

**Rivers and Fisheries Trusts of Scotland
West Coast Aquaculture Mitigation Project**

Steering Group Paper:

Purpose:

This paper presents a work plan and schedule for the Aquaculture Mitigation Project to the project Steering Group for their final approval. A draft of this plan has been previously distributed for comment and review.

In addition to the plan a summary progress reporting matrix (see associate spreadsheet) is presented which will be distributed to the Steering Group on a quarterly basis and to support the group in assessing progress against the work plan.

1. Introduction:

The Aquaculture Mitigation project has a number of required deliverables in 2011/12. These have been considered by RAFTS and the project staff and a work plan prepared to schedule the outputs required. A draft plan was distributed for comment and review by the group.

No major revisions or changes were requested but the comments received requested that:

- Trusts should be involved in the preparation of a future funding bid: and
- There was no need to issue interim reports to trusts of sweep netting results.

Both of these comments have been included in the revised work plan which is issued as **Annex 1**.

In addition it was confirmed that the extent of actual involvement of Marine Scotland Science (MSS) to data analysis and reporting of the sweep netting work was still required. This is agreed but MSS is retained against these activities for the time being with the level of involvement to be confirmed. In general terms it is assumed that MSS input will be advisory and technical and, in the main, associated with data and statistical analysis while project staff will ensure delivery of the overall report and compilation of other content.

It was also suggested that the Steering Group should receive summary reports of progress against the main work streams. Therefore, RAFTS has prepared a progress reporting template which will be maintained by staff on a quarterly basis and issued to the Steering Group as a means of advising progress between meetings and in addition to informal liaison between staff. The summary report is shown in the associated spreadsheet distributed.

2. Recommendations:

The Steering Group is requested to:

- Approve the project work plan for use;
- Approve the quarterly summary reporting system for use.

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RAFTS

15 July 2011

REDACTED DRAFT ANNEX

Table 1: AQUACULTURE MITIGATION

Project/Work Theme	Activity	Who	2011 / 2012											
			A	M	J	J	A	S	O	N	D	J	F	M
1. Programme Management	Steering Group Meetings	Steering Group				x				x				x
	RAFTS / Staff Meetings	RAFTS/Staff		x	x		x		x		x		x	
	Marine Scotland / Staff Meetings (policy/science)	MS/Staff				x				x			x	
	Trust / Staff Meetings (as required)	Trusts/Staff		x		x		x		x		x	x	
	Development of new funding proposal	RAFTS/Staff/Trusts							x	x	x			
2. Aquaculture genetics	Site selection, advice to trusts	MC/DCH/DK	x	x	x									
	Plates to CIGENE	MC			x	x								
	SNP chip development	MC					x	x	x					
	Trust wild fish sampling	Trusts				x	x							
	Sample return to laboratory	Trusts					x	x						
	Sample preparations	MC						x	x					
	Samples to CIGENE for analysis	MC							x	x	x			
	Analysis and Reporting	MC/DCH/DK										x	x	x
3. Sweep netting	Site selection and approval	All	x	x										
	Advice to trusts on data return etc	DCH/DK		x										
	Trusts undertake sampling	Trusts		x	x	x								
	Data returns from netting	Trusts		x	x	x	x							
	Interim sweep net reporting and data collation	DCH/DK			x		x							
	Develop and agree report structure and responsibilities for analysis	DCH/DK/MSS/Steering Group					x	x						
	Final reporting and data analysis	DCH/DK/MSS					x	x	x					
	Internal partner consultation on draft report	All						x	x					
	Steering Group approval and agreement of external publication / peer review opportunities	Steering Group							x	x	x			

