ICR(21)12

Developing an International Atlantic Salmon Modelling and Management Initiative (ISMMI)

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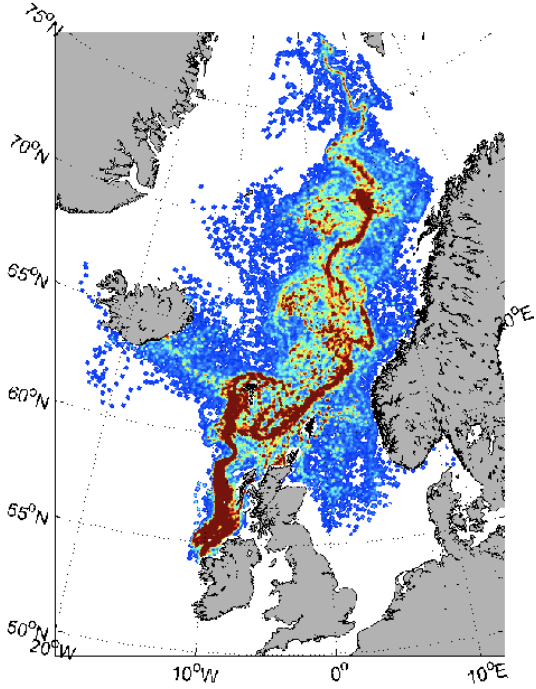

THE MISSING SALMON ALLIANCE

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THE MISSING SALMON ALLIANCE

Game & Wildlife Conservation Trust · Angling Trust · Fisheries Management Scotland · The Rivers Trust

INRAE

A Successor for SALSEA Track - A Vision

- International salmon conservation and management must move beyond the provision of catch advice, based on single-species, to a vision encompassing the whole salmon ecosystem
- Aligned with the provision of a new, management guidance/advice formats, addressing the salmon's wider needs

- ***International Atlantic Salmon Modelling and Management Initiative (ISMMI)***

Development of a major international funding bid to initiate, develop and support the building of an ecosystem-based management system for Atlantic salmon

What is ISMMI?

- **An initiative which will assist linking model development, mobilised data resources and prioritised research programmes to advance stock assessment and management efforts**

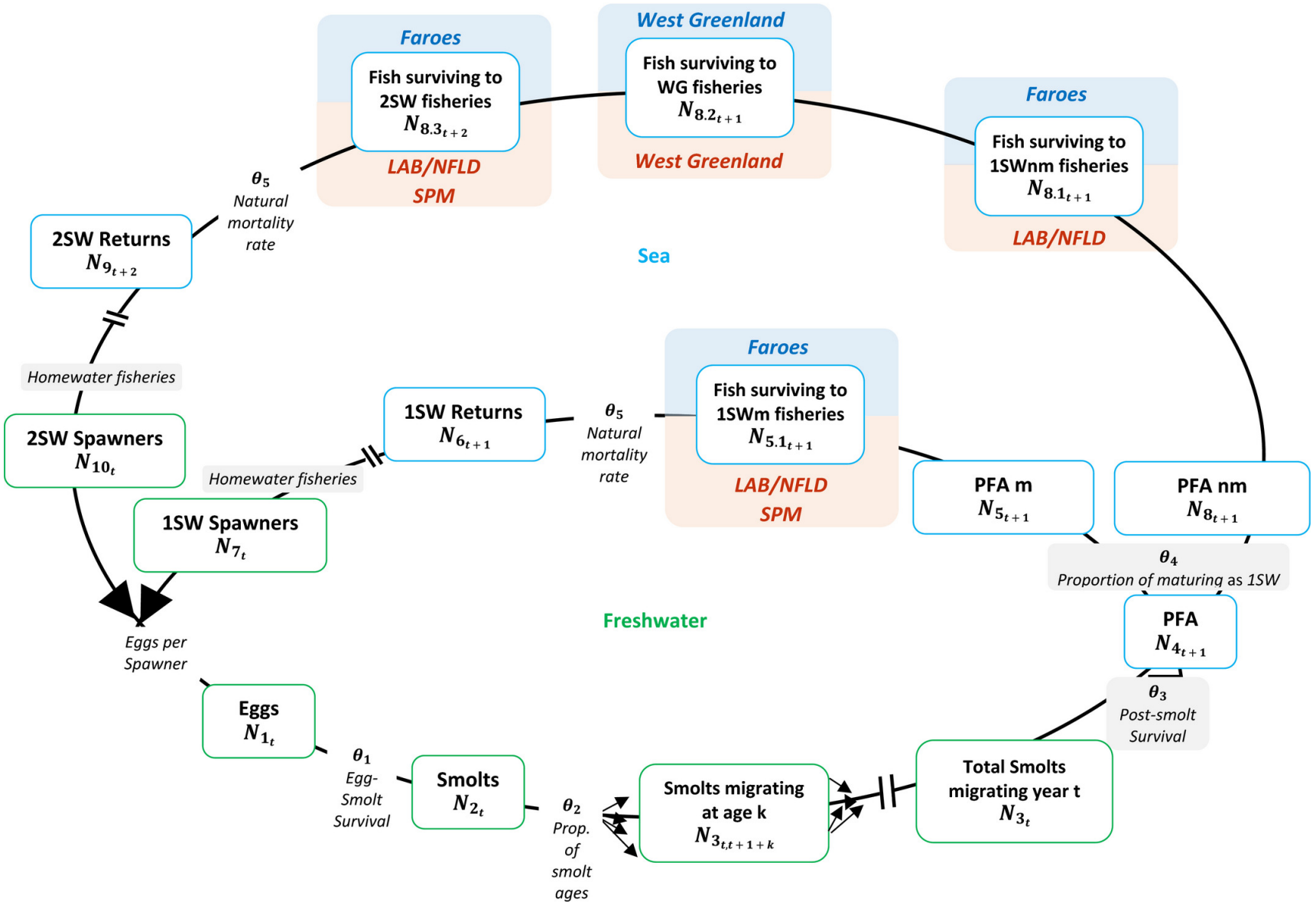
- A one-year pilot study to begin in 2022.
- Concurrently building an international consortium bid, spanning the three NASCO Commission areas, for a four-year science project (2023-2026) to develop the modelling and advice frameworks.

