jointly by both Committees.

Option 2 (c) – Stage 1 of the Water Environment Bill

28. As has been noted by both the Committee and the Executive, a number of the issues under discussion are likely to fall within the scope of the proposed Water
Environment Bill, which will provide an opportunity to make legislative changes in this area.

29. It would therefore be possible for the Committee to continue more in-depth scrutiny of Executive policy during the course of this Bill, either at a pre-legislative or Stage 1 level. Once again, the use of this option is not inconsistent with either of the options described above, and could be used in tandem with those approaches, albeit at a later date.

30. If the Committee were to engage in scrutiny at this point, it could enable members to undertake work on other issues, (in the gap between the two Bills) as well as scrutinise Executive policy in this area. However, it may be that some of the issues relating to fish farming fall outwith the scope of the Bill, so that such scrutiny may not be able to comprehensively deal with all the issues.

31. This option does not offer a formal role for the RDC, however any member of the RDC may attend relevant meetings of the Committee on this issue and participate in discussions, with the agreement of the Convener.

OPTIONS INVOLVING A PARLIAMENTARY INQUIRY

32. Members will be aware that the issues, and the potential for a Committee inquiry, have been subject to continued debate amongst stakeholder groups over the summer months. Opinion appears to be divided on the merits of a Parliamentary inquiry. As can be seen from the submissions sent to reporters (attached to the reporter's paper), many groups remain strongly in favour of this option, believing it to be necessary publicly to air views and obtain transparency in governmental decision making. Other groups have expressed concern that an inquiry would unnecessarily polarise views and reduce the chances of finding a consensus. Fears have also been expressed that having to respond to such an inquiry would divert Executive resources away from current efforts to move the situation forward, resulting in further delays in policy developments.

33. In the event of an inquiry being mounted, it would be desirable, given the complexity of the subject matter, to commence work on defining the terms of reference of the inquiry, providing background briefing, calling for written evidence and appointing an adviser substantially in advance of oral evidence taking. In particular, the appointment of an adviser is likely to take some time given the complexity of the subject and the wide range of divergent views held by external groups. Preparatory work could also be undertaken by reporters in advance of an inquiry.

Option 3(a) – Focused Inquiry by the Transport and the Environment Committee (Jan – March 2002)

34. This option is probably best employed if the Committee wishes to hold a short, focused inquiry between consideration of the two Water Bills in early 2002.

35. This would involve picking out key issues on which to inquire into and developing a very specific remit for an inquiry, which would not attempt to cover the whole
spectrum of issues relevant to the industry. The Committee would then take very focussed evidence on one or two key topics of concern. As an inquiry within this Committee’s remit, it would not be able to focus on any issues that are within the remit of the RDC.

36. This option has the advantage of allowing the issues to be brought into the public domain by the evidence taking process. It is likely that in the time available the Committee could hold up to half a dozen evidence-taking sessions, although dependent on the topic chosen fewer sessions may be sufficient. This is working on the assumption that the lead-in work needed to prepare an inquiry such as appointing adviser(s), defining terms of reference and calling for evidence would be completed before Christmas and allows adequate time to agree any report. Given this time frame, the Committee may find it difficult to reach definitive conclusions in the face of conflicting scientific advice.

37. The inquiry would need to be carefully managed to avoid raising unrealistic expectations on the part of interest groups who might wish to see a lengthier and more wide ranging inquiry take place.

38. Members will be aware that the Executive is also undertaking a number of initiatives that are likely to overlap to some degree with any inquiry, such as the development of an aquaculture strategy. In establishing a remit it would therefore be desirable to consider how the Committee’s work might augment rather than duplicate the Executive’s work programme.

Option 3(b) – Longer Term Inquiry by the Transport and the Environment Committee

39. Such an inquiry would cover the whole spectrum of issues raised by external parties, (within the remit of the Transport and the Environment Committee) rather than simply picking out key options as in Option 3(a) above. Once again the appointment of an adviser to any such inquiry is strongly recommended. Undertaking such a wide ranging inquiry would enable the Committee to demonstrate that it had addressed directly the concerns of all stakeholders, but might also run the risk of duplication with the programme being taken forward by the Executive.

40. The Committee could seek to undertake such an inquiry in the period during January and March 2002. However, it might prove difficult to examine the whole spectrum of issues in sufficient depth during this period. Alternatively, the Committee could seek to schedule an inquiry which would run in tandem with consideration of primary legislation.

41. Another option would be to undertake an inquiry after both Water Bills have been disposed of. Such a delay would however, mean missing the opportunities for legislative change afforded by the Water Environment (Scotland) Bill and the development of the Executive aquaculture strategy and leaves the Committee open to criticism for further delays.
42. Members should also be aware that the legislative programme for 2003 is yet to be announced, and it is possible that the Committee could again be involved in legislative scrutiny in 2002/3, thereby reducing the time available for Committee inquiries. The Committee should also bear in mind the possibility that the court proceedings regarding trunk roads could be resolved prior to this period, in which case the Committee may wish to reschedule the inquiry into trunk roads.

OPTIONS INVOLVING THE PARTICIPATION OF THE RURAL DEVELOPMENT COMMITTEE

43. The RDC discussed this matter on 26 June, after hearing the evidence of the Deputy Minister. The RDC agreed that the Convener should discuss with the Convener of the Transport & the Environment Committee the possibility of an inquiry being carried out jointly, possible divisions of responsibility between the Committees, and the need for one or more Advisers.

44. Should this Committee wish to pursue an inquiry together with the RDC then it would be necessary to use one of the mechanisms set out below enabling committees to work together.

Option 4(a) – Inquiry by the Transport and Environment Committee, with input from RDC Reporters

45. One option is for a single Committee, say the Transport and the Environment Committee, to undertake an inquiry while the other interested Committee (the RDC) appoints reporters to monitor and contribute to the inquiry, and report back to RDC.

46. Under this option, RDC Reporters could contribute to all public discussion and evidence sessions, at the discretion of the Convener (as indeed could any member under Rule 12.2.2). However, it would not permit them to attend meetings of the Committee in private (e.g. when a draft report is being agreed) or participate in votes. (It should be noted that this option could also be applied in reverse, e.g. the RDC undertaking an inquiry with this Committee appointing reporters).

47. This option would mean that any inquiry would take place within the remit of the Transport and Environment Committee, rather than being able to cover issues that fall within the RDC remit, so RDC reporters’ ability to input on RDC concerns would be limited.

Option 4(b) – Two single Committee Inquiries

48. The two Committees could agree to undertake separate inquiries, with complementary remits. (As occurred for example when the Education, Culture and Sport and the Enterprise and Lifelong Learning Committees undertook inquiries into the Scottish Qualifications Authority’s handling of exam results during 2000).
49. Holding two separate inquiries would allow both Committees to investigate the issues of concern that lie within their respective remits, while minimising the potential for duplication between the work of the Committees. In practice this would require such inquiries to have very clearly drafted remits to avoid the risk of ‘cross-over’. This approach would also have the advantage of not requiring the two Committees to align their work programmes – although it would of course be sensible for each Committee to be aware of the progress being made by the other.

50. (Should it not prove possible for the Committees to agree the approach outlined above, rule 16.3.2 could apply. That is, the Parliament may, on a motion from the Parliamentary Bureau, name one of the Committees as the lead Committee on the matter. In this instance, one Committee is asked to give their opinion to the lead Committee. However, experience has indicated that it is possible for Committees to agree complementary inquiry remits, and this consensual approach does appear preferable to involving the Bureau and requiring a decision of the Parliament on the matter.)

Option 4(c) – Joint Consideration

51. Where a matter falls within the remit of more than one Committee, the Committees may, with the approval of the Parliamentary Bureau, decide to consider the matter jointly. (Rule 6.14) This would involve the Committees meeting jointly, with the meeting being convened by the convener of either Committee. All meetings require both Committees to be quorate, and any vote taken in a meeting must be taken separately by both Committees. Any report produced following joint consideration of an issue is to be produced jointly by both Committees. The Justice I and II committees have met jointly in the past, producing their Stage 1 Report on the Budget together, however the option of joint consideration during a substantive subject related inquiry has not previously been used in the Parliament.

52. Joint consideration (if the Committees could agree a suitable timeframe) would allow both Committees to be fully involved in a single inquiry with a unified remit which covers the interests of both Committees. This could reduce the possibility of duplication or confusion between the work of the two Committees (although the option of holding two separate inquiries would also fulfil this objective).

53. In addition, it has become apparent that the Standing Orders relating to joint consideration are somewhat cumbersome in practice (for example the rules on voting) and would benefit from revision in the light of experience. The Procedures Committee has indicated that it wishes to review the relevant Standing Orders, but it is unlikely that their work would be completed in time to affect a joint inquiry on this issue.

54. Finally, current work programmes indicate that the periods that each Committee has free from primary legislative commitments do not coincide until late 2002 (at the earliest). Joint consideration is also therefore likely to involve at least one committee undertaking the inquiry at the same time as dealing with a Bill.
Option 4(d) – Sub-Committee

55. Under Rule 12.5 a Committee may establish a sub-committee with the approval of the Parliament, on a motion by the Parliamentary Bureau. The Bureau Motion will also set out the remit and membership of a sub-committee. Importantly, the remit of the sub-committee may not include any matter outwith the remit of the ‘parent’ committee. It is difficult therefore to see any real advantage in pursuing this mechanism.

SUMMARY

Timing and Workload

56. In considering the way forward on this issue members may wish to take into consideration the following issues of timing and workload:

- sufficient time must be set aside at the outset of any inquiry to ensure that necessary preparatory work can be undertaken such as the collection and assessment of written evidence and the appointment of an adviser;
- on current assessment, the Transport and the Environment Committee is free from primary legislation commitments during the period January to March 2002 – this is therefore the only period in the foreseeable future which could be specifically devoted to inquiry work on this issue;
- work undertaken later than the first few months of 2002 may miss the opportunity of feeding into the planned Water Environment Bill which the Executive have indicated may be introduced in Spring 2002;
- clearly undertaking inquiry work on this issue will affect the time available to the Committee to investigate other issues in which it has expressed an interest – unless additional meetings are scheduled and resourced;
- on current assessment, the earliest point at which the Transport and the Environment and the RDC Committees are free from primary legislation commitments at the same time is late 2002; and
- it is not normally expected that Committees will undertake inquiry work at the same time as undertaking lead Committee consideration of a Bill – however there is no procedural barrier to this. It would however involve scheduling and resourcing additional meetings.

Options

57. The options available are:

- Take no further Parliamentary Action
- Undertake Parliamentary scrutiny of the Executive Work Programme through:
  - Scrutiny by Reporters with Reports Back from the Executive; and/or
  - Scrutiny by reporters with the addition of oral Evidence taking from the Executive and other stakeholders; and/or
  - Scrutiny during Stage 1 of the Water Environment Bill
- Undertake a Parliamentary Inquiry by:
- Undertaking a focused inquiry (either in Jan – Mar 2002 or concurrently with legislative scrutiny)
- Undertaking a longer term inquiry after the completion of the Water Bills

- Options for liaison or joint work with the Rural Development Committee (RDC) in undertaking an inquiry are:
  - Single Committee inquiry with attendance by reporters from the other Committee
  - Two single committee inquiries with complementary remits
  - Designation of a lead and secondary Committee
  - Joint consideration by both Committees

- Other factors
  - In making a decision as to the best option, Members might wish to address:
    - how best to address the concerns of the petitioner and other stakeholders
    - how best to avoid unnecessary duplication of effort by the Committee and other stakeholders
    - workload and resource issues
    - the opportunity costs of being unable to undertake in depth scrutiny of other issues of concern to the Committee

58. The Committee is invited to consider the options laid out above, and indicate their preference for taking this matter forward.