Project/Work Theme	Activity	Who	2011 / 2012											
			A	M	J	J	A	S	O	N	D	J	F	M
4. Site Sensitivity / Location Assessment and Guidance	Informal discussions and scoping with partners	DCH/DK	x	x	x	x	x	x	x	x	x	x		
	Progress reporting to Steering Group	DCH/DK				x				x				x
	Technical scoping (trusts) re software operating systems	DCH/DK	x	x										
	Data / information trawl and availability and format assessments	DCH/DK	x	x	x			x			x		x	
	Initial data analysis, association with trust areas and aquaculture units and distribution to trusts for verification	DCH/DK/Trusts		x	x									
	Trust confirmations of data analysis and association	Trusts				x	x							
	Access database development	DCH/DK		x	x			x			x		x	
	Initial development of suite of risk factors and assessment scoring system in consultation with trusts	DCH/DK/Trusts		x	x	x								
	First report of data availability, constraints and scoring and weighting (for consultation and review and including GIS and technical issues)	DCH/DK			x	x								
	Consultation and consideration of first report and approach with others: <ul style="list-style-type: none"> Trust / MSS workshop; Initial discussions with SNH, Planners, SEPA (provisional list) 	DCH/DK/Trusts/MSS/ Other Partners				x	x	x						
	Refine report, approach and method (including agreement of data layers and risk factors to be used in model)	DCH/DK						x	x					
	System testing	Trusts and/or external partners									x	x	x	
	Ongoing liaison and consultation with partners and potential users	DCH/DK			x			x			x			x
	Development of GIS architecture and alignment / integration with Access database	DCH/DK			x	x			x			x		x
Invitation consultative workshop to demonstrate	DCH/DK										x			

Project/Work Theme	Activity	Who	2011 / 2012											
			A	M	J	J	A	S	O	N	D	J	F	M
	model, approach and use													
	Finalise development of approach, method and system	DCH/DK										x	x	
	Operational guidance and manual for tool	DCH/DK								x	x	x	x	x
	Sign off and approval by Steering group	Steering Group												x
	Identification of future refinements and improvements	DCH/DK/Steering Group												x
5. Wild fish/aquaculture liaison	General non-administrative advice and support to AMGs	DK/DCH				x				x				x
	Presentation of project progress to AMGs (as required)	DK/DCH							x	x			x	x
6. Other activities	External communications / liaison / information	DK/DCH				x			x			x		x

From: REDACTED [<mailto:REDACTED@rafts.org.uk>]
Sent: 11 May 2012 14:40
To: Weatherston R (Robin); S.Middlemas@MARLAB.AC.UK
Subject: Managing Interactions Steering Group

Robin / Stuart

I hope you are both well.

Contacting you quickly just now as I think we probably should convene a meeting of the Managing Interactions Steering Group in the next few weeks but wanted to check you'd be agreeable to that.

Haven't thought of a full agenda but we will need to close down the work of this year and, if the work is to continue, consider what might be happening going forward.

REDACTED and REDACTED are with us until end July and so will be undertaking further work on the locational guidance work stream, the 2011 sweep netting report is final and published and I have asked Mark for a report of the genetics work for this meeting. There is clearly much uncertainty about the future but some of that may have cleared a little by the time any meeting is scheduled and agreed.

In the meantime I will prepare a short proposal to continue with Post Smolt Sweep netting work this year and beyond as a decision on that is required quickly if that is to carry on. I have, without prejudice, advised the trusts to plan for that work but there will be a need to review the sites of 2011 for revision in 2012 (a task I would hope we could deal with at the Steering Group meeting as last time).

For the other areas of work there is a requirement for us to discuss with the SSPO how to proceed and how they might wish to engage in that. Willie was clear within the facilitated discussion process meetings that, as there was a shared interest in that work in particular, that he would anticipate a proposal with RAFTS/Trusts and SSPO/Industry involvement. I think we can achieve that but we need to get round the table with industry to do this and that will delay a proposal to you.

Can you, for now, give the OK to the Steering Group meeting and we will take that forward.

You will have heard I think that we are now in the firing line on aquaculture from the wild fish sector (or some within it anyway!) due to our work on the locational guidance. We are working hard to come through that but it is a bit choppy at the minute.

