



Evidence Gathering in Support of Sustainable Scottish Inshore Fisheries

Work Package 8 Final Report

Establishing a Dedicated Information Resource Base for Scottish Inshore Fisheries – a Pilot Study

Project code: SFS008SIF



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TITLE	ESTABLISHING A DEDICATED INFORMATION RESOURCE BASE FOR SCOTTISH INSHORE FISHERIES – A PILOT STUDY
WP	8
CODE	SFS0008SIF
CONTRACTORS	POSEIDON AQUATIC RESOURCE MANAGEMENT LTD & ACOURA LTD
DATES	24TH JULY 2014 – 24TH JULY 2015
COST	£34,350
STAFF INPUTS	54 DAYS
OBJECTIVES	<p>To develop a searchable database of information on Scottish inshore fisheries that responds to the current and future information needs identified in the IFG management plans.</p> <ol style="list-style-type: none"> 1. Develop a searchable database of information for Scottish inshore fisheries 2. Populate the database to identify information shortfalls, updated information and additional information of relevance to the IFG management plans. 3. Explore the potential and develop a specification for a shared information platform
I.P. OUTPUT	SCOTTISH FISHERIES INFORMATION HUB HOSTED AT: http://services.acoura.com

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EXECUTIVE SUMMARY

This study was undertaken by Poseidon and Acoura for the Scottish Sustainable Inshore Fisheries (SSIF) Project and was completed from July 2014 to June 2015.

The objectives of the project were met as it delivered:

1. A searchable database of information for Scottish inshore fisheries
2. The database was populated to identify information shortfalls, updated information and additional information of relevance to the IFG management plans.
3. The potential and specification for a shared information platform.

This was achieved through a review of the IFG management plan review and information update, which resulted in a database of 233 records that was uploaded into a web-based information hub. In some respects the project objectives were exceeded, as this main output is a functional resource.

The web-based information hub is accessible at <http://services.acoura.com> using the following general log-in:

username/email: general@acoura.com
password: S3aFishWP8

A two-year licence from the service provider, Acoura, is in place as part of this project to enable users to work with this pilot information hub. After this expires, Marine Scotland may extend the license (under a separate commercial arrangement) to enable users to access the existing system or export the data for use elsewhere e.g. an alternate information hub.

Gaps in information were identified and mainly related to: a lack of information on stocks of key inshore species; dated socio-economic data and a lack of data on inshore fishing activity and key fisheries areas.

IFGs currently lack science capacity to enable them to interpret some of the information and the staff resources to update the plans and the accompanying information/data.

This project was over a period when the IFGs and their future operation were under review through a stock taking exercise. Therefore the future shape of IFGs in terms of number, staffing and operation was unknown to stakeholders.

The information hub could be further developed as the operation of Inshore Fisheries Groups is clarified. To maintain its usefulness, the information contained within the database should be regularly updated. To facilitate this the document library can be integrated with a task management system with:

- Expiry dates for documents
- Automatic email alerts
- Hub management dashboard for stakeholders and information owners

A number of the other Work Packages under the SSIF contribute to the knowledge base for Scottish Inshore Fisheries and these should be included in the database.

1 OBJECTIVES

1.1 PROJECT RATIONALE

The initial development of IFG management plans resulted in Marine Scotland Science providing bespoke reports to each IFG on the available scientific information on key fisheries. This arrangement is not viable in the long term, particularly with the broadening information needs described above. The work proposed in this project addresses the immediate needs of the IFGs by updating available information in a manner that minimises any additional burden on Marine Scotland Science.

Undertaking this exercise in a single contract creates economies of scale and a consistency of approach. It also recognises the variety of information, not only scientific information on stocks that is needed for sustainable management of fisheries.

A searchable database of Scottish fisheries information will enable IFGs to explore the information available for their specific fisheries and be better prepared for current and future information demands. It will also enable information providers such as Marine Scotland to prioritise information and identify where economies of scale might be achieved in that provision.