Tracey Hawe
Senior Assistant Clerk
August 2001
Fisheries and Aquatic Environment R&D Programme

Schedule of Projects currently underway 2001 – 2002

**FISH CULTIVATION**

This note provides additional details on eight of the eleven R&D projects listed on the note provided to the Committees before hearing on the 26th June 2001.

These projects fall under the following generic categories.

<table>
<thead>
<tr>
<th>CODE</th>
<th>UK PROGRAMME TITLE</th>
<th>SUMMARY OBJECTIVES</th>
<th>KEY CUSTOMER PURPOSE</th>
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<tbody>
<tr>
<td>FC11</td>
<td>Fish and Shellfish Health</td>
<td>Improve understanding of the nature of the major fin and shellfish diseases, develop more efficient diagnostic procedure, and identify new control measures.</td>
<td>Enable SEERAD to more effectively respond to outbreaks of fish and shellfish diseases, through rapid testing and adoption of appropriate control measures in the light of research funding.</td>
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<tr>
<td>AE11</td>
<td>Biological effects and impact assessment</td>
<td>Assess the sub-lethal effect that pollutants have at the cellular, organ and individual level, for example causing changes in normal genetic, behavioural and reproductive activity, and interpret the potential impact of pollutants at the population level.</td>
<td>Enable SEERAD to assess the overall impact of pollutants and establish, whether individually or in combination, they are having an effect on the environment.</td>
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Equivalent details will be provided in due course for projects AE1159, AE1160 and AE1252.
Schedule of Current R&D Projects

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<tr>
<th>Code</th>
<th>Starts</th>
<th>Ends</th>
<th>Title</th>
<th>Summary Objective and Key Customer Purpose</th>
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<tr>
<td>FC11</td>
<td></td>
<td></td>
<td><strong>Fish and Shellfish Health</strong></td>
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<td>FC1180</td>
<td>Apr-98</td>
<td>May-03</td>
<td>Novel oral/immersion vaccine delivery systems for novel DNA vaccine formulations</td>
<td>Summary objectives:- To improve knowledge and methodologies relating to novel vaccine production and delivery. Key Customer purpose:- To enhance sustainability and viability of the aquaculture industry through the provision of alternative vaccine strategies.</td>
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<td>FC1181</td>
<td>Apr-00</td>
<td>Mar-03</td>
<td>Disease susceptibility and immunology of cultured marine fish.</td>
<td>Summary objectives:- (i) To investigate whether Atlantic halibut and cod are susceptible to Infectious Salmon Anaemia Virus (ISAV), Infectious Pancreatic Necrosis Virus (IPNV), Nodavirus, <em>vibrio viscosus, Piscirickettsia salmonis</em> and Salmon Pancreas Disease Virus (SPDV) and, (ii) examine methodologies for the detection of pathogen in larval marine fish and, (iii) establish the risk posed by new aquaculture species to established species such as Atlantic salmon and <em>vice versa</em>. Key Customer purpose:- To allow SEERAD to assess and advise on the risk posed by new aquaculture species to established species and anticipate any necessary control measures.</td>
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<td>Pathogenic IPN.</td>
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<td>To investigate whether the lethal agent</td>
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<td>particular virulent strain of the IPN virus or</td>
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<td>another unknown viral agent; to investigate</td>
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<td>To improve current understanding of the Shetland</td>
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<td>Apr-00</td>
<td>Mar-02</td>
<td>Evaluation of disinfectants against notifiable</td>
<td>Summary objectives:-</td>
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<td>diseases, principally fish viruses.</td>
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<td>efficacy of disinfectants against ISAV.</td>
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<td>To allow SEERAD to advise on the use of the</td>
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<td>most efficacious disinfectants following</td>
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<td>clearance of an ISA infected fish farm.</td>
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<td>FC1184</td>
<td>Apr-00</td>
<td>Mar-03</td>
<td>Diagnosis of emerging fish diseases.</td>
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<td>To develop and improve molecular methods of</td>
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<td>diagnosing and distinguishing emerging diseases</td>
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<td>To provide advice in the event of unexplained</td>
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<td>response to, and control of, disease outbreak.</td>
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<td>FC1185</td>
<td>Apr-01</td>
<td>Mar-03</td>
<td>Solutions for legislative control of VHS in the marine environment.</td>
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<td>To provide a classification system for VHS virus isolates based on an assessment of their risk presented to aquaculture species.</td>
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<td>To allow SEERAD to develop management strategies as an alternative to eradication during VHS outbreaks where the virus is not particularly virulent in a given species of cultured fish.</td>
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<td>FC1186</td>
<td>Apr-01</td>
<td>Mar-02</td>
<td>Ecology, biochemistry, genetic characterisation, and immunology of Infectious Salmon Anaemia Virus (ISAV).</td>
<td>Summary Objectives:</td>
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<td>(i) To determine where ISAV resides in the environment following an outbreak of the disease on a fish farm, and;</td>
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<td>(ii) Determine how long ISAV can survive on the host animal, and;</td>
<td>Improve and understand the distribution of ISAV and identify high risk factors.</td>
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<td>(iii) Complete the immunological, biochemical and genetic characterisation of ISAV.</td>
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Number of projects in programme 7
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<td>AE11</td>
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<td>Biological effects and impact assessment</td>
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<td>AE1158</td>
<td>Apr-00</td>
<td>Mar-04</td>
<td>Impacts of salmon farming on wild fish populations.</td>
<td>Summary objectives:-</td>
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<td>(i) To investigate and quantify the risk to wild sea trout populations in Scotland from sea lice originating from salmon farms and,</td>
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<td>(ii) to identify cost-effective management strategies to reduce the risk to sea trout without unacceptable impact on the environment.</td>
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<td>Provision of advice to minimise the impact of aquaculture on wild fish populations particularly from sea lice.</td>
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Subject: Petition 96 – Paper from Reporters outlining work undertaken on this petition by Mr Allan Berry calling for an independent investigation into the environmental impacts of sea cage fish farming.

Meeting No: 20th Meeting

Meeting Date: 5 September 2001

Author: Note by the Senior Assistant Clerk

Background

At its meeting of 26 June 2001, the Committee (together with members of the Rural Development Committee) took evidence on this issue from the Deputy Minister for Rural Development, Rhona Brankin. At the conclusion of this evidence the Committee discussed ways of taking the issue forward. The Committee agreed to write to the Executive to reiterate its request that the Executive establish an independent public inquiry into the issue and agreed to appoint Robin Harper and Bristow Muldoon as reporters on the issue. It was agreed that the reporters would monitor the progress being made by the Executive over the summer recess in relation to the initiatives outlined in the Minister’s evidence. It was further agreed that the Committee would consider a paper on how to take forward consideration of the issue immediately after the recess.

A separate paper outlines options available to the Committee to progress this issue. The purpose of this paper is to outline the work undertaken by reporters on this issue over the summer recess.

Meetings

Reporters have undertaken a number of visits and meetings over the summer months, and these are summarised below:

Scientific Meetings

Reporters have met with Professor Randolph Richards of the Institute of Aquaculture, Stirling University, and with staff of Fisheries Research Services, Aberdeen (Dr Tony Hawkins, Dr Ron Stagg, Dr Malcolm Beveridge, Dr Colin Moffat, Dr Phillip Gillibrand and Dr Ian Davies). Robin Harper has also met with Dr Brian Austin, (an expert in fish diseases) at Heriot-Watt University, Edinburgh.
Working Groups


Visits to Fish Farms

Robin Harper has visited a Marine Harvest McConnell site in Sconser (Isle of Skye) together with an independent farm in Sconser, run by Alistair Ferguson. The latter site rears fish on contract to MHM, as well as operating as an independent farm. Bristow Muldoon has visited sites in Loch Linnhe, Loch Leven, and Sconser.

Meetings with the Petitioner, Scottish Executive and Interest Groups

Both Reporters have met separately with the Petitioner, Mr Alan Berry. Robin Harper has also met with representatives of Scottish Environment Link. Both Reporters attended a meeting with Scottish Executive staff (Gordon Brown, Head of Aquaculture Policy Branch, Graham Thompson, Liam Kelly of the Environmental Protection Unit, and Dr Ron Stagg of Fisheries Research Services).

Key Points arising from Meetings

Key points from these meetings are as follows:

Research

- more research is needed into carrying capacity of Scottish coastal and freshwater waters
- more research is needed into the reasons for the decline in wild fish stocks
- more research is needed into toxins
- more research is needed into sea lice control strategies

Policy and Administrative Issues

- The Water Environment Bill provides a significant opportunity to make changes to the current regime, by reviewing the Control of Pollution Act and implementing regulatory changes. The requirements of the Water Framework and other European Directives also need careful assessment.
- The locational guidelines for fish farms are also set to be reviewed in the autumn.
- It is proposed to transfer planning powers for fish farms to local authorities, however these proposals have been delayed by the lack of a suitable legislative vehicle.
- The Committee will have the opportunity to be involved in both the current Executive regulatory review (in autumn 2001) and the development of the strategy for aquaculture, which will be developed around the turn of the year.
- A comprehensive treatment strategy is needed for sea lice
- Fish farming is not the only reason for the decline in wild fish stocks and is not the only contributor to water pollution; land based and agricultural discharges are also involved.
- The industry could benefit from clear guidelines for the future, enabling them to plan and undertake capital investments. Policies implemented by the Executive could also usefully provide further incentives for the industry to continually improve environmental best practice.
- Working Groups (e.g., Tripartite Working Group, Aquaculture Forum, Area Management Groups) are useful, however they are not open to the public and could benefit from wider stakeholder input.
- In order to play its part in the framework SEPA must have appropriate support and resources, and could also benefit from a more clearly defined role.
- The current framework of voluntary agreements and codes of practice has been subject to criticism, with some groups favouring the strengthening of the regime to include more formal regulatory measures.

**Written Consultation**

On 10 July the reporters wrote to a number of interested parties. The letters requested the views of external groups on the current Executive work programme. Firstly, reporters sought views on whether there were identifiable gaps in the Executive work programme, and if so, what work was required to fill these gaps. Secondly, views were sought on whether the approach the Executive is taking to the issue was appropriate. Views were requested from the following groups:

Atlantic Salmon Trust (Dr Jeremy Read)
Mr Allan Berry (Petitioner)
Association of Scottish Shellfish Growers (Doug McLeod)
Salmon Net Fishing Association (Scotland) (Keith Allan)
Scottish Natural Heritage (Roger Crofts)
Scottish Quality Salmon (Julie Edgar)
Association of Salmon Fishery Boards (Andrew Wallace)
Salmon and Trout Association (Patrick Fothringham)
Scottish Anglers National Association (Jane Wright)
Scottish Environment Link (Jessica Pepper)
CoSLA (Jon Harris)

Responses were received from all these organisations with the exception of the Salmon Net Fishing Association. Copies of the responses are attached for member’s information. A number of the responses made comments of a more general application directed towards the regulatory review and the development of an aquaculture strategy currently being undertaken by the Executive. However, a number of gaps in the Executive research and development programme and a number of comments regarding the approach of the Executive are summarised below for members convenience.

**Gaps in the Executive Research Programme**

Respondents wished to see
• more research undertaken on the carrying capacity of Scottish waters in relation to nutrient loading and use of chemicals and medicines on fish farms
• a greater priority being given to environmental R & D as opposed to research on fish diseases
• more research on the impacts of chemicals and medicines on sea-floor communities and pelagic flora and fauna
• more substantive research into harmful algal blooms (HABs), in particular the alleged link between HABs and fish farming
• more research into the location of fish farms
• research being undertaken in a speedier manner, with more collaboration with industry, overseas scientists and NGO representatives on both the development of the programme and the reporting back of results
• more research on the impacts of farmed fish on wild fish (eg, escapes and genetic modification of wild stock, impact of farmed fish diseases and sea lice on wild stocks)
• more information on the costing and timeframes for research projects being made publicly available.