Best wishes
REDACTED

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-----Original Message-----

From: REDACTED RAFTs [<mailto:REDACTED@rafts.org.uk>]

Sent: 12 May 2011 19:17

To: REDACTED; REDACTED; REDACTED'; 'Wester Ross Fisheries Trust'; 'Lochaber Fisheries Trust'; 'REDACTED'; ak@argyllfisheriestrust.co.uk; 'REDACTED (RAFTS)'; Brian Dornan; Stuart Middlemas; WRFT Administrator; REDACTED; REDACTED @ohft.org.uk

Subject: Urgent Trust Update Sweep Netting Project

Dear All,

I have unfortunately missed out a very important part of the sweep netting that was agreed in the meeting in March. Which was every Trust agreed to carry out a comparison sea lice count at their first sweep. I am now issuing guidance on how this should proceed and how we require the data to be returned to us.

Comparison Counting Protocol

Comparison Counting Protocol is to be undertaken by all trusts to count lice using both underwater and above surface protocols. This should be carried out during the first sampling round. Where one person is to carry out a count using the dry method whilst the second person is to carry out a wet count as per the SFCC protocol. Please complete the attached Datasheet and return to us as soon as possible. Once we have received the information back we will analyse it which will allow us to draw a conclusion on the application of which protocol is too used by the individual Trusts. It is of importance that you wait until we have analysed the data before continuing your sweep netting program. We will turn around the analysis in a day and the quicker you get the results to us the quicker we will be able to update you. This was agreed at the March meeting. We do need to determine the procedures to continue with to ensure we are not collecting data with inaccurate methods that could potentially invalidate any analysis we conduct.

Clearly we all have the welfare of the fish as the utmost priority if you feel you are at any point putting them under too much stress whilst carrying out this comparison method please stop and notify REDACTED or myself at the soonest opportunity.

If you have any queries or concerns with this please do not hesitate to contact Diane or myself.

Kind Regards

From: REDACTED RAFTS [<mailto:REDACTED@rafts.org.uk>]

Sent: 24 April 2012 11:29

To: REDACTED ; REDACTED (RAFTS); Lochaber Fisheries Trust; REDACTED@btinternet.com
REDACTED REDACTED (WSFT); REDACTED; @argyllfisheriestrust.co.uk; Wester Ross Fisheries Trust;
admin@wrft.org.uk; REDACTED (home); REDACTED; REDACTED; REDACTED@rafts.org.uk
; Middlemas S (Stuart) (MARLAB); @asfb.org.uk; Weatherston R (Robin)

Subject: RAFTS Regional Monitoring Report 2011 Completed

Dear All,

Thank you very much for the great efforts and time put into completing the sweep netting regional report 2011 it is now finalised and I have attached a copy of the completed report to this email. I have also provided a quick summary of the three main points raised leading up to the finalisation of the report below:

- 1) The inclusion of historic data: this report was envisioned to produce a one year regional report of the monitoring project for 2011. Nonetheless, the data is available to Scottish Government and Marine Scotland Science to carry out this analysis and as this project goes forward this is a priority target piece of work that is hoped to be achieved in the future.
- 2) The size of fish used for the Wells et al 2006 analysis: there were some concerns raised about the size limit of 198mm (weight limit of 70g) in the analysis however this is a recommend size limit from the study and further discussions with Dr Wells and Dr Middlemas confirmed it would not be appropriate to try and scale the calculations up.
- 3) Predation discussion: there was conflicting feelings from the trusts on whether this information should be included in the report or not with the majority wishing it to be included but ensuring that it was quite clear that further work is needed in this area before any firm conclusions can be made to reflect this I rewrote this section.

One final thing I would just like to personally thank all the trusts and your helpers for the hard work that went into collecting the data. Also the ideas and thoughts which came from the biologists and the steering group helped greatly in the development of this report. Last but absolutely by no means least a big thank you has to go to Dr Middlemas (MSS) and Dr Wells (ASFB) for taking the time and sharing your knowledge, experience and understanding in this highly complex area with me it was greatly appreciated.

If you have any further queries please do not hesitate to contact me.

