

#### Gap Analysis Responses to the Questions for Parties

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#### Purpose

The purpose of this paper is to inform the Board of the responses received from the Parties to the gap analysis questions on the proposed North Atlantic-wide scale study.

#### Decision

• no decision is required.

#### Background

Following the 2025 Inter-Sessional Meeting of the International Atlantic Salmon Research Board (the Board), Canada, the UK and the United States developed a number of questions for the Parties relating to the proposed North Atlantic-wide scale Study.

These questions were circulated to the Board members by correspondence and responses were received from: Canada, Denmark (in respect of the Faroe Islands and Greenland), the European Union, Iceland, the Russian Federation, the UK and the United States.

The questions, and the full responses as received, are provided below to inform the Board's discussions on the next steps for the proposed study.

Annex 1 contains a brief summary of the responses to these questions.

#### **Questions and Responses**

#### 1. Is your Party willing to participate in this study (ignoring resource needs)?

#### Canada

Canada is interested to participate in the basin-wide marine growth study. Canada believes this project is critical for understanding widespread declines and the all-time low salmon abundances.

#### Denmark (in respect of the Faroe Islands and Greenland)

DFG will not be able to provide resources to participate in the study. As far as I understand the Greenland Institute of Natural Resources does not have the specific sample type that is required in its archives.

#### European Union

Yes *Iceland* Yes *Norway* 

Yes

**Russian Federation** 

<sup>&</sup>lt;sup>1</sup> Revised 3 June 2025 to include responses from Iceland.

'The Russian Federation has four Atlantic salmon stock units, as used by WGNAS. Annual Atlantic salmon scale collection in the Arkhangelsk region and the Pechora River ceased many years ago. In the Murmansk region, the scale collection continues on several rivers in both stock units, but the data sets do not meet the minimum requirements outlined within the proposal. Salmon scales on the Ponoi River are collected from recreational rod catches. The number of samples reduced considerably since 2020. In addition, these are mainly salmon that have overwintered in the river, therefore the edge of scales are destroyed due to being in freshwater. On the Tuloma River, for which long-term data set is also exists, since 2020 the number of scale samples per sea age group is less than required for analysis.

- Northern Northeast Atlantic (N NEAC) Russia Archangelsk no scale sample dataset is available for the Stock Unit.
- Northern Northeast Atlantic (N NEAC) Russia Kola / White Sea one scale sample dataset is available for the Ponoi River however it does not meet the minimum requirements outlined within the proposal.
- Northern Northeast Atlantic (N NEAC) Russia Kola / Barents Sea one scale sample dataset is available for the Tuloma River however it does not meet the minimum requirements outlined within the proposal.
- Northern Northeast Atlantic (N NEAC) Russia Pechora River no scale sample dataset is available for the Stock Unit.

Under these circumstances, I do not think we will participate in the Proposed Atlantic Salmon Marine Growth Study.

UK

Yes

#### **United States**

Yes

#### 2. What jurisdictions within your Party are willing to participate (if applicable)?

#### **European Union**

EU – Ireland is willing to participate, other EU jurisdictions are considering the proposal

UK

*UK – England*: Yes

- UK Northern Ireland: Yes, but resources are limited
- *UK Scotland*: Yes, but resources are limited

UK – Wales: Yes

#### 3. For each willing Party / jurisdiction:

a. For which Stock Units (see Appendix 1 of ICRIS(25)02) within your Party / jurisdiction can you provide at least one scale sample dataset, which meet the minimum requirements outlined within the proposal?

#### Canada

Canada can provide a dataset for each of the five Stock Units within its jurisdiction:

Scotia-Fundy, Gulf, Quebec, Newfoundland and Labrador. Detailed information on these datasets has been collated by Canada's Board member and is available for the next steps.

#### **European Union**

The EU could potentially provide a dataset for EU – Ireland; other EU jurisdictions are currently considering participation in this project.