Problems with the approach of the Executive

Respondents identified the following issues of concern:
• slow progress to date in identifying and taking forward the issues of concern, together with an over-reliance on the efforts of industry and NGO’s to drive issues forward
• a lack of transparency and public scrutiny in policy making
• an over reliance on voluntary measures such as codes of practice, rather than statutory regulations (eg ISA and Escapes codes of practice)
• a need to incorporate wider sustainability issues into current policy
• a need to undertake strategic environmental assessment of government policies and apply best practices and the precautionary approach to environmental decision making
• a need to harmonise and effectively apply the plethora of regulations which apply to the industry
• a need to regulate parasites and predators that are not covered by existing fish health regulations (eg sea lice)

Members should note that a number of the problems identified with the approach of the Executive are likely to be carried forward by the Executive in their regulatory review and the development of an aquaculture strategy, although these initiatives are still in early stages of development.

As the Association of Salmon Fishery Boards notes, there are a number of forums that could be used to progress the issues, ranging from this Committee, to the proposed Executive Strategy group, and other groups such as the Tripartite Working Group and the Highlands and Islands Convention on aquaculture. In considering the separate paper on options and next steps members may wish to consider how best the Committee can ‘add value’ to the process of resolving the issues identified by stakeholders.
Further information from the Executive

Reporters requested a number of further written updates and briefings from the Executive on the following topics:

- Development of the longer-term strategic view
- the ISA and Containment codes of practice
- locational guidelines
- environmental impact assessment legislation
- interim planning arrangements and the transfer of planning powers to local authorities.
- Aquaculture Health Joint Working Group
- SEERAD R & D
- SEPA Modelling techniques
- Desk Study of links between shellfish toxins and fish farming

Correspondence from the Executive providing these written briefings and updates is also attached for members’ information.
Thank you for your letter of 28 June.

I welcomed the opportunity to meet you and your colleagues (and members of the Rural Development Committee) and was disappointed that I could not persuade you that a full-blown public inquiry into marine fish farming is unnecessary. As I said during the hearing, Ross Finnie and I believe that the concerns which surround the industry have already been identified, and that the wide range of initiatives which the Executive is pursuing will address them. However, I accept that there are some gaps in our scientific knowledge, which must be filled to inform future decision making and regulation. That is why, for example, we are targeting issues like sea lice and nutrient inputs in our research programme.

Equally, nothing I heard persuaded me that the Executive should establish an inquiry. We disagree that this would be the best way to tackle the issues of concern. I see no point now in looking back: we cannot change the past, although we can plan for, and influence, the future. I want to work now to develop a strategic framework within which the right decisions - for the industry and for the environment - can be taken.

I note that the Committees are considering the possibility of setting up their own inquiry. If that is the course you decide to take, let me reiterate that the Executive will provide whatever assistance may be sought. I note also that you have asked Robin Harper and Bristow Muldoon to ensure that the Committee are updated about the progress of our research programme and other developments. I anticipate no difficulty with this. My officials (Jinny Hutchison and her team) will give them every assistance they require and are looking forward to the opportunity to explain at first hand what is being done.

I am writing in similar terms to Alex Fergusson.

RHONA BRANKIN
Environmental Impacts of Sea Caged Fish Farming – Responses from S & TA Scotland and SANA

In broad terms we fully support the contents of the detailed and excellent representations made by the Association of Salmon Fishery Boards, in their letter to Tracey Hawe (Aug ’01); though for our part we deeply regret the decision made by SERAD not to hold a fully independent public inquiry. There can be no question that such an inquiry would have cleared the air and allowed all of us to learn from the mistakes of the past in order to find a path to the future. We believe that these should have been the overriding considerations when the decision was taken not to hold the inquiry. It is our contention that progress could then have been made without the encumbrance of the same degree of ongoing acrimony and conflict within this debate.

However, we would wish to make particular comment in two additional key areas. Firstly on the research program that SERAD are currently carrying out and secondly on the subject of future regulation of the industry.

SERAD’s Research Program

We have not made comment on the bulk of the research work listed as this covers disease in shellfish, pollutants, disinfectants against diseases, diagnosis of emerging fish diseases etc. most of this is outwith our competence. The only point we would make on project FC1186 concerned with the ecology, biochemistry, genetic characterisation and immunology of Infectious Salmon Anaemia (ISA), is that the Joint Working Group’s ISA Report should be reviewed, as some of the firebreaks appear to be in a random position, ie. Page 93, Area 15b at the head of Loch Linnhe. This may have been at the insistence of the Industry for its own management purposes, and not purely based on the requirements for ISA/disease management.
These comments therefore largely address gaps in AE1158 – ‘Biological Effects and Impact Assessment - Impacts of salmon farming on wild fish populations’, and are not in any particular order.

- We regret that despite evidence accumulated by West Coast Fisheries Trust biologists and from Norway and Ireland, research project AE1158 belatedly started in 2000, and is not due to finish until 2004, (at least 10 years too late.)

- We note that independent research over a number of years, by the West Coast Fisheries Trusts, showing risks to wild fish from sea lice, is presently being internally reviewed, with the intention of publication shortly, by the Association of West Coast Fisheries Trusts. The work shows that the patterns of synchronised production are broadly parallel to patterns of sea lice on wild fish i.e on/off, and in areas of mixed class production, lice are a continuing problem.

Recommendation: A co-ordinated approach between Fisheries Research Services (FRS) and the WCFT biologists should be taken in order to hasten remedial action that is needed to ensure the sustainability of both wild fish and salmon farming. Work programmes should be dovetailed instead of risking overlap and present collaborative knowledge should now be sufficient, on which to base trials of alternative management regimes and form the necessary legislation and rules to underpin Tri-Partite Working Group, (TWG) Area Management Agreements. (AMA’s) Where as much evidence exists, as it does on the subject of sea lice and their direct effect on marine mortality of wild salmon and sea trout, the Precautionary Principle should apply.

Greater acceptability of research in other fish farming countries could reduce the costs of present and future research programmes in Scotland, and allow faster progress towards problem solving.

- Resources are needed to trial alternative production methods proposed by the AWCFTs to the TWG, allowing for open monitoring by the Trusts and a reporting mechanism back to the TWG.

- Ref. AE1158 (i) “To investigate and quantify the risk to wild sea trout populations in Scotland from sea lice originating from salmon farms” A programme of parallel research is needed to ascertain the effects of sea lice on outgoing salmon smolts and incoming adult fish. The behaviour of sea trout in their marine phase is markedly different to that of salmon and Norwegian research has shown there to be a definite effect of mortality on outgoing smolts.

- Further research is needed on the impact of algal blooms on the food supply of anadromous species. Sub-lethal blooms that may be toxic to humans may also have a significant impact on the food chain, particularly the larval stages of sea fish species. Juveniles of these fish provide food for sea trout and salmon. Algal blooms may have an even greater impact on healthy adult sea fish stocks.
3.

- Research is needed on the impact on wild fish populations, of abnormal numbers of predators attracted by the ‘honey pot’ of intensive rearing of salmon at sea and smolts in fresh water. Many salmon farms are in the proximity of the estuaries of salmon rivers and smolt farms have often, erroneously in our view, been sited in waters already containing wild migratory fish.

- Research is needed on the behaviour of sea lice in the wild.

- We are aware of the inshore plankton work with sea lice larvae that (FRS) were conducting at their site at Shieldaig, and the ‘Stokes effect’ (the wave effect that condenses marine detritus and particularly the planktonic stage of sea lice, in marine margins). This work should be completed and published, as SANA and other bodies contributed to funding the early stages of the Shieldaig Sea Trout Project, and as stakeholders they would wish to be kept informed of progress.

- Research is needed into the optimum siting of fish farms with the idea of resiting those in sensitive areas (within the remit of the TWG ‘Concordat’) and developing a model for the identification of optimum sites.

- Research the genetic effects of the interaction between wild and farmed fish escapes, including escapes of smolts from freshwater farms. This should address the perceived weakening of the migratory instinct and the ability of anadromous fish to return to their natal rivers.

- Research the effects of fish farms in freshwater, particularly on the distortions to wild fish populations and the effects of downstream pollution on invertebrates etc.

The final point is that the research program should be flexible so as to incorporate other issues as they may arise. It is also critical that monitoring and reporting on the research program should be open, accessible and ongoing.

**REGULATION OF THE AQUACULTURE INDUSTRY**

Our second main point is that we firmly believe that it is now necessary to place the aquaculture industry within a flexible and effective regulatory framework that will allow the industry to be placed on a sustainable footing, whilst at the same time safeguarding wild fish and the environment.

Extract from a paper on regulation of the aquaculture industry by S&TA (S) and SANA (Aug2001) which is presently being discussed by the TWG:

“It has been intimated to us that there is an opportunity to include matters concerning the regulation of the aquaculture industry within the water and environment bill, time-tabled for February 2002. Not unnaturally, the department has given us to understand that unless it can be demonstrated that there is a crystal-clear need for regulation they are not minded to go down this
path. For this reason, before discussing the nature of a proposed regulatory regime, it is critical to demonstrate that need.

**The need for regulation:**

As far as wild fish interests are concerned, the principle problems that the aquaculture industry presents are those associated with sea lice, though matters such as fish farm escapes and fish disease *etc.* are also perceived to be critical. For this reason in demonstrating the need for regulation, it is appropriate to focus on the issues surrounding sea lice. However, it should be remembered that an effective regulatory regime must be flexible enough to cover all aspects in which the finfish farming industry impacts on the environment and wild fish.

Following the Tripartite Working Group meeting on the 23rd March 2001, SERAD made the following statement:

“*There is circumstantial evidence for a link between the presence of fish farms and the recent decline in wild salmon and sea trout in North West Scotland. The full nature of that link is not fully understood, but sea lice from fish farms, especially in enclosed sea lochs, may have led to a reduction in the marine survival of wild salmon and, in particular, sea trout.*”

If ever there were a situation set up as an example of where the “precautionary approach” should apply, this is surely it, as the approach is based on the principle that action be taken based on circumstantial evidence rather than on having to wait for concrete scientific proof.

In addition, Ross Finnie has given the following statement to the Rural Affairs Committee:

“*...We certainly recognise that, both within the Committees and among the wider public, there are concerns about issues around fishfarming. We have no wish to set aside or downplay these concerns: indeed we accept that they need to be fully and openly addressed and are committed to doing so.*”

And

“*...The aim is to ensure that the work of the various bodies is appropriate to the circumstances of this industry and to seek opportunities for better and more effective co-ordination as well as to strengthen the regulatory framework wherever necessary.*”

Having established that sea lice have been accepted as a problem that must be resolved, the question remains: “How?”
5.

1) The Tripartite Working Group was established in spring 1999 to bring the industry, wild fish interests and government together to seek a way forward out of a situation increasingly beset by bitter acrimony and entrenched views. This process has spawned a series of “Area Management Agreements” and these are increasing in number, if slowly. They aim to increase the flow of information between wild fish and aquaculture interests at a local level (with regard to lice counts etc.). However, more importantly, they are founded on agreements from the industry representatives who have undertaken to utilise various specific management practices designed to reduce the impact of aquaculture-associated sea lice on wild fish.

A number of serious concerns arise at such time as voluntary, unenforceable arrangements such as the AMAs are held up as a form of pseudo-regulation (in no particular order):

Firstly, no one is accountable at such time as this process should be shown to be inadequate.