- 1. Further Development of Decision Support Tools for Managers
- 2. Alignment of Existing Salmon Stock Assessment and Management Models
- 3. **Ecosystems Based Approach to Salmon Management**
- 4.Developing an Atlantic, basin-wide, international funding bid

Background to ISMMI Proposal

- Improved advice and guidance to ICES and NASCO must be capable of tackling the urgent and fast moving challenges facing salmon populations for the remainder of this century
- ICES Atlantic salmon advice must become more closely aligned with an ecosystems-based approach. Stock assessment methodology for salmon will require: further model development, assessment of potential indicators, and benchmarking
- NASCO/ IASRB has actively supported the Likely Suspects Framework, NASCO /ICES advisory group (WGNAS) has supported the Life Cycle Model (LCM): How best to integrate and benefit from the results of these two programmes?
- ISMMI facilitates enhanced linkage and alignment between programmes, directly supporting the work of WGNAS and assisting future benchmarking of Atlantic salmon assessments.

The Life Cycle Model



WK SalModel

WGNAS-SalmoGlob ToolBox
A ToolBox for supporting Atlantic salmon stock assessment at the North Atlantic basin scale

7 January 2021, remote

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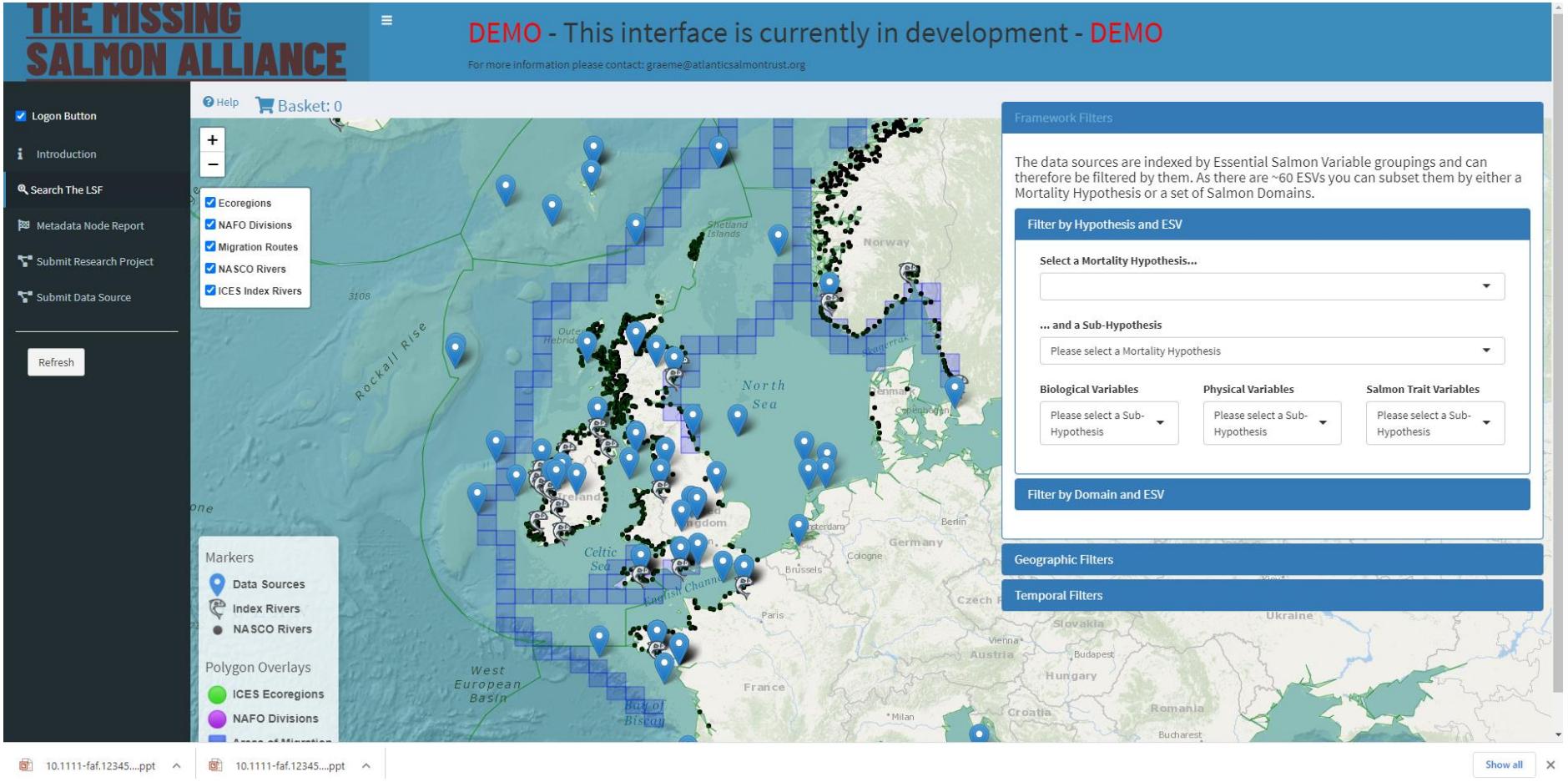
THE MISSING SALMON ALLIANCE
DEMO - This interface is currently in development - DEMO
For more information please contact: graeme@atlanticsalmontrust.org
Logon Button