#### Iceland

For all stock units

#### Norway

Yes, for all four stock units (Southeast Norway, Southwest Norway, Mid Norway and North Norway)

#### UK

*UK – Northern Ireland*: DEARA areas

UK – Scotland: East

UK – England and Wales

#### **United States**

USA

### b. Are the scale samples acetate 'pressed' or are they only in the whole state? *Canada*

Scale archives in Canada would have to be prepared for the project.

#### European Union

There are stored in a mixture of states

#### Iceland

Pressed

#### Norway

Most of them are acetate pressed, but some older samples are in whole state.

#### UK

UK – England: Whole scales

UK – Northern Ireland: DEARA areas – some samples are pressed but not all

UK-Scotland: East-pressed

UK – Wales: whole

#### **United States**

Whole state, but we may be able to press them prior to imaging

### c. Do you have the equipment resources needed to compile the required images? *Canada*

Yes

#### **European Union**

Yes, but the project time scales for delivery would need to be considered

#### Iceland

Micleroscopes and cameras are available

#### Norway

Yes, both microscopes and cameras are available.

UK

UK – England: Yes

*UK – Northern Ireland*: DEARA areas – Yes

UK - Scotland: East - Yes

UK – Wales: Yes

#### **United States**

Yes

#### d. Do you have the people resources needed to compile the required images?

#### Canada

No. Staff time is the limiting factor for scale digitization.

#### European Union

Yes, but the project time scales for delivery would need to be considered

#### Iceland

Yes

#### Norway

We do have people that can take the images, and compile the necessary information about each individual sample, but we do not have finances to cover all of the working hours needed ready yet.

#### UK

*UK – England*: No

UK – Northern Ireland: DEARA areas – No

UK – Scotland: East – yes, assuming current level of staffing and no change to delivery priorities

UK – Wales: No

#### **United States**

Yes

### e. If not, would you be able to provide the fiscal resources needed to obtain the people and / or equipment resources needed?

#### Canada

Canada will provide the resources required to digitize scales. Internal discussions on the way forward are underway.

#### Norway

We will apply for funding through national sources, but there is no guarantee that we will get funding. If the project is realized, we will try our best to provide funding, but we are not in a position to make a definitive commitment yet.

#### UK

*UK – England*: No

UK – Northern Ireland: DEARA areas – no, however there may be the potential to obtain MEFF funding to cover the staff resource requirement. This funding is not guaranteed and therefore cannot be relied upon.

UK – Wales: No

### f. If not, would you have the resources to compile the appropriate scale samples and provide them to a different Party / jurisdiction for imaging?

#### Canada

Canada is planning to provide digitized scale images to the project.

#### Norway

We prefer to take the images ourselves to avoid the risk that scales can get lost. Furthermore, scales are also important samples for other studies for example using DNA methods and we thus want to reduce the risk contamination by taking the images ourselves.

#### UK

*UK – England*: No

UK - Northern Ireland: DEARA areas - No

UK - Wales: I doubt it, we are currently down on resource, that may change in the future

# g. If not, do you have an estimate of what fiscal resources would be needed from an external source to compile a single Stock Unit level scale image dataset (i.e. ~3000 images), recognising there is no guarantee that these would be provided and therefore your participation in this project may not occur?

UK

*UK – Northern Ireland*: DEARA areas – approximate full economic cost of a Scientific Officer for one year (based on 2025/26 staff costs) is £92,000

UK - Wales: This would depend on whether we would be hiring someone to do the imaging or outsourcing it. (due to costs of equipment/training also)

#### h. Can imaging be accomplished within a year?

#### Canada

Yes, with appropriate planning.

#### **European Union**

We think so, but the project set-up, data sharing agreements etc... would take time.

#### Iceland

Yes

#### Norway

If funding is provided, imaging could be accomplished within a year.