Secondly, the public cannot form a judgement as to whether or not the system is working on an on-going basis, as they are not party to an adequate level of information generated by the AMA process. Indeed this not only applies to the public, but to parliament as well, as the information is, by and large, not in the public domain for supposed reasons of commercial confidentiality. Surely the public have a right to know that the environment is being adequately looked after.

Thirdly, there is no element that compels the signatories of such an agreement to keep to their end of the bargain. As has been stated, the agreements are essentially unenforceable and voluntary. However fine their objectives and operating guidelines may be in principle, the public has no guarantee that they will be adhered to.

Fourthly, currently the AMAs only cover a small percentage of the industry. This is a demonstrably unacceptable situation as those fish farmers who are not in AMAs fall outside the pseudo-regulatory net.

Finally, the costs of any ongoing monitoring of the AMA process currently fall squarely on the shoulders of wild fish interests through the West Coast Fishery Trusts. Thus is surely unreasonable. It should be up to a potential polluter to demonstrate that his/her activities are not impacting heavily on the environment and up to Government to ensure that the environment is protected in the public interest.

SERAD have now suggested on a number of occasions that the AMA process may be held up as a suitable substitute for a formal regulatory frame work. Indeed, in the recent decision letter on Ardessie the over reliance on the TWG and AMAs is only
too apparent. This thinking is demonstrably flawed for the reasons already outlined above.

2) Another cogent argument for a formal regulatory framework is that for the members of the industry who are already involved in employing best practice, there may be little to fear from regulation, whereas for those that are currently impacting more heavily on the environment the penalties would be more severe. Such a framework might ultimately be to the benefit of the industry as a whole, in its quest for sustainability.

3) Finally, if no regulatory regime is brought forward the whole area of the environmental impact of marine aquaculture will fall within the planning system. This would in all probability be a disastrous way to proceed. The planning process is an extremely confrontational one and given the strongly held views on both sides of this debate, would provide a long running series of objections, inquiries, call-ins etc. Additionally, the planning system takes a view based on a snap-shot in time, though conditions could be attached to consents, there is no lee-way for flexibility as the situation changes over time, neither would there be any provision for on-going in-service monitoring. This essentially places the regulation of a changing industry into a straight jacket. If aquaculture were placed in the planning system, it would inevitably lead to lumpy or uneven decision making, with decisions being based on insufficient information or in decisions being taken for the wrong reasons (i.e. politically). The planning system is well placed to deal with location issues; however, complex issues of an environmental nature are another matter. It would seem logical that the planning system should take on location issues, whilst the environmental side should be placed within a specific separate regulatory regime.

Having demonstrated firstly, that there is a generally accepted problem, and secondly that neither self-regulation through the TWG and AMAs, nor regulation through the planning system present solutions to that problem, the inescapable conclusion remains that a specific regulatory framework is essential.

**Regulation:**

There is no sense in slinging the baby out with the bath water. There is much within the thinking behind AMAs and the TWG process that would serve as an excellent basis for a regulatory framework. What is needed is firm regulatory underpinning to ameliorate the obvious weaknesses that are currently inherent in the system, rather than formulating a completely new set of concepts.

The proposal is that this could be achieved by placing the various commitments to which a proportion of the industry have already signed up on a voluntary basis, within a mandatory code of industry-wide binding rules. These could for example cover everything from synchronicity of fallowing
and synchronicity of production (i.e. single year class management), to strategic/synchronised lice treatment etc. Additionally, such a code can and should include non-lice-related elements such as ISA provisions and escapes. On one level they could simply be seen as giving mandatory, industry-wide imposition and enforcement of existing voluntary Scottish Quality Salmon (SQS) codes of practice. What this boils down to is that the industry should be required to utilise Best Available Techniques/technology (BAT) to ensure that it has a minimal impact on the environment. This is analogous to the regulatory regime covering the pig and chicken farming industry were the Integrated Pollution Prevention and Control (IPPC) regulations apply. The IPPC regulations define pollution and environmental impacts very broadly and are designed to cover complex industries that cause various environmental impacts in terms of diffuse pollution etc. Regulations of this kind are founded on a BAT approach and are far better suited to regulating impacts of this kind than the Control Of Pollution Act (1974) which was designed to cover point source pollution such as emissions from a pipe.

A BAT regime would be flexible and would provide an integrated approach that would move on as technology advances. It would seem that SEPA are the most appropriate body to act as the regulator, however, it would be critical that they be properly equipped with the appropriate expertise and resources.

A regulatory regime of this kind could be framed in such a way as to cover each of the points raised above, thus plugging the existing holes in the regulatory net. This could be achieved by a reasonably simple inclusion in the forthcoming Water and Environment Bill, which could place the Industry under a set of binding rules, the detail of which could be set out in a separate order. This would hopefully prevent over complexity on these issues from blighting the passage of other legislation within the Bill. (See paras. 5.11 & 5.17 of ‘Rivers, Lochs, Coasts the future of Scotland’s waters’).

There would surely be great benefits for the industry in bringing it closer to a situation of long-term sustainability through regulation of this kind rather than let the planners have a free for all on an uninformed and politically driven basis.”

Patrick Fothringham - Director, Salmon & Trout Association (Scotland)
Jane Wright - President, Scottish Anglers National Association.

August 2001
14 August 2001

Dear Tracey,

Environmental impacts of sea cage fish farming

Scottish Environment LINK Marine Task Force (MTF) members welcome the opportunity to provide views to the Transport & Environment Committee Reporters on the Executive's current fish farming work programme.

Our comments cover the initiatives listed in two SEERAD papers *Work Plan for Aquaculture Policy Development* and *Aquaculture Related Research Supported by SERAD*. As requested in your letter of 10 July, we provide comments on identifiable gaps in the work programme and our views on whether the overall approach by the Executive is appropriate.

I hope that you find these comments of use. As requested, we have kept our remarks brief at this stage. However, members of the Marine Task Force would be pleased to meet with the Reporters to discuss our views in more detail, should they wish.

Yours sincerely,

Alistair Davison
On behalf of the Scottish Environment LINK Marine Task Force¹

¹ About Scottish Environment LINK
Scottish Environment LINK is the liaison body for Scotland's voluntary sector environmental organisations. LINK was established in 1987 to provide a forum and network for the voluntary environmental sector and to assist in cooperation and communication with government bodies and other bodies with a role in Scotland’s natural and cultural heritage. LINK has 36 member bodies at present in turn supported by half a million people. LINK is a charity funded by subscriptions from its member bodies and grants from WWF Scotland, the Scottish Executive, Scottish Natural Heritage and charitable donations.
The LINK Marine Task Force feel that the Executive's approach to fish farming legislation/policy development has been flawed in a number of significant ways:

1. Lack of longer-term strategic view
The salmon farming industry is noted to be worth hundreds of millions of pounds to the Scottish economy. It is perhaps somewhat surprising that such a significant industry has, until recently, been allowed to develop in the absence of strategic guidance from Government for so long. The environmental, social and economic consequences of the un-strategic approach adopted in the past should certainly be examined at any future inquiry.

The MTF believe that a comprehensive Scottish Aquaculture Strategy should be developed to provide strategic direction for the fish farming industry. Hence, we support this new initiative by the Executive. The strategy must be developed with the over-arching purpose of ensuring future aquaculture development is sustainable in economic, social and environmental terms.

Strategic Environmental Assessment (SEA) of the Government's policies and programmes will be essential if such a rounded strategy is to be developed. The lack of an SEA is a notable gap in the current work programme. Filling this gap would help the Executive develop the Aquaculture Strategy and inform the review of regulations.

Such an SEA should also consider the carrying capacity of Scotland's inshore environment for aquaculture at a local and national level. This would complement and reflect the DEFRA and DTI Strategic Environmental Assessment of the UK’s offshore environment with regard to oil and gas exploration and production.

Consideration of wider sustainability issues is also lacking from Government thinking. For example, the future role of non-salmon fin fish farming in Scotland (eg cod, haddock) needs to be considered. This must include consideration of global issues such as competition for 'feed fish' (eg sandeels, anchovies) between wild fisheries and industrial fisheries supplying feed to fish farms. The Executive should lead thinking about the most sustainable routes of getting fish to our plates in Scotland. An inquiry could also, therefore, consider the interaction between the industrial fish meal fisheries and the recovery of commercial fish stocks who rely on these fish as a primary prey items.

2. Slow implementation
Lord Sewell announced the Government's intention to transfer planning powers to local authorities in 1997. However, as yet there is no timetable for the legislation to introduce these measures. The Executive's Locational Guidelines guiding new fish farming development away from sensitive sites were first consulted over in 1991, but were only introduced in 1999. An inquiry could rightly examine the reasons behind and effects of the slow progression from identification of the need for such fish farming policy change to the implementation of policy change.

3. Lack of transparency
The development and implementation of fish farming policy needs to be opened up to public scrutiny. For example, the Tripartite Working Group, and its main product - Area Management Agreements - do not invite broad input. The Highland and Islands Convention Aquaculture Forum is to be welcomed as progress in this respect. Its wider membership and the leading role of the local authorities provides a more open basis for policy development. There is a strong case for giving this forum an advisory role to Government, in a similar manner to the Scottish Inshore fisheries Advisory Group.

The lack of transparency is one of the major factors that, we believe, has led to the calls for an independent inquiry. The need to shed light on fish farming policy still stands as a strong justification for holding a public inquiry.

Throughout its development fears and concerns over many aspects of the Scottish aquaculture industry have been raised from many quarters. These range from food safety issues, animal welfare, employment and investment patterns, as well as environmental and sustainability issues. There are many stakeholders
and concerned groups yet there has never been an open and transparent debate to help address the issues and shape the future of the industry. Public confidence in the salmon farming industry and their product is generally low. It is difficult to see how a Scottish Executive developed strategy can hope to be inclusive or wide-ranging unless the issues surrounding aquaculture in Scotland are discussed openly by the varied stakeholders and concerned groups.

4. Reliance on voluntary measures
Codes of practice to deal with escapes and ISA are welcomed. However, very little has been done to back up these voluntary codes with minimum statutory requirements. For example, we welcome the measures in train to introduce statutory notification of escapes. However, other equally important measures to tackle escapes from fish farms will remain unlegislated (eg revocation of licences for salmon farms in unsuitable locations, presumption against locating new fish farm developments near salmon and sea trout rivers).

5. Lack of precaution with regard to environmental impact
The introduction of EIA for fish farms is welcomed by the MTF. However, the majority of existing fish farms were authorised before the introduction of the provisions of Environmental Impact Assessment (Fish Farming in MarineWaters) Regulations 1999. It is appropriate that the industry is retrospectively brought under these controls. Furthermore, the Executive should commission an independent review of the standard of EIA for fish farms. We are disappointed with the low number and standard of EIAs being produced. Specifically, the MTF are concerned that EIAs are not fully assessing the likely environmental effects of the development such as the impacts of eutrophication, the discharge of therapeutant chemicals and the risks of bioaccumulation of chemical residues in mammals and birds feeding adjacent to proposed fish farms.

The Executive's recent consultation on the review of regulations governing fish farming acknowledges the need to introduce an understanding of carrying capacity into forward planning for the industry. However, this is also an admission that the industry has been allowed to develop extensively without a clear understanding of the ability of the environment to accommodate developments. An inquiry could, again, valuably look at the impacts of adopting this non-precautionary approach to fish farming development control.