Introduction
Search The LSF
Metadata Node Report
Submit Research Project
Submit Data Source
Refresh
Help
Basket: 0
Ecoregions
NAFO Divisions
Migration Routes
NASCO Rivers
ICES Index Rivers
Framework Filters
The data sources are indexed by Essential Salmon Variable groupings and can therefore be filtered by them. As there are ~60 ESVs you can subset them by either a Mortality Hypothesis or a set of Salmon Domains.
Filter by Hypothesis and ESV
Select a Mortality Hypothesis...
... and a Sub-Hypothesis
Please select a Mortality Hypothesis
Biological Variables
Physical Variables
Salmon Trait Variables
Please select a Sub-Hypothesis
Filter by Domain and ESV
Geographic Filters
Temporal Filters
Markers
Data Sources
Index Rivers
NASCO Rivers
Polygon Overlays
ICES Ecoregions
NAFO Divisions
Rockall Rise
North Sea
Celtic Sea
West European Basin
Norway
Germany
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Berlin
Cologne
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Paris
Vienna
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Budapest
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Slovakia
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Romania
Croatia
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Milan
10.1111-faf.12345....ppt
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Show all

1. Further Development of Decision Support Tools

Improved engagement with salmon management at all levels. Assist with translation of new model outputs better aligned to salmon management needs.