UK

UK – Northern Ireland: DEARA areas – imaging can be completed within one year, however an additional 6 months would be required to gain all the internal permissions and undertake recruitment exercise so this project should be at least 18 months in duration

UK – *Scotland*: East – yes, assuming current level of staffing and no change to delivery priorities

*UK* – *Wales*: I think with the proper resource this should be achievable

#### **United States**

Yes

i. Are there any details / nuances that should be provided to help explain the above answers?

#### UK

UK – Northern Ireland: DEARA areas – Internal processes and approvals will need to be in place before the imaging work could commence. Therefore, whilst the imaging work could be completed in 12 months it would take up to an additional 6 months to complete the internal governance and recruitment required before the project could commence.

UK - Wales: – We do not have electronic records of our scales and therefore do not have the equipment to do so. Resource is stretched at the moment also.

#### **United States**

Our answers are dependent on the availability of appropriated funds under domestic law and there is a tremendous amount of uncertainly as to what our resource allocation will be in the near future. As such, our responses should not be viewed as a guarantee, but rather as support and willingness to participate in the proposed project if future resources allow. We will communicate with the Board as to our ability to participate as our budget situation develops.

4. Phase 2 of the proposed project entails hiring an analyst to oversee scale image processing, analysis and manuscript development. Given that:

### a. Are any Party / jurisdictions able to contribute funds to the Board to support this hiring?

#### Canada

The project was presented to DFO managers and DFO members on the Canadian Delegation to NASCO. All agreed on the importance of the study. Canada will be seeking potential internal sources of funding to support a project lead. More time is needed to seek potential funding.

#### European Union

The EU would consider supporting this project with a financial contribution

#### Iceland

Funds are to available at present

#### Norway

If other Parties also contribute, we may be willing to contribute.

UK

No / Not currently

#### **United States**

We do not have any funds on hand that could be transferred. However, without providing any guarantees, we would be willing to explore potential funding opportunities that could possibly be used to support this project.

We would be willing to consider allocating the £40,150 voluntary contribution, which has been ring-fenced for the purpose of funding projects under the SALSEA-Track or ROAM initiatives, to this initiative.

## b. Are any Party / jurisdictions aware of any funding opportunities that may be considered to support this hiring (e.g. request for proposals)? Please provide details if possible (e.g. call for proposals, timeline)

#### Canada

DFO has an internal competitive science fund to support research projects. Canada could submit a funding request to support the hiring of a project lead.

Research proposals are due in early fall (September) with successful applicants contacted in April.

#### European Union

None at this time

#### Iceland

Not currently

Norway

Uncertain at present.

#### UK

Not currently

Funding opportunities will be dependent on in which jurisdiction this staff member is based.

#### **United States**

We are not aware of any opportunities available at this time, but will continually keep an eye out moving forward.

### c. Do any Party / jurisdictions have other suggestions for consideration to obtain the resources / funds necessary to support Phase 2 of this project?

Canada

No

#### **European Union**

None at this time.

#### **United Kingdom**

UK - England:- Linking with Academia who can access funding internally for studentships. We would need to select a novel research question for the bid to focus on.

*UK – Wales:–* Student Placements?

#### **United States**

Not at this time.

#### Summary of Responses

Below is a brief summary of the responses given. These should be read in conjunction with the full responses above.