If full precaution is to be introduced into the forward planning for the industry, there are several additional areas where SEERAD need to direct research efforts. An understanding of the following areas is imperative to ensure future development can be guided to sustainability:

1) Carrying capacity of the marine environment to support sea cage fish farming.
2) Impacts of farmed salmon diseases on wild fish
3) Benthic impacts of sea cage fish farming
4) Impacts of farmed escapes on wild salmon and sea trout
5) Impacts of sea lice on wild salmon and sea trout
6) Impacts of farmed salmon waste effluents on shellfish poisoning events and water quality
7) Impacts of sea lice chemicals on the sediment, phytoplankton and algal blooms.
8) Impacts of sea cage fish farming on marine biodiversity.
9) Impacts of the development of the Scottish aquaculture industry on coastal communities and other marine stakeholders.
Executive Summary

1. Commercial salmon farming in Scotland employs around 6,500 people in Scotland, 70% of whom live in remote rural communities. It generates some £150M of exports and the ex-farm value of farmed salmon is nearly £300M.

2. SEPA is the environmental regulator for the salmon farming industry. The main areas of environmental concern resulting from salmon farming are:
   i. organic loading on the sea bed, beneath and close to the cages;
   ii. the combined effects of numbers of fish farms in partially enclosed bays on nutrient levels to such an extent that natural biological processes are significantly distorted.
   iii. the issues surrounding the release of sea lice and the use of chemicals to control them;
   iv. the use of anti-foulants such as copper and zinc on structures and nets; and
   v. the interaction between escaped farmed salmon and wild stocks leading to genetic contamination.

3. Regulation of the salmon farming industry is carried out under the Control of Pollution Act 1974 (the 74 Act). SEPA sets conditions for discharges to meet safe environmental concentrations (or environmental quality standards) for any given effluent component from a fish farm. SEPA uses modelling techniques to predict environmental concentrations for some parameters before setting appropriate consent limits to ensure adequate protection of the environment.

4. The provisions of the 74 Act were drafted before the rearing of salmon in cages began and there are significant difficulties involved with applying the provisions of the existing Act to floating cage structures. The Scottish Executive, Environment and Rural Affairs Department are undertaking a review of the legislative framework applying to fish farming activities and SEPA’s response to the consultation process is presently in preparation and will be available to the public.

5. It is SEPA’s role, as the environmental regulator for the industry, to ensure that its decisions are based the best available scientific techniques using robust data and sound judgement to assist in the achievement of the sustainable development for this important industry.
1. **Introduction**

1.1 This paper provides background information to inform members of the Rural Affairs Committee and the Transport and Environment Committee of the nature, history and environmental issues relevant to sea cage fish farming. The Scottish Environment Protection Agency (SEPA) has a considerable amount of detailed information available and the subject matter of this paper can be substantially elaborated upon, if required. SEPA is aware of the substantive submission by the Scottish Executive Rural Affairs Department (SERAD) in October 2000 on this subject and has therefore limited the scope of the information provided to that relevant to SEPA’s involvement. SEPA has attempted to avoid duplication of information already available to the members of both committees.

2. **Background**

2.1 From experimental beginnings in the 1960s, commercial salmon farming in Scotland and has grown from about 5,000 tonnes production per annum (tpa) in the 1980s to about 130,000 tpa in 2000. The average size of fish farm has also grown from about 85 tpa in 1985 to 360 tpa in 1999 (Scottish Executive’s Annual Production Survey, 1999). Operations are increasingly becoming concentrated on larger sites with over half the production coming from sites of greater than 1,000 tonnes in 2000. The industry directly supports the employment of around 6,500 people in Scotland, 70% of whom live in remote rural communities. It generates some £150M of exports and the ex-farm value of farmed salmon is nearly £300M.

2.2 The process of salmon farming takes place initially in freshwater with stock being transferred to marine cages at the age of about 18 months as they become smolts. A further 18 months growth is normally required in seawater to reach market size. The marine cages are large floating structures anchored to the seabed in groups, from which containment nets are hung. The nets can be up to 15m deep. Most cages are in relatively sheltered waters but new technical advances allow positioning in more exposed locations where there are generally fewer environmental effects. The fish are fed a pelleted diet consisting largely of fish meal protein and oil. Waste from the feed and fish falls to the seabed beneath the cages where it gradually decays and disperses.

2.3 The ownership structure of the industry is constantly evolving, driven by the economics of competition in the global market. It is increasingly dominated by trans-national companies whose investment decisions are taken outwith the communities within which the activity is located. It faces a number of challenges including growing public concern over environmental impacts, a recent outbreak of infectious salmon anaemia and controversy over escaped fish stocks.

2.4 SEPA is the environmental regulator for the industry. The main areas of environmental concern are as follows:

i. organic loading on the sea bed, beneath and close to the cages;
ii. the combined effects of numbers of fish farms in partially enclosed bays on nutrient levels to such an extent that natural biological processes are significantly distorted.

iii. the issues surrounding the release of sea lice and the use of chemicals to control them;

iv. the use of anti-foulants such as copper and zinc on structures and nets; and

v. the interaction between escaped farmed salmon and wild stocks leading to genetic contamination;

In SEPA’s view the industry must continue to demonstrate clearly that it can operate and develop in a sustainable way.

2.5 Regulation of the environmental impacts of the industry has had to evolve as quickly as the industry itself, applying legislation which was designed for end of pipe discharges rather than for effluent and matter released from a large floating cage structure. The principal legislation is the Environment Act 1995 (the 95 Act) and the Control of Pollution Act 1974 (the 74 Act). SEPA has consulted widely as husbandry techniques have evolved in order to ensure that the methodology used for regulating the industry is open and transparent. Its principal guiding document is ‘Regulation and Monitoring of Marine Cage Fish Farming in Scotland: a Procedures Manual’, produced in 1998 after a public consultation exercise and subsequently updated. This is available for public access on SEPA’s web site (www.sepa.org.uk).

2.6 SEPA has taken a consistently fair and reasonable regulatory approach to the industry, taking account of its statutory remit and duties to protect the environment and balance these with the social and economic needs of the areas in which it is established. There is no doubt, however, that the regulatory regime in Scotland provides the most highly controlled operating conditions for the industry anywhere in the world. SEPA employs experienced staff and uses sophisticated predictive modelling techniques to ensure that consents are set fairly and properly. It monitors compliance, takes enforcement action where necessary and will, if appropriate, submit reports to the Procurator Fiscal.

3. Current legislative framework

3.1 The legislation used by SEPA to control its functions in respect of marine aquaculture are of both UK and European origin. A detailed description is given in Annex 1. In considering any application to discharge trade effluent from a marine fish farm, SEPA is required to exercise a number of duties and to have regard to its statutory guidance on the contribution to be made to achieve sustainable development.

3.2 The principal Act is the Control of Pollution Act 1974 (the 74 Act), along with the Environment Act 1995 (the 95 Act) which established SEPA. The 95 Act defines SEPA’s general powers and responsibilities as well as its general duties. The relevant duties are as follows:

- SEPA must have regard to guidance given to it by Scottish Ministers (95 Act, section 31)
• SEPA has a duty to “have regard to the desirability of conserving and enhancing Scotland’s natural heritage” and “have regard to the social and economic needs of any area….and, in particular, to such needs of rural areas” (95 Act, section 32)

• SEPA’s pollution control powers shall be exercised for the purpose of preventing or minimising, or remedying or mitigating the effects of pollution of the environment (95 Act, section 33)

• SEPA must compile information relating to pollution of the environment (95 Act, section 33)

• SEPA has a duty “to promote the cleanliness of the… waters of Scotland…” (95 Act, section 34)

• SEPA “shall…take into account the likely costs (to any person and to the environment)…” (95 Act, section 39)

3.3  In 1996 The Secretary of State for Scotland defined SEPA’s principal aim as: “to provide an efficient and integrated environmental protection system for Scotland which will both improve the environment and contribute to the Government’s goal of sustainable development.”

Background guidance to the sustainable development document advises that the following principles are especially relevant to SEPA:

• using the best scientific information available

• the precautionary principle

• considering the carrying capacity of habitats and ecosystems

• the “polluter pays” principle

• the wise use of natural environmental capital

• the interests of future generations

3.4  SEPA controls discharges to the marine environment through the 74 Act, taking into account the principles set out above. The consents set numerical and descriptive limits on what can be discharged into the receiving waters. Consents are issued on the basis of a site specific assessment and, in the case of fish farms, some limits are derived using the results of mathematical modelling to predict the environmental concentration and behaviour of pollutants once discharged.

3.5  SEPA must also take into account the requirements of European legislation such as the Dangerous Substances Directive (76/464/EEC), the Shellfish Growing Waters Directive (79/923/EEC), the Habitats Directive (92/43/EEC) and the Wild Birds Directive (79/409/EEC). The Dangerous Substances Directive is especially relevant in that some of the medicines and chemicals used in marine aquaculture fall within the category of List II substances which have “deleterious effects upon the aquatic environment”. The
discharge of List II substances to UK controlled waters must be authorised by applying limits on emissions calculated to ensure achievement of water quality objectives (or environmental quality standards in UK terms).

4. **Environmental Impacts**

4.1 The most significant environmental effects arising from marine cage fish farming were set out in paragraph 2.4. These are examined in greater detail below.

*Organic loading on the sea bed*

4.2 Waste comprising uneaten food and fish faeces settles to the sea bed in the vicinity of the cages. It is readily biodegradable and in areas with strong prevailing currents it is dispersed and biodegrades with relatively little accumulation or impact. In less dispersive locations, the material can cause the seabed to become blanketed and enriched with excess organic carbon compounds which use up any oxygen present in the sediments promoting to anoxic conditions. This in turn adversely affects the sediment chemistry and reduces the variety of species living on the sea bed whilst increasing their numerical abundance. Only those animals that can tolerate extreme conditions can survive and bacterial films may also form over the surface of the sea bed.

4.3 SEPA's management approach has generally aimed at widespread dispersion and dilution of wastes rather than to allow deep accumulations on small areas and SEPA imposes limits on the tonnage of fish that can be grown at any specific site (the biomass limit) to match the environment's capacity to disperse and breakdown this waste. Where deposition of organic waste has become a problem at established farms, the practice of fallowing or resting the site has been adopted in an attempt to allow the natural fauna to re-establish. Recent research work at Dunstaffnage Marine Laboratory has shown that sites need to be withdrawn from use for periods well in excess of 12 months for this technique to be effective.

*Nutrients and dissolved organic matter and their effects on plankton*

4.4 SEPA and its predecessor authorities have long been aware of the potential impact of nutrients released from the metabolism and breakdown of fish farm food as a result of fish farming activities, and the SERAD have also commented in detail on this aspect. In particular, caged fish farms release significant quantities of nitrogen in the form of nitrates and ammonia to the marine environment. Put in terms of human equivalent, if a fish farm was maintained at 1000 tonnes fish biomass, it would produce the same waste nitrogen load as a town of about 17500 people. Initially, when fish farms were very small and generally dispersed from each other this impact could be ignored as negligible. As the fish farming industry has grown in size, a debate has developed over whether fish farms are raising nutrient levels to such an extent that natural biological processes are distorted thereby upsetting the natural balance of semi-enclosed embayments. There are concerns that this may lead to depletion of oxygen in deep water, damage to animal and plant communities, unpleasant aesthetic effects and general loss of amenity. The Fisheries Research Service (FRS), Aberdeen has developed several predictive model tools that can be used to estimate the likely impact.
of a development on the local sea loch or voe. In evaluating the threat this may pose to other marine flora and fauna when determining applications for discharge consent, SEPA has regard to information provided by FRS.

4.5 It has been alleged that this nutrient load may be linked with the incidence of harmful algal blooms (HABS) which lead to consequent limitations on the harvesting of commercial shellfish crops. According to scientists at the FRS the occurrence of HABS does not match the distribution of fish farming activities. Over the wide area of the Minch and the Sea of the Hebrides fish farming is estimated by FRS to contribute in the region of 1-7% of the nitrogen input entering these inshore waters. Other estimates indicate that this contribution may be up to about 10%, particularly if the inorganic nitrogen component present in the summer months is examined, and SEPA is presently considering further more detailed expert advice on the nutrient budgets of Scottish coastal waters.