Kind Regards

REDACTED

1 **Scottish Fisheries Co-ordination Centre**

2
3 **Sea trout netting and sea lice sampling: a standard sweep netting protocol for**
4 **management**

5
6 **Disclaimer**

7 Under no circumstances will the Scottish Fisheries Co-ordination Centre (SFCC)
8 and/or its members accept responsibility for any kind of problems arising from the use
9 of this protocol. Health and safety issues relating to the practices referred to in this
10 protocol are entirely the responsibility of parties who are intending to use or who are
11 using this protocol. Users should bear in mind that the practices referred to in this
12 protocol are potentially dangerous activities. It is the responsibility of parties using or
13 intending to use this protocol to inform staff of potential dangers and to establish
14 procedures to minimise risks. Under no circumstances will the SFCC and/or its
15 members be held responsible for death or any form of injury, damage or loss
16 occurring during or as a result of the use of this protocol. In addition to the risks
17 associated with the practices referred to in this protocol *per se*, personnel working in
18 the vicinity of rivers should be made aware of Weil's Disease (Leptospirosis) and
19 other potential hazards and the steps to take to minimise exposure as detailed in
20 Appendix 1 of the SFCC Electrofishing Team Leader Training Manual that can be
21 downloaded from <http://www.sfcc.co.uk/protocols.asp>.

22
23 **Acknowledgements**

24 This protocol results from the "Sea Trout Netting & Sea Lice Sampling Workshop"
25 organised by the SFCC and held in Fort William, from 5th-6th November 2008. The
26 SFCC would like to thank Lochaber Fisheries Trust Ltd for hosting the event, in
27 particular the contribution made by Diane Baum and Lucy Smith. The SFCC also
28 thanks the Alexandra Hotel, Fort William, for the use of their facilities, in particular
29 the efforts of Val Maciver. The SFCC are grateful to all those who contributed to the
30 programme either *via* assistance with the planning of the workshop, or by presenting,
31 demonstrating, or contributing to discussions during the workshop. In particular, the
32 SFCC would like to thank John Armstrong, Patrina Beattie, Stuart Middlemas,
33 Campbell Pert and Jim Raffell (Fisheries Research Services), Arthur Griffiths

1 (Scottish Government), Alan Kettle-White (Argyll Fisheries Trust) and Brid O'Shea
2 (Aberdeen University) for their valued contribution.

3

4 **Contact**

5 If you have any questions or comments about this protocol, or if you require further
6 information about the SFCC, please contact the SFCC Manager, James Orpwood
7 [Tel.: 01224 294413 (direct line) or 01796 472060 (switchboard); Fax: 01796 473523;
8 Email: j.orpwood@marlab.ac.uk; Post: Scottish Fisheries Co-ordination Centre,
9 Fisheries Research Services, Freshwater Laboratory, Faskally, Pitlochry, Perthshire,
10 PH16 5LB].

11

1 **Aims and purposes of the protocol**

2
3 One of the aims of the Fort William workshop was to bring together practitioners and
4 scientists working in different sectors in the aquatic environment to establish standard
5 protocols for sea trout netting and sea lice sampling. The resulting protocol is aimed
6 primarily at the needs of fisheries managers seeking to assess the health and condition
7 of sea trout in their local area, for example as part of long term monitoring. Moreover,
8 it is intended that by using standardised data collection methods for measuring sea lice
9 infestation parameters¹ on sea trout in their local area, national compatibility and
10 comparability among regional datasets will be possible.

11
12 ¹ Sea lice infestation parameters include: (1) **prevalence**-the percentage of infested
13 fish in the sample; (2) **abundance**-the average (mean) number of lice in the sample;
14 and (3) **intensity**-the average (mean) number of lice per infected fish.

15 16 **Structure of the protocol**

17
18 The protocol is structured to address issues in a logical progression:

- 19
20 (1) Sea trout netting: When, where and how to catch sea trout for sea lice sampling.
21 (2) Sea lice sampling: How to process the captured sea trout to enable calculation of
22 lice infestation parameters.