	Question	Summary of responses
1.	Is your Party willing to participate in this study (ignoring resource needs)?	Six Parties have indicated that they are willing to participate (Canada, EU, Iceland, Norway, UK and United States)
		Two Parties have indicated that they are unable to participate (Denmark (in respect of the Faroe Islands and Greenland) and the Russian Federation)
2.	What jurisdictions within your Party are willing to participate (if applicable)?	The EU has so far only received a response from EU – Ireland, which is willing to participate.
		Each UK jurisdiction is willing to participate, but UK – Northern Ireland and UK – Scotland have indicated that their participation may be limited by resources
3.a.	For which Stock Units within your Party / jurisdiction can you provide at least one scale sample dataset, which meet the minimum requirements outlined within the proposal?	Canada, Iceland, Norway and the United States are able to provide datasets for each of the stock units within their jurisdiction
		The UK is able to provide one of the two datasets for each of UK – Northern Ireland and UK – Scotland, and the UK – England & Wales dataset.
		At present, the EU may able to provide a dataset for EU – Ireland. Other jurisdictions are considering the project.
3.b.	Are the scale samples acetate 'pressed' or are they only in the whole state?	Iceland and UK – Scotland have indicated that their samples are pressed
		The EU, Norway and UK – Northern Ireland have indicated that the samples are in a mixture of states
		UK – England, UK – Wales and the United States have indicated that the samples are whole state samples
		Canada has indicated that the samples would need to be prepared for the study
3.c.	Do you have the equipment resources needed to compile the required images?	Canada, EU – Ireland, Iceland, Norway, UK – England, UK – Northern Ireland, UK – Scotland and the United States have indicated that they have the equipment

		UK – Wales does not
3.d.	Do you have the people resources needed to compile the required images?	EU – Ireland, Iceland, UK – Scotland and the United States do (currently) have the people resources
		Norway has people that can do the work but not the finances to fund all of the hours
		Canada, UK – England, UK – Northern Ireland and UK – Wales do not have the people resources
3.e.	If not, would you be able to provide the fiscal resources needed to obtain the people and / or equipment resources	Canada will provide the resources to digitize the scales
		Norway and UK – Northern Ireland may be able to obtain funding, but this cannot be guaranteed
		UK – England and UK – Wales cannot
	needed?	
3.f.	If not, would you have the resources to compile the appropriate scale samples and provide them to a different Party / jurisdiction for	Canada has indicated that it plans to provide digitized scales
		Norway, UK – England, UK – Northern Ireland and UK – Wales will not provide samples to another Party / jurisdiction for various reasons
	imaging?	
3.g.	If not, do you have an estimate of what fiscal resources would be needed from an external source to compile a single Stock Unit level scale image dataset (i.e. ~3000 images), recognising there is no guarantee that these would be provided and therefore your participation in this project may not occur?	UK – Northern Ireland: £92,000 for one year
3.h.	Can imaging be accomplished within a year?	Canada, EU, Iceland, Norway, UK – Scotland and UK – Wales and the United States have stated that this should be possible (subject to resources being available in some cases)

		UK – Northern Ireland has indicated that imaging should be possible within one year but another 6 months would be required to gain permissions and for the recruitment process
3.i.	Are there any details / nuances that should be provided to help explain the above answers?	<ul> <li>UK – Wales does not have electronic records of the scales and therefore does not have the equipment to do so. Resources are also stretched at the moment</li> <li>United States has indicated that their responses are dependent on the availability of appropriated funds under domestic law and there is a tremendous amount of uncertainty surrounding this</li> </ul>
<b>4.a.</b>	Are any Party / jurisdictions able to contribute funds to the Board to support [hiring an analyst]?	The EU and Norway have indicated that they may consider providing funding The United States has indicated that it would consider reallocating the £40,150 voluntary contribution, which has been ring-fenced for the purpose of funding projects under the SALSEA-Track or ROAM initiatives, to this initiative and would explore other potential funding opportunities Canada has indicated that it requires more time to seek potential funding Iceland and the UK have indicated that possible at present
4.b.	Are any Party / jurisdictions aware of any funding opportunities that may be considered to support this hiring (e.g. request for proposals)? Please provide details if possible (e.g. call for proposals, timeline)	Canada has indicated that it could make an application for funding The UK has indicated that funding opportunities would depend on in which jurisdiction the staff member was based The EU, Iceland, Norway and United States are unaware of any at present
4.c.	Do any Party / jurisdictions have other suggestions for consideration to obtain the resources / funds necessary to support Phase 2 of this project?	<ul> <li>UK – England suggested 'linking with Academia who can access funding internally for studentships. We would need to select a novel research question for the bid to focus on.'</li> <li>UK – Wales suggested student placements</li> </ul>