4.6 SEPA would like to see the development of a more robust method to predict fully the impact of the very large fish farm units now being proposed, particularly in quiescent lochs or voes where dilution and dispersion mechanisms are weakest and flushing times are relatively long. This would permit better consideration of individual proposals in relation to the overall cumulative effects of neighbouring fish farms and other effluent discharges to ensure the environmental “carrying capacity” was not exceeded. In the meantime, SEPA’s policies take account of the fact that the categorisation of lochs and voes within the Locational Guidelines for the Authorisation of Marine Fish Farms in Scottish Waters published by SERAD in November 1999 includes an indexing of relative levels of nutrient enhancement.

4.7 In the light of the concerns expressed it is clear that further research on the role and interactions of nutrients discharged to the marine environment around Scotland’s coast would be beneficial. Debates on environmental carrying capacity are progressing but expansion of sites beyond the environment’s ability to assimilate wastes will need to rely on the introduction of containment systems which allow treatment of wastes, including medicines and chemicals, before discharge thereby reducing reliance purely on dilution and bio-degradation. So far, the industry in Scotland appears reluctant to invest in the development of these techniques, in view of the increased capital costs involved.

**Issues regarding the release and control of sea lice**

4.8 One of the major difficulties facing the industry is the proliferation of sea-lice in marine salmon farms. Sea-lice do considerable damage to the farmed fish and there is now growing acceptance that stress induced by increased lice burdens on wild salmonid species linked to fish farm infestations may be contributing to the decline of these wild stocks where farms lie close to migration routes. SEPA has made every effort to support the initiatives of the Tripartite Working Group (referred to in paragraphs 41 to 45 in the SERAD paper) in attempting to put in place area management agreements providing a mechanism for fish farmers and fisheries interests to work closely together to reduce the spread of sea lice from fish farms.
4.9 According to legal opinion obtained by SEPA, sea lice do not fall within the definition of trade effluent as defined by section 56 of the 74 Act nor are they "discharged" from the cages and therefore cannot be controlled by restrictions imposed by discharge consents.

4.10 Although SEPA cannot impose reasonable conditions in discharge consents directly to prevent the escape of sea lice, SEPA has considered how its other functions can be exercised to fulfil the duties under section 34 of the 95 Act (see 3.2). "Planning" consultations from the Crown Estate Commissioners (CEC) relating to fish farm proposals provide SEPA with the opportunity to promote its views on the need for site-specific restrictions or precautions and other aspects associated with the future development of the industry which cannot be achieved by exercising its own statutory powers.

4.11 Medicines have been developed which are capable of controlling sea-lice and reducing their numbers to acceptable levels but there are concerns that these medicines are also capable of damaging other marine organisms if their use is unregulated and they are permitted to exceed safe environmental concentrations. However, effective sea louse control is viewed as being fundamental to the continuing success of salmon farming.

4.12 SEPA has worked within the limits of its legislative remit to permit separate fish farm companies operating in the same water body to work together in cooperation with other fishery interests, so as to facilitate near-simultaneous treatment of sea-lice within a Sea Lice Treatment Management Area as defined by the Tripartite Working Group.

4.13 Strategic control methods which treat sea lice at susceptible stages in their life-cycle have shown benefits in retarding the development of infestations and reducing the need for subsequent repetitive treatments. A selection of treatments is also considered by the industry to be necessary in order to prevent or reduce the onset of drug-resistance.

4.14 The compounds used in sea lice treatments fall within the scope of the EC Dangerous Substances Directive (as List II substances), EC member states are required to impose site-specific emission standards to meet safe environmental quality standards. SEPA’s approach is based on the use of predictive models to set limits on the quantities and rate of release of these compounds to meet the relevant environmental quality standard, based on the hydrographic characteristics of each site. In Scotland this requirement is additional to the general safety and efficacy assessment carried out by the Veterinary Medicines Directorate when a marketing authorisation for a new product is applied for. This cautious approach is in marked contrast to other salmon producing nations where a general marketing authorisation only is required, there being no environmental quality standards derived nor any site-specific authorisation or emission limits imposed.

4.15 Whilst SEPA is satisfied that these methods are robust and dependable, SEPA is contributing to a major scientific study to ensure that no long-term and subtle changes with respect to macrofauna, zooplankton, meiofauna, benthic diatoms, phytoplankton and macroalgae are occurring as a result of continuous long-term use of these compounds.
4.16 The alleged discharge to the marine environment of unauthorised chemicals is viewed with considerable concern by SEPA. SEPA is aware that cheaper alternative formulations which contain similar active ingredients but which have been produced for different situations have been used to treat sea lice infections. Differences in compound formulations can pose major implications in terms of environmental toxicity as well as product safety. These alternatives are readily available, sometimes at less than a tenth of the cost of authorised medicines, and no records are kept to document their use.

4.17 SEPA has stated its intention to investigate allegations of the use of unauthorised chemicals vigorously and instigate enforcement action where clear evidence of a breach of the legislation exists. The industry associations have responded positively and have demonstrated their resolve to take prompt action to stop this irresponsible and damaging practice.

4.18 SEPA also undertakes a programme of unannounced visits to fish farms where samples of fish from the cages, mussels growing close by or sediment are taken for analysis. Such a monitoring programme is expensive and SEPA has limited resources to devote to this approach but, to date, the programme has not provided any clear evidence of the use of unlicensed chemicals.

The use of anti-foulants on structures and nets

4.19 Natural growth of fauna and algae occurs on nets and ultimately restricts the flux of water through the cage. Early attempts to combat this using tri-butyl-tin coatings eventually were curtailed as a result of a ban on these compounds once adverse environmental effects were detected. The “swim-through” weather drying method was then adopted widely and is still used today mainly by those still operating small-volume cages. This method kills the encrusting fauna and algae naturally by exposure of an empty net to sunlight and air. The move to large-volume cages has restored the need for anti-foulant coatings as it is uneconomic to remove such cages from service to permit the swim-through method of net cleaning.

4.20 Preparations in widespread use rely on Copper and sometimes Zinc as their main active ingredients. As the leaching of anti-foulant agents is slow, analysis of the water close to the cages is not likely to detect significant concentrations. Whilst it is SEPA’s view that environmental effects due to residues of anti-foulant agents in the sediments is not likely to be significant and, in any case, would be limited to within the allowable zone of effects, there is a need for further research into the fate of released Copper and its polluting effect on planktonic or benthic flora and fauna. Key issues relate to how Copper binds to other materials in marine sediments and its toxic effects, if any, once held there.

4.21 This issue may be only important where a fish farm ceases to operate and the impacted sediments within the allowable zone of effects begin to recover. The level of biological risk arising from elevated levels of Copper in marine sediments is not fully understood and may be influenced by highly sulphidic and organic sediments found below fish cages. Until this research is carried out, SEPA is not in a position to set a firm policy on the use of anti-foulant coatings.
The interaction between escaped farmed fish and wild stock causing genetic contamination

4.22 SEPA has no direct control or influence over the release of escaped fish from cages as they do not fall within the definition of trade effluent in section 56 of the 74 Act. The concern of environmental groups and wild fish interests is that the specific genetic characteristics bred into farmed salmon will be transferred to wild fish leading to progeny that are ill-adapted to surviving in the wild. New regulations are however proposed by Scottish Ministers which would require the industry to take more steps to prevent accidental releases.

5. How consents are set

5.1 SEPA’s approach to setting conditions for all effluent discharges including the proposed use of a medicine or chemical on cage fish farms is based on risk management, beginning with an assessment of its toxicity to living organisms (known as an ecotoxicological risk assessment) to derive a safe environmental concentration, a so called environmental quality standard. There are recognised methods for establishing environmental quality standards involving eco-toxicological laboratory and field tests. Where a nationally recognised environmental quality standard has not already been published, SEPA adopts this methodology, to set appropriate standards for the compound in question. The process is then subject to independent peer review by the Water Research Centre and any recommendations are acted upon before the standard is approved by the SEPA Board.

5.2 If the concept of manageable aquaculture is accepted then a fundamental requirement is the recognition of a “mixing zone” or an allowable zone of effects within which pristine conditions will not exist. It is not realistic to expect pristine conditions to prevail in the immediate vicinity of the cages. This approach was developed at first to control the degree of organic deposition and the zone was confined to 25metres out from the cage edge. Whilst this fairly straight-forward approach has served its purpose well through the industry’s development and continues to be applied, SEPA is at present applying more sophisticated techniques to limit the impact of medicines and chemicals, and proposes to develop methodologies for organic waste deposition as well.

5.3 After establishing environmental quality standards, SEPA employs predictive modelling techniques. These take account of the water currents prevailing at any particular site and estimate the limits which must be imposed on the discharge to prevent the relevant environmental quality standards from being breached outwith the allowable zone of effects. Restrictions may be placed on the quantity which may be used within a specific time period, which is the case with in-feed medicines, or the rate of release may be limited as is the case with compounds administered as a bath treatment. Such a site-by-site authorisation complements the general marketing authorisation approach imposed by the UK’s Veterinary Medicines Directorate. In some cases the environmental quality standard is set at a concentration close to or below the analytical limit of detection of the substances involved, and thus the only realistic method of assessing appropriate consent limits is by mathematical modelling. The models take account of tidal currents at each specific site and therefore must be run separately for each site assessment.
5.4 SEPA’s present modelling approach has concentrated on dispersion and dilution of wastes from individual sites. With increased numbers of applications, which are often for farms within the same loch or bay there is a need for development of better techniques to make “wider” area assessments to gauge the fate and behaviour of pollutants within a defined water mass and ensure that no unacceptable cumulative effects arise.

5.5 The use of mathematical models has increased over the last few years as SEPA has developed more sophisticated techniques to protect the marine environment. The models are complex and require specialist assessment of the data provided by the applicant. SEPA has in the past experienced difficulty in processing applications within the time allocated by statute in the 74 Act of four months. This time may be extended by mutual agreement with the applicant.

5.6 In 2000 SEPA received an exceptionally large number of applications which were difficult to process within the required time. Following a management reorganisation designed to improve efficiency and effectiveness, flexible deployment of specialist modelling resource has allowed a much faster rate of application processing. Many of these applications resulted from the availability of new medicines for the treatment of sea lice. In order to ensure that a backlog does not accumulate again, it is SEPA’s intention to allow a number of accredited consultants to carry out the modelling work, subject to auditory supervision by SEPA. Arrangements for this are currently in hand (August 2001).

5.7 SEPA believes that the methods it has developed and now applies lead the world in this field and provides firm evidence that SEPA is carrying out its duties competently to provide a high degree of environmental protection based upon sound science.

6 Present and future initiatives

Limitations of the current regulatory regime

6.1 SEPA is required to regulate caged fish farms in order to protect the marine environment. It has been recognised for several years by both the industry and SEPA that there are significant difficulties associated with the application of the provisions of the 74 Act to this industry. The provisions of this Act were drafted before the rearing of fish in cages floating within controlled waters commenced. Although SEPA must link conditions within an authorisation to the effluent discharge, in the case of marine fish farming there is no practical method of obtaining a representative sample of the discharge or isolating it from the receiving water.

6.2 The adoption of a more flexible regulatory regime which applied to the process of rearing fish, rather than just the effluent discharge, would provide the opportunity to focus on activities posing the highest risk of environmental damage.