23
24 The SFCC recognises that the process of catching sea trout is dictated to a large
25 degree by the physical nature of the location that one may wish to sample. It is
26 therefore virtually impossible to impose strict constraints as to the specifics of capture
27 techniques, and this is reflected in the first part of the protocol which regards, in the
28 main, the factors that should be considered in a sampling programme. The process of
29 sampling sea lice is, however, far easier to standardise, and this is reflected in the
30 second part of the protocol. With this in mind, it is important to consider that this
31 standard protocol should be sufficiently simple to apply so as to meet the aims for
32 which it has been conceived as defined above in section.

33

The protocol

Sea trout netting

Site selection

Site selection should consider the following questions:

- Are there any sea trout there? If so, do they occur in sufficient numbers to enable to meaningful sample size to be caught? Knowledge of habitat usage by sea trout in the local area will be crucial in this regard.

- Can I fish at this site safely and effectively?

- What is the aim of the study? Is the study part of a long term monitoring programme, or research-driven, aiming to test a specific hypothesis?

- What sort of fish are being targeted? Do you wish to target post-smolts, finnock or early returning fish?

Site selection is likely to be fairly constrained due to the high number of factors that must be considered including:

- Ease of access (logistical-road/shoreline profile/launch amenities for a boat)

- Ease of access (legal-permission of owner/proprietor/District Salmon Fishery Board)

- Health and safety of personnel

- Location of fish farm sites (potential for cherry picking vs. strategic aim of the sampling)

- Historical sampling

- Water currents

- Random selection

The SFCC encourages the continuation of sampling at well established and reliable sites. When new sites are established, a degree of trial and error and learning from experiences at similar sites will be required, for example establishing whether a site is best sampled at high or low tide. A walkover survey should be carried out at low tide to assess the feasibility of possible approaches to sampling and appropriate visual and

1 mental risk assessments should be made with regards routes of retreat from the site,
2 wave action, strong currents, exposure, suitability for processing fish post capture etc.

3

4 **Site attributes to be recorded**

5 The following details should be recorded for each sampling event:

- 6 Date
- 7 Time
- 8 Water temperature
- 9 Air temperature
- 10 Salinity

11

12 **Catching the fish**

13 A number of methods for catching sea trout exist, with the method used typically
14 varying according to factors such as the location of the sampling site, water depth,
15 accessibility, speed of the tide and current strength etc.

16

17 When fishing for sea trout in freshwater (upstream of the mean high water spring
18 tide), standard SFCC electrofishing protocols and record sheets as detailed in the
19 SFCC Electrofishing Team Leader Training Manual
20 <http://www.sfcc.co.uk/protocols.asp> should be applied, in conjunction with the sea
21 lice sampling protocol detailed below.

22

23 When fishing for sea trout in estuarine (< 35 ppm salinity) or marine environments,
24 sweep netting is a widely used and well practised technique among practitioners that
25 enables assessment of the condition of fish caught at a defined location. This protocol
26 concerns specifically the application of sweep netting as the standard preferred
27 method by which sea trout are sampled for the purposes of assessing sea lice
28 infestation parameters. However, the SFCC appreciates that sweep netting will not be
29 an appropriate sampling method in all situations, and as such, priorities for local
30 management may dictate that sampling by other methods is necessary.

31

32 In appreciation of the highly variable characteristics of sweep netting sites, the SFCC
33 does not intend to dictate the specifics of netting equipment or procedures as this
34 would be impossible. The physical procedure of sweep netting should be carried out

1 using a method appropriate to the characteristics of the site being fished, for example
2 by wading, and/or by deploying a rowing or motor boat.

3
4 However, to enable calculations of catch per unit effort, the number of sweeps carried
5 out and the number of fish caught in each sweep should be recorded.

6

7 **Sampling frequency and timing**

8 Due to differing requirements for local management, research, monitoring, and
9 obligations to fulfil Area Management Agreements, biologists, scientists and Regional
10 Development Officers have, to date, not had a need to co-ordinate sea lice sampling
11 strategies among different practitioners. Sweep netting for sea trout and the associated
12 sampling of sea lice have therefore been carried out at varying intensities among
13 regions, typically from May to July, but occasionally throughout the year.