_____

Specific

To provide a User Interface (UI) Decision Support Tool

Measureable

Quantifiable use-data and metrics from engagement with UI Interface

Achievable

Phase 1 development of UI underway and technical expertise within network of proposers

Relevant

Salmon managers need better access to good management advice and forecasting tools

Time bound

A functional UI to provide decision support is deliverable within 1 year, with iterative revision and refinement necessary via continued management

Budget

£12K

- ”Ask the Managers”
- Understand the needs of the managers
- Align outputs from ISMMI with management needs
- Contribution to support participation in workshops and meetings

2. Alignment of Existing Salmon Stock Assessment and Management Models

Improve biological realism in existing models

Specific

Model evaluation and refinement to increase biological realism

Measureable

Documented revisions and evolution of modelling programmes

Achievable

Functional models exist and expertise within networks of proposers

Relevant

Recognised limitations in current modelling frameworks are addressed

Time bound

Development of specified elements within one year

Budget

£15k

- Fundamental to future work of WGNAS and alignment with ICES
- Ensure that output formally written up and is citable
- Contribution towards ensuring involvement of key players

3. Ecosystems Based Approach to Salmon Management

Progress towards the Development of an Ecosystems based approach that guides future modelling work

Specific

Development of IEA strategy and ecosystem indicators evaluation

Measureable

Conduct comparison between outputs from current stock assessment methods and developing IEA approach

Achievable

Multiple examples of developing IEA approach and expertise within ICES networks

Relevant

An Ecosystem-based management system which addresses current challenges and future requirements

Time bound

Initial IEA development will be to assemble and assess potential indicators in year 1

Budget

£35K

- Fundamental change - from a catch based management model to an ecosystem model
- No manual on how to do this!
- Manage the transition process: data access, data mobilisation, refinement of indicators.
- Contribution towards travel costs to technical workshops
- To increase participation at WKSalmon 3 workshop

4. Developing and Preparing an Atlantic, basin-wide, international funding bid

Develop a comprehensive bid to support ISMMI and the roll out of a 5-year strategic science plan for Atlantic salmon management

Specific

The production and submission of an international funding bid

Measureable

Bid development provides identifiable research consortium and content will provide transferable resources/models

Achievable

Previous track record of proposers. Key groups and individuals are well integrated within proposers' networks assisting bid development

Relevant

International collaboration behind an agreed vision is required to address the scale of challenges facing Atlantic salmon

Time bound

Bid development and submission completed within 1 year

Budget

£34K

Employ a project bid developer - contribution towards salary and travel costs for 12 months

Develop IASRB Plan ~ similar to SALSEA – shared between Parties and research partners

IASRB - Relevant TOR's

The Board will seek to advance an International Atlantic Salmon Research Programme **into the causes of marine mortality of Atlantic salmon and the opportunities to counteract this mortality** through the following activities:

- Identifying research needs
- Providing a forum for co-ordination of relevant research efforts by the Contracting Parties of NASCO
- Establishing terms and conditions for soliciting, evaluating, approving and funding relevant research projects
- Funding approved projects and reviewing results in relation to the objectives of the Programme
- Endorsing projects that are consistent with the objectives of the Programme

Board Request

We believe that the ISMMI Initiative, as detailed in the full proposal presented to the Board, fulfils the criteria agreed at the 2020 meeting of the Board for a successor to SALSEA Track

- *be problem focused, with a clearly defined internationally relevant question, which is not solely developed based on the newest technology available*
- *have clear SMART objectives*
- *have clear timelines*
- *have a clear budget*
- *be at the basin-scale*
- *have an identified owner / co-ordinator – (Phase 1, MSA; Phase 2 – 5 Year Project / IASRB Plan – research partners)*

Additionally, it should address issues such as:

- *data gaps*
- *climate change*
- *commonalities across the jurisdictions*
- *mechanisms for supporting new technologies*

*Funding sought - **£96k** for year 1 of the project*

*Matching the LSF budget for 2021 / 2022 of £200k, INRAE / L'Institut Agro Budget of £85 and the ECOBIO budget of £175k **– total £460k***

18% of the total 2021 / 2022 Budget