6.3 The Scottish Executive, Environment and Rural Affairs Department are presently undertaking a review of the legislative framework applying to fish farming activities and a consultation exercise is in progress. SEPA’s
response to this is in preparation and will be publicly available at the end or August 2001.

Working in partnership

6.4 SEPA has actively supported many initiatives and continues to work in cooperation of other authorities and agencies.

- SEPA continues to support the work of the Tri-partite Working Group.
- SEPA contributed to the inauguration and continues to support the Highlands and Islands Aquaculture Forum.
- SEPA took an active role in the work of the Joint ISA Industry Government Working Group and maintains a working link with the Aquaculture Health Joint Working Group supporting its work when required.
- SEPA maintains regular liaison with the industry associations to promote the adoption of best environmental practice and, through a process of continuous improvement to progress towards more sustainable and environmentally conscious husbandry. The move to accredited environmental management systems by Scottish Quality Salmon and the development of the Code of Best Environmental Practice produced by the Shetland Salmon Growers Association are seen as important steps forward in achieving demonstrable improved environmental performance.
- SEPA maintains a link with the Integrated Sea Lice Management Group who are working on initiatives to promote best practice in the use of a range of techniques to control sea lice infections and delay the onset of drug resistance to the licensed medicines which are available.
- SEPA is actively involved in progressing the concept of environmental carrying capacity and is keen to progress this in partnership with other experts in the field.

7. In conclusion

7.1 The challenge facing the Scottish farmed salmon industry and the various regulatory bodies interfacing with it cannot be underestimated. It is evident that in Scotland the concept of farming the sea has not been as widely accepted as that of farming the land. If the industry is to continue to exist and evolve, it must be accepted by all parties that there are environmental consequences which have to be integrated with the economic and social benefits that aquaculture brings to remote and fragile communities.

7.2 There are significant concerns over the environmental effects and real issues about the environment’s capacity to carry existing impacts which must be addressed and yet the industry plans to expand to meet a growing demand for farmed salmon and to cut unit costs in order to continue to compete in a global market.
7.3 It is SEPA’s role, as the environmental regulator, to ensure that decisions on development proposals are made only after applying the best available scientific techniques using robust data and sound judgement to assist in the achievement of the sustainable development for this important industry.

7.4 SEPA welcomes the opportunity to take part in constructive dialogue on initiatives to resolve these difficult issues and has much to contribute on how these should be taken forward.
ANNEX 1

The Relevant Legislative Framework

UK Legislation

1 SEPA was established to carry out the functions transferred or assigned to it by the Environment Act 1995 (95 Act). Section 21(1)(a) of the 95 Act transferred to SEPA the functions of the River Purification Authorities (RPA) including those with respect to water pollution, under and by virtue of:

- The Rivers (Prevention of Pollution) (Scotland) Act 1951, Part III (the 51 Act)
- The Rivers (Prevention of Pollution) (Scotland) Act 1965 (the 65 Act)
- The Control of Pollution Act 1974, Part II (the 74 Act)

2 The 95 Act also amended the 74 Act and, in particular, changed the general water pollution offence sections. However, a substantial amount of the 74 Act remains unchanged and it is therefore necessary to turn to the 74 Act to ascertain the scope of SEPA's functions as regards water pollution from fish farming activities.

3 The 95 Act also defines SEPA's general powers and responsibilities in the course of carrying out its functions. It is important to stress that these general duties have precedence over all internal SEPA policies and procedures. SEPA works hard to demonstrate that it operates in a manner which fulfils its 95 Act duties in the pursuance of the statutory functions transferred to SEPA by section 21 identified above. The relevant duties are as follows:

- In performing its functions, SEPA must have regard to guidance given to it by Scottish Ministers, with respect to aims and objectives which they consider it appropriate for SEPA to pursue in the performance of its functions, (95 Act, section 31)
- SEPA has a duty in formulating or considering any proposals relating to its functions to have regard to the desirability of conserving and enhancing Scotland’s natural heritage and to take into account any effect which the proposals would have on the natural heritage and to have regard to the social and economic needs of any area or description of area of Scotland and, in particular, to such needs of rural areas (95 Act, section 32).
- SEPA's pollution control powers shall be exercised for the purpose of preventing or minimising, or remedying or mitigating the effects of, pollution of the environment. SEPA must compile information relating to pollution of the environment for the purpose of facilitating the carrying out of its pollution control functions, and of enabling it to form an opinion of the general state of pollution of the environment. (95 Act, section 33).
- SEPA has a duty to promote, the cleanliness of the inland waters, groundwaters and tidal waters of Scotland and to such an extent as it considers desirable, generally to promote (a) the conservation and enhancement of the natural beauty and amenity of inland and coastal waters and of land associated with such waters, and (b) the conservation of flora and fauna which are dependent on an aquatic environment (95 Act, section 34).
- In considering whether or not to exercise any power under any enactment or in deciding the manner in which to exercise any such power, SEPA
shall, unless and to the extent it is unreasonable for SEPA to do so in view of the nature or purpose of the power or in the circumstances of the particular case, take into account the likely costs (to any person and to the environment) and benefits of the exercise or non-exercise of its power or its exercise in the manner in question (95 Act, section 39).

4 In November 1996 statutory guidance under the 95 Act, section 31 was given to SEPA by the Secretary of State for Scotland consisting of guidance on the aims and objectives of SEPA and guidance on the contribution to be made to achieve sustainable development. The statutory guidance defines SEPA’s principal aim (subject always to its statutory functions) and explains how the Secretary of State for Scotland, now Scottish Ministers, expect SEPA to make, by the performance of its functions towards attaining the objective of achieving sustainable development.

5 The Secretary of State for Scotland defined SEPA’s principal aim: “to provide an efficient and integrated environmental protection system for Scotland which will both improve the environment and contribute to the Government’s goal of sustainable development.”

6 In addition the Scottish Office Agriculture, Environment and Fisheries Department produced a document which is not part of the statutory guidance entitled: “SEPA and Sustainable Development. Background Information to the Guidance from the Secretary of State under section 31 of the Environment Act 1995”:

This document gives the definition of sustainable development as: “development that meets the needs of the present without compromising the ability of future generations to meet their own needs,” raising “the possibility of a new era of economic growth based on policies that sustain and expand the natural environmental resource base”.

It goes on to refer to the specific principles set out in the Government’s command document “Sustainable Development: the UK Strategy” and advises that the following principles set out therein are especially relevant to SEPA:

- using the best scientific information available;
- the precautionary principle;
- considering the carrying capacity of habitats and ecosystems;
- the “polluter pays” principle;
- the wise use of natural environmental capital, and
- the interests of future generations.

7 The precautionary principle is defined as:

“Where there are significant risks of damage to the environment the Government will be prepared to take precautionary action to limit the use of potentially dangerous materials or the spread of potentially dangerous pollutants even where scientific knowledge is not conclusive, if the balance of likely costs and benefits justifies it.”

8 SEPA has regard to the Secretary of State for Scotland’s guidance on sustainable development in its regulation of the fish farming industry, which
involves SEPA in balancing the requirements for rural economic development and the protection of a high quality environment.

9 SEPA is therefore identified as the regulatory authority for controlling pollution to controlled waters from fish farms, and the primary regulatory mechanism is provided by the 74 Act. This Act has been amended several times but the principal offence as it applies to fish farming remains the discharge of trade effluent. A defence to this offence is that the discharge is made in accordance with a consent issued by SEPA. The consent is permissive and sets limits on what can be discharged, so attempting to control the various effluent components to ensure safe environmental quality standards, are not exceeded in the receiving water.

10 In carrying out site-specific assessments of applications for discharge consents, SEPA adheres closely to its statutory remit in each case promoting the cleanliness of Scotland’s tidal waters, setting consent limits to prevent or minimise, remedy or mitigate the effects of pollution. In setting consent conditions SEPA takes account of the need to protect and conserve Scotland’s natural heritage, its aquatic flora and fauna, balancing this with the social and economic needs of the area and community within which the fish farming development is to be based. This is fundamental to SEPA’s approach and SEPA’s staff weigh up all relevant information in each case to get this balance right before making recommendations to senior management. The full consenting process from the receipt of applications, through SEPA’s assessment and decision, to the issue of a consent or a refusal notice is covered in sections 1 to 6 of SEPA’s Procedures Manual, SEPA has a duty to review from time to time consent conditions and this is covered in section 9 of that manual.

International Legislation

11 The United Kingdom is subject to international environmental legislation, the most significant of which are the directives agreed by the Council of the European Communities. These directives are generally transposed into UK law by means of Regulations. There are at present four directives which are particularly important in the context of marine fish farming, namely the Dangerous Substances Directive, the Shellfish Growing Waters Directive, the Habitats Directive and the Wild Birds Directive. The Water Framework Directive which is now in its initial implementation stages, will have a significant effect on the pollution control regime operating in the UK and will have implications for the regulation of fish farming in both fresh and marine waters.

12 The Dangerous Substances Directive (76/464/EEC) defines principles for the control of lists of substances ranging from those which are toxic, persistent and which bioaccumulate (List I substances), to those which have "deleterious effects upon the aquatic environment" (List II substances). Some medicines and chemicals used within marine fish farming fall within the List II definition. The directive requires Member States to introduce programmes to reduce pollution by List II substances by ensuring their authorisation on the basis of emission standards calculated from water quality objectives, in UK terms, environmental quality standards. These programmes may involve product substitution, requiring the use of a less hazardous chemical, and shall take into account the "latest economically
feasible technical developments”. The Directive is implemented through the system of discharge consents operated under the 74 Act and through The Surface Waters (Dangerous Substances)(Classification)(Scotland) Regulations 1990.

13 **The Shellfish Growing Waters Directive** (79/923/EEC) concerns the quality of shellfish waters in areas designated by Member states as needing protection or improvement in order to contribute to the high quality of shellfish products directly edible by man. Member States must establish programmes for reducing pollution to ensure that designated waters conform with the defined standards. Concerns over biocides are already covered by the Dangerous Substances Directive, to which the Shellfish Growing Waters Directive makes reference. Additional relevant limits to fish farming are those that relate to suspended solids and to dissolved oxygen, which are addressed indirectly by discharge consent conditions imposed by SEPA on fish farm operators.

14 **The Habitats Directive** (92/43/EEC) and the **Wild Birds Directive** (79/409/EEC) concern the protection and conservation of natural habitats. In terms of the Conservation (Natural Habitats etc) Regulations 1994, which transpose the Habitats Directive into UK law, SEPA is a “competent authority” with regard to all areas designated in Scotland under these directives, that is Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), collectively known as European sites. SEPA is also a “relevant authority” for European marine sites in Scotland, that is any SAC or SPA which extends below the mean low water mark of spring tides. SEPA as a competent authority has regard to the terms of the directive, in fulfilling its statutory functions, in order to protect the conservation interests for which any SAC or SPA was designated, and this is achieved by carrying out appropriate assessments when considering applications for consent under the 74 Act. For European marine sites, SEPA participates, as a relevant authority, with other relevant authorities in drawing up a single management scheme for each site where any relevant authority considers that one is necessary.
AQUACULTURE RELATED RESEARCH SUPPORTED BY SERAD

The Fisheries Group of SERAD currently invests in excess of £1m annually in support of aquaculture related research, the table summarises the programme. The programme underpins SERADs’ responsibilities for monitoring and enforcing fish and shellfish disease regulations.

The programme aims to inform these functions through:

- Improved understanding of the mechanisms by which disease is spread (FC1182, FC1186);
- The development of improved diagnostic techniques (FC1184);
- Assessing the disease susceptibility of new species (e.g. cod & halibut) (FC1181);
- Better control of disease vectors (FC1183) and new methods for better delivering protection to fish against disease (FC1180);
- Using scientific evidence to inform and update existing and developing legislation (FC1185).