14

15 To gain the greatest possible value resulting from the application of a standardised
16 sampling protocol, the SFCC requests that sampling should be carried out on three
17 days in May and June. This sampling strategy fits the period of greatest sampling
18 intensity currently in operation, enabling all practitioners to collect data to a standard
19 protocol while not compromising local priorities.

20

21 Over these three days in May and June, the sampling strategy should:

- 22 - Aim to catch a minimum of 30 fish (either post-smolt, finnock, or a combination of
23 the two). Traditional methods of splitting fish into categories (using 260 mm fork
24 length as the threshold) should be avoided unless the results are confirmed by ageing
25 from scales. Individual fish lengths should be measured (rather than assigning to
26 categories) to allow data to be pooled for fish of all lengths if subsequently required.
- 27 - Repeat sampling at the same site(s). Limitations of time and personnel may mean
28 that practitioners are limited to sampling a single site in any given area. In such a
29 situation, priority should be given to sampling this single site a number of times,
30 rather than sampling (for example) once only at three different sites over this two
31 month period.

32

1 This sampling strategy can be most helpfully viewed as an acceptable minimum. The
2 SFCC strongly recommends that this same protocol be applied for the remainder of
3 the sweep netting season/year where practically possible.

4 5 **Sea lice sampling**

6
7 1. Anaesthetise the fish (preferably using neutral-buffered MS222 at a dose of
8 100mg l^{-1}). To ensure no lice are lost in the anaesthetising process, the water may be
9 sieved with a $100\mu\text{m}$ mesh.

10
11 2. Record fork length (to the nearest mm) and wet weight (to the nearest g). *Given*
12 *that it may be logistically unfeasible to weigh fish under certain conditions, for*
13 *example in strong winds, recording wet weight may be considered as optional.*
14 *However, it is strongly encouraged that wet weight be recorded if at all possible to*
15 *further strengthen the validity of the data, for example by allowing the calculation of*
16 *condition factor and the number of lice per gram of fish.*

17
18 3. Place the anaesthetised fish into water against a light background.

19 20 *L. salmonis*

21 4. Count and record: (a) the number of lice present on the fish; and (b) at what
22 developmental stage the lice are at. The developmental stages are classified into three
23 categories:

24
25 Category 1: Early stages-attached copepodids and chalimus

26 Category 2: Mobile stages: pre-adults and adults including mature males and
27 non-ovigerous females

28 Category 3: Gravid stages: ovigerous females

29
30 Copepodids are reasonably difficult to count, partly due to their size, and partly
31 because they are easily knocked off the fish. One method is to run a pair of
32 watchmaker's forceps gently over the surface of the fish to disturb the lice. They may
33 also be spotted by the way the water sits on the body, with "water bumps" resulting

1 where the lice are not flush with the body surface of the fish. The use of a binocular
2 microscope, magnifying glass or a hand lens is helpful. Particular attention should be
3 given to the dorsal surface and the caudal fin due to the darker coloration in these
4 areas making lice more difficult to spot.

5

6 Chalimus are easier to spot and sample because they are larger than the copepodids
7 and because forceps can be used to move them without knocking them off the fish.
8 Careful attention must still be given, however, as they can appear a little transparent
9 and therefore easily missed.

10

11 *Caligus*

12 5. Count and record the number of *Caligus* present on the fish.

13

14 6. Note lice damage to the dorsal fin, classified into four categories:

15

16 0: No damage

17 1: < 33 % damage

18 2: 33-66 % damage

19 3: > 66 % damage

20

21 7. Note the presence or absence of attachment spots.

22

23 8. Note the presence or absence of *Cryptocotyle lingua* as a useful indicator of
24 whether or not the fish has been to sea.

25

26 9. Note whether or not scales have been taken for ageing purposes.

27

28 10. Note whether or not the fish is a recapture.

29

30 11. Record any other information (e.g. tag number, any other parasites present) in the
31 "notes" column.