Research is also undertaken to assess the basis for concerns that have been expressed regarding the potential wider impact of aquaculture on wild fisheries and possible linkages with nutrient releases from fish farms and the occurrence of toxic algal blooms. These include:

- Impact of sea lice from fish farms on wild fish (AE1158);
- Mapping the occurrence and distribution of the toxic species of algae responsible for shellfish closures (AE1159 &AE1160);
- Hydrographic modelling of relevance to the dispersion of nutrients and medicines from marine fish farms (AE1252).

<table>
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<td>Evaluation of disinfectants against notifiable diseases, principally fish viruses</td>
<td>Apr-00</td>
<td>Mar-02</td>
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<td>FC1182</td>
<td>Pathogenic IPN</td>
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<td>FC1181</td>
<td>Disease susceptibility and immunology of cultured marine fish</td>
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<td>Diagnosis of emerging fish diseases</td>
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<td>AE1158</td>
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<td>Apr-98</td>
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<td>AE1159</td>
<td>Investigations into the identification and toxicity of Pseudo-nitzschia spp., the causative organisms associated with ASP in shellfish.</td>
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<td>AE1252</td>
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ENVIRONMENTAL IMPACTS OF SEA CAGE FISH FARMING

Thank you for giving SNH the opportunity to comment on the current Executive work programme in this area.

SNH recognises that aquaculture is an industry of considerable importance to Scotland, in many cases bringing much needed employment opportunities to rural areas. SNH submitted a response to SEERAD last September on the Extension Of Planning Controls To Marine Fish And Shellfish Farming, and in May this year to a pre-consultation on the Review Of The Regulations Governing Fish Farming. We shall also offer our views on the current formal proposals for a Regulatory Review.

Notwithstanding fish farming’s role in rural development, we have a number of concerns about it’s impacts upon the natural heritage. Our main concerns are:

- the limited carrying capacity of coastal waters for fish farming especially in sea lochs, arising from pollution, mainly caused by nutrients but also by medicines and chemicals;
- the genetic interactions of escaped farmed fish with wild salmonid populations;
- the impact of increased sea lice density in coastal waters on wild salmonid populations;
- issues associated with the interactions of predators and fish farms;
- the impacts of aquaculture on the character and special qualities of Scotland’s coastal landscapes;
- the loss of wildland to new aquaculture developments;

With the above in mind SNH would like to see an aquaculture industry which is guided by a clear framework of policy and planning, which can be accommodated within the carrying capacity of receiving waters, and which is managed so as to
minimise impacts upon important features of the natural heritage. In our view there is some distance to travel before such a framework could be said to be in place.

A major difficulty with aquaculture is scientific uncertainty around the cause-and-effect linkages between nutrient and medicine release, parasite numbers, genetic exchange and natural heritage impacts including the decline of wild salmon. It will take time for these uncertainties to be resolved. SNH considers precautionary approaches to be necessary when there is risk of significant/widespread/irreversible damage to nationally or internationally important environmental resources, and where a causal link between activity and impact is likely. Partly in order to help build a broader consensus around judgements of 'significance' and 'reasonableness', the SNH Board recommended that an inquiry be undertaken to review all relevant scientific information on direct and indirect impacts of fish farming on the natural heritage.

In our view the Executive's work programme is broadly in the right direction. We would hope that questions around assimilative carrying capacity can be addressed through current experimental work, along with monitoring and modelling. We would hope that site-based management can be achieved through a combination of Framework Plans, Area Management Agreements, EIA, regulation and codes of practice. SNH will continue to work with the Executive to achieve these ends. Our concern is less about gaps in the Executive's work programme than the need for a clearly articulated strategic framework for Scottish aquaculture. In our view a strategic approach is likely to require three distinct and inter-related elements.

- **A national perspective.** A national strategy should be in part spatial – to the extent that it should zone areas as preferred for fish farming, along with areas which are more sensitive (along the lines of the existing locational guidelines). It should also take: a natural overview of planning issues such as might be produced in an NPPG, a national overview of water quality issues for fish health and fish lice, and a national approach to the licensing of new therapeutants. It is also likely to affirm the need for foodstuffs to be sourced from sustainably-harvested fisheries.

- **Local strategies.** Within preferred areas in the national strategy there is likely to be a need for local strategies drawn up by Local Authorities with all other relevant interests. These should guide the number and distribution of cages and also to provide a framework for co-ordinating the fish farm management process, including whole-loch approaches to medical treatment and falling. EIA and approval of individual applications needs to be undertaken within this local strategic context.

- **Best practice in individual farm management.** Best practice at the level of the individual farm will be necessary in relation to issues such as predator control, fish farm design (e.g. construction materials), management (e.g. the use of well-boats), the application of chemical treatments, dealing with escapes, feed practices, etc.
We therefore note and welcome proposals for both development of a longer-term strategic view and a regulatory review to ensure effective links between these different components. We hope these will provide the basis for effective future action.

I hope these comments are useful.

Roger Crofts
SCOTTISH QUALITY SALMON RESPONSE TO TRANSPORT AND ENVIRONMENT COMMITTEE ON SCOTTISH EXECUTIVE WORK PROGRAMME

Introduction

Scottish Quality Salmon has reviewed the report of the Scottish Executive’s work programme in relation to sea cage fish farming and is pleased to have the opportunity to offer comment on this.

Scottish Quality Salmon is a quality assurance led membership organisation established to offer whole chain assurance from fish feed company to salmon farmer to smoker and processor. Membership is strictly dependent on adherence to independently inspected and internationally accredited quality standards encompassing fish health and welfare, production processes, product quality and environmental consideration. Members account for around 65% of the tonnage of the salmon produced in Scotland. This salmon is marketed in the UK under the Tartan Quality Mark and in France under the prestigious Label Rouge accolade, granted by the French authorities to only the very highest quality foods.

While Scottish Quality Salmon welcomes the Executive’s substantial programme of research and policy initiatives, we must record our disappointment at the lack of formal recognition and, indeed, endorsement of the work that Scottish Quality Salmon has initiated and continues to develop on the independently accredited and internationally recognised standards (ISO 14001 and EN 45011) for the salmon farming industry in Scotland. These standards promote the quality and sustainability of the product and production process and environmental considerations and differentiate the Scottish product from others in the world. No other country is operating such a portfolio of quality initiatives and independently accredited standards and this should surely be formally recognised in the development of a strategic vision for Scottish aquaculture.

Scottish Executive Research Programme

The reported programme of research is valuable but Scottish Quality Salmon highlights the following in the Executive’s approach.

- Need for continued collaboration and consultation with Industry on initiating and prioritising research projects
For example, DEPOMOD modelling technique used by SEPA to determine biomass consents, PLGA oral vaccine delivery systems, the development of the ISA Code of Practice and the Containment Code of Practice are all Scottish Quality Salmon led initiatives which demonstrate positive progress when industry and government have worked together.

- Government and industry should drive R&D together as part of a long term strategic vision.

As a consequence of the sometimes fragmented approach to R&D, individual companies, universities and other institutions are able to secure finance and support for a variety of projects which may not be the most effective way of achieving our strategic vision. This undermines Scotland’s competitive advantage when compared to countries like Norway where there is a positive climate towards aquaculture supporting a large and varied R&D programme.

- More effective forum for reporting progress and additional consultation

The now defunct LINK Aquaculture Initiative worked well as a vehicle for Industry and Government to work together. The Committee for Aquaculture Research and development (CARD) requires additional meetings in order to improve its effectiveness by, e.g, giving progress reports on projects so that both parties can benefit from a more interactive approach.

- Omission of the Loch Roag Study

There is no mention in the consultation of this important study undertaken by SEPA, the results of which will contribute to the carrying capacity debate to be undertaken (see Strategic Priorities).

**Regulatory Framework**

Scottish Quality Salmon welcomes the ongoing review of regulations by the Scottish Executive but remains highly concerned that good practice is not helped, and frequently hindered, by the bureaucratic burden of regulation by 10 statutory bodies, 63 pieces of legislation, 43 European Directives, 3 European Regulations and 12 Commission Decisions. The effects of the current regulatory framework are:

- SEERAD is unable to deliver coherent governance.

The bureaucratic burden is exacerbated by the length of time it takes to achieve consents or permission, given the resource constraints of the public sector offices and the need for additional consultations with all interested parties.
User friendly and better co-ordinated regulation would expedite matters and be more transparent to interested parties. Examples in other parts of the world, Norway for example, demonstrate that closer co-ordination between regulatory bodies can improve the efficiency and development of the industry without compromising product safety or environmental concerns.

- This complex, under resourced and inflexible system results in
  - Delays in adopting new technology, affecting fish health and welfare, productivity and environmental impact.
  - Loss of competitive advantage
  - Damage to commercial viability
  - Financial cost and time wasting

Due to legal obligations placed on it, the Scottish industry has been forced to work within an inflexible system and, as a result, has been slow to capitalise on changing market demands, technology and public awareness of environmental concerns etc.

- Lack of government incentive for Industry to strive for standards higher than the legal minimum

The lack of formal recognition of the work that Scottish Quality Salmon has initiated and continues to develop on independently accredited and internationally recognised standards (ISO 14001 and EN 45011) for the salmon farming industry is damaging Scotland’s long term requirement for premium standards of production and environmental consideration. Companies currently operating in increasingly competitive, global markets and gaining no public sector advantage in incurring considerable costs for independent inspections and accreditation will increasingly choose the lowest cost, lowest quality route. Consequently, the Scottish Executive must look to support independently accredited and internationally recognised standards leading to a high quality, sustainable route, and endorse those companies which choose to adopt this route.

**Strategic View of the Industry**

Scottish Quality Salmon welcomes the development of a long-term strategic vision for the Industry and emphasises that this must be a wholly balanced approach recognising the socio-economic benefits of the industry across Scotland as well as environmental considerations. In view of the increasingly global nature of the industry, Scottish Quality Salmon highlights:
The critical importance of Scottish Executive support for farmed salmon in Scotland, recognition and participation in the forums which meet to support the industry in the UK and internationally, for example North Atlantic Salmon Conservation Organisation (NASCO).

Coherent regulation

Ongoing, relevant R&D programme to sustain Scotland’s competitive position

Strategic priorities for the Scottish Executive should be to:

- Commission a full carrying capacity study, of which the Loch Roag study was a preliminary step, to determine the potential for the industry in Scotland.
- Complete the review of existing regulatory structure and inform widely of the Executive response
- Clarify the timeframe and membership of the Aquaculture Strategy Group, define the consultative processes for the Group’s work to allow for better understanding of the link between the Aquaculture Strategy Group and the forthcoming Water Environment Bill.
- Introduce innovative ways of extending the consultation process for both the Executive and interested parties to inform the debate, for example Scottish Quality Salmon intends to hold a conference in December to contribute to the development of an Aquaculture Strategy.
- Develop strategy to maximise Scotland’s potential for a quality driven, sustainable salmon farming industry recognising both the niche marketing opportunities such as organic production alongside high quality brands such as Tartan Quality Mark and Label Rouge salmon.

In his letter to the Transport and Environment Committee and the Rural Development Committee, the Minister for Environment and Rural Development, Ross Finnie, outlined the initiatives relating to salmon farming which are already underway. Scottish Quality Salmon has led or is actively participating in seven of these, including the full development of the Code of Practice on Containment and leading the way in the formation of Area Management Agreements under the Tripartite Working Group. We remain open to any opportunity to discuss these issues with the Transport and Environment Committee and to contribute to the development of a long term aquaculture strategy for Scotland.

Attachments:

1. Tripartite Area Management Map
2. Employment map showing importance of salmon farming industry across Scotland
3. Scottish Salmon export map showing global destinations