32

33 **General notes**

1 Although this protocol is aimed at the specifics of sweep netting for sea trout and the
2 associated sampling of sea lice, all other aspects of good practice normally associated
3 with fisheries management activities should be adhered to. Life jackets must be worn
4 at all times when operating boats, or when wearing chest waders. The SFCC
5 recommends that lifejackets be worn by all personnel operating in the vicinity of
6 water.

Rivers and Fisheries Trusts of Scotland
West Coast Aquaculture Mitigation Project

Steering Group Paper:

Genetics Progress Report:
SNP Chip Development and Wild Fish Sampling Programme

Purpose:

This paper is provided to the project Steering Group to update them on the current status and progress of the genetics work being undertaken within the Aquaculture Mitigations project.

1. Introduction:

Within the Aquaculture Mitigation project there is a stream of work scheduled which will develop a west coast specific SNP chip allowing the comparison of wild fish samples to the markers on that chip and support the identification of aquaculture source genetic materials in wild fish populations. In addition to the chip development an initial programme of wild fish sampling is scheduled to provide an initial assessment of the presence and level of aquaculture genetic materials in sampled catchments.

Although sampling in 2011 will be limited by available resources for analysis it will provide the basis for the development of an ongoing and structured monitoring programme in future years.

Progress is reported in 3 areas below:

1. Development of SNP Chip;
2. Engagement with aquaculture industry re provision of aquaculture samples; and
3. General guidance to trusts on genetic sampling for 2011.

2. Progress Reporting:

2.1 SNP Chip Development

Wild fish samples will be sent to the CIGENE laboratory in Norway in the week commencing 18 July following final laboratory preparations. Samples are being lodged from the Carnach and Moidart (Lochaber), the Langavat (Western Isles) and Gruinard (Wester Ross). There was not sufficient genetic material remaining for the Lochy to include this in the submission but samples from there have been prepared for analysis against the farm/wild SNP as part of the FASMOP project. The samples are anticipated to be returned to the project for CIGENE in August or early September.

When returned the SNP markers most appropriate for use will be identified and this will allow comparison of wild fish samples to be compared against an increasingly robust SNP marker set.

2.2 Engagement with aquaculture

A number of farm companies have expressed an interest in providing aquaculture fish samples to the project. This development is hugely welcomed and would be hugely valuable. Currently interest has been confirmed by the Loch Duart Salmon, the Scottish Salmon Company and Wester Ross Fisheries Ltd. No samples have yet been provided due, in the main, to operational constraints on the sites themselves.

When, and if, samples are provided they will be sent to CIGENE separately and used to further refine the SNP chip developed. Additional funds for analysis of these aquaculture samples will be required to be found either from the current project budget or from additional external funding. Given the importance of including such samples RAFTS will undertake to secure these funds if required.

2.3 Guidance to trusts on 2011 sampling

All trusts in the project will be supported to gather wild fish samples during summer 2011 to compare against the SNP chip being developed and to check for aquaculture genetic ingress. A total of 100 samples per trust have been allocated equating to 33 samples gathered at 3 survey locations. It is anticipated that samples will be gathered during routine or already scheduled electro-fishing activities in the large majority or all cases. At this stage in the development of the monitoring programme and the SNP chip there is flexibility available to trusts as to how to select sites and gather the samples for analysis.

Trusts can:

- Collect 100 samples from x3 locations within 1 large or high priority/risk catchment: OR
- Collect 100 samples from x3 sites located across 3 small catchments in order to give a wider spread of samples but with less intensive sampling: OR
- Collect 100 samples from x3 sites located in 2 catchments with x2 sites sampled in 1 catchment and x1 site sampled in another.

Were the programme to be extended in further years then a more strategic and structured sampling strategy can be put in place to recognise and accommodate the need to deliver a spread of sampled catchments across the region and to also recognise the importance of maintaining sampling in high risk or larger catchments.

Samples gathered in 2011 should, ideally, be returned to the Faskally laboratory by end September.

In addition it would be helpful of project staff to be advised of catchments to be sampled over the course of the summer.

3. Recommendations:

The Steering Group is invited to:

- Note the progress re SNP chip development:
- Note the positive engagement with aquaculture operators and the need to reallocate project resources or secure additional resources to accommodate aquaculture samples in due course;
- Note the basic guidance to trusts in respect of summer 2011 sampling.

REDACTED
15 July 2011

Aquaculture Mitigation Progress Reporting Summary 2011

			Quarterly Progress Report of Major Activities						
Sage Department	Project Title	Lead Officer	January - March*	Status** (G, A, R)	Remedial Action***	April - June*	Status** (G, A, R)	Remedial Action***	July
25	Aquaculture Mitigation Project: i. Sweep Netting	Diane Kennedy / Donna-Claire Hunter	Funding agreement signed with Scottish Government and employem tissues concluded with x2 staff retained from TWG and taking up post with new project and employed by RAFTS. A number of logistical, technical and operational issue clarified with partners at group meeting before funding agreement signed.	GREEN	None	This project has identified a core suite of twenty eight monitoring sites which have been agreed with all steering group partners. Project coordinators have issued guidance on the confirmed sites and how data should be sampled and returned for analysis. Project coordinators are currently compiling data returns and preparing a draft outline paper. There has also been further liaison support to Trusts in ensuring permissions are secured and meeting requests of river proprieties on updates.	AMBER	All Trusts are currently undertaking sampling (Sampling period Mid May to Mid July) with varying degrees of success. The weather conditions have been problematic and access to monitoring sites has been limited due to safety concerns. Data is being returned by some but not all trusts; data returns are being requested. This activity is running on time but some monitoring sites that are unlikely to meet the project requirements of two visits and minimum of thirty fish by the end of the sample period.	
	Aquaculture Mitigation Project: and Aquaculture Liaison ii. Wild Fish		Not active in this quarter.			Project Coordinators have been actively supporting Wild fisheries through attending Meetings and supplying information when requests have come in from AMGs. The project coordinators have also held discussions with a number of statutory bodies including SEPA, MSS, Planners and SNH.	GREEN	No foreseeable issues with aspect of the project	
	Aquaculture Mitigation Project: iii. Genetics		Not active in this quarter.			A meeting has been held with Project coordinators, REDACTED and REDACTED to discuss and define river site selection for this project. REDACTED is currently finalising the river site selection and information will to issued to Trusts in due course. Wild fish samples will be issued to CIGENE to support SNP development in mid July. Aquaculture samples are being sought and may be available within the project year.	GREEN		
	NW Aquaculture Mitigation Project: Locational Guidance iii.		Not active in this quarter.			Initial data compilation exercise is complete. Awaiting advice about risk assessment scoring from SEPA. Delays receiving GIS software required to complete distance calculations has held back a one section of the database compilation. Databases almost complete to send to Trusts for performance testing.	GREEN	Running to schedule at present apart from distance calculations. GIS software arrival is imminent and SEPA RA expert on holiday at present, expected return next week so risk scoring development for Trusts appraisal will then be complete.	

NOTES:

*: Briefly summarise (a few sentences and no more than 2 or 3 paragraphs) significant project activities in the quarter e.g. Steering Group meets, grant claims, report provision, contractor appointment, tendering exercise. Summarise if there are difficulties arising in the project and major activities planned in the next quarter.

** : Provide a Status Class for the project in the quarter from the options below (copy the appropriate filled cell into your project status cell).

GREEN	Green status = Project on track with no major problems arising that might compromise delivery.
AMBER	Amber status = Project generally on track but minor issues that may compromise delivery but which are being mitigated and managed.
RED	Red status = Project not on track and significant risks of non-delivery. Red status projects will require reporting to the RAFTS Board with recommended interventions to improve status.
BLACK	Black Status = Project closed

***: No remedial actions required for green status projects. State remedial actions for projects classed as amber or red. Red projects will require additional reporting to Board to ensure mitigations are sufficiently robust.

****: At year end a status for each project will be required to transfer into management of project in next calendar year.

and Assignment of Status (Green, Amber, Red) 2011

/ - September*	Status** (G, A, R)	Remedial Action***	October - December*	Status** (G, A, R)	Remedial Action***	Status **** (G, A, R)