1.2 OBJECTIVES

The overall objective of this work is to develop a searchable database of information on Scottish inshore fisheries that responds to the current and future information needs identified in the IFG management plans.

Specific objectives are to:

1. Develop a searchable database of information for Scottish inshore fisheries
2. Populate the database to identify information shortfalls, updated information and additional information of relevance to the IFG management plans.
3. Explore the potential and develop a specification for a shared information platform

2 METHODS

The following sequential approach was adopted:

2.1 INFORMATION REVIEW

Establish the current information shortfalls associated with the identification of local fisheries management plans and the management process within inshore areas.

A database was developed identifying:

- Type of information (stock, environment, management, other);
- Scope (geographic range, scale, frequency);
- Robustness (based on an estimated confidence level)
- Source and ownership (with hyperlinks & contact details - for refresh alerts)
- Current updated cycle (if relevant)
- Recommended update cycle (if relevant)

The database provided a framework for the subsequent analysis of the current information. This was discussed and agreed with Seafood Scotland before being used for analysis.

The team then reviewed the plans of the six inshore areas (the five IFGs and the Orkney Management Group) and detailed this information in the database. This identified the current information sources used in the plans for existing & planned local fisheries.

Consultation was then undertaken with key IFG stakeholders, including Marine Scotland (Science and Policy) to explore information shortfalls and future needs.

2.2 INFORMATION UPDATE

The team updated existing information provisions within fisheries management plans with the most recently available data and expanded the range of information sources available to local fisheries managers.

A gap analysis was undertaken to establish the limitations to existing information and what additional information is missing in terms of essential and desirable information.

2.3 DEVELOP PILOT SCOTTISH INSHORE FISHERIES INFORMATION HUB

The project was tasked with evaluating the potential to establish a dedicated information resource for inshore fisheries allowing access both at local and national levels by all key stakeholders without encouraging over exploitation of inshore marine resources.

It did this by producing a web-based searchable, editable information resource. This was then shared with stakeholders and used as the basis for subsequent discussions.

2.4 FUTURE REQUIREMENTS

Discussions with stakeholders (including via webinars) sought to identify future requirements for access, presentation and interpretation of the range of information relevant to inshore fisheries management.

The information hub was developed and revised based on stakeholder feedback to reflect information needs. It goes beyond the 'strawman' proposed that would be used to inform subsequent specifications for inshore fisheries management and instead provides a functional resource that can be used and/or further developed as the needs for Scottish inshore fisheries management are further defined.

3 RESULTS

3.1 INFORMATION REVIEW

The primary output from the information review was an excel database detailing the information contained within the IFG management plans as per table 1 below.

Table 1 Scottish inshore fisheries information descriptors

Tier 1	Tier 2	Answer	Notes
Unique ID			Each entry to be allocated a unique number
Data	Title		Free text
	Description		Free text
	Author/Ownership		Free text
	Year		Free text
Type of information	Stock	y/n	Yes/No, can select more than one type
	Environmental	y/n	Yes/No, can select more than one type
	Management	y/n	Yes/No, can select more than one type
	Other	y/n	Yes/No, can select more than one type
Spatial scope	Geographic range	*Please select*	Drop down list
	Nautical range	*Please select*	Drop down list
	IFG	*Please select*	Drop down list
Update cycle	Frequency	*Please select*	Drop down list
Robustness	Data confidence	*Please select*	Drop down list. High: independently verifiable, peer reviewed, externally reviewed etc; Medium: non peer reviewed ; Low: self reporting, anecdotal
Confidentiality		*Please select*	Drop down list. Will allow option for confidential data to be visible only by users with relevant permissions
Species		*Please select*	Drop down list
File and contacts	Source		Link to website/hyperlink
	File name		Link to actual file (enter file name)
	Contact		Name of contact person
	Contact details		Contact details - email or phone

A review of Marine Scotland Science data and the six IFG management plans resulted in 233 data and information records being listed and described as per table 1. Shetland and Orkney were non-IFG areas included in the information review.

The database is accessible at <http://services.acoura.com> using the following general log-in:

username/email: general@acoura.com
password: S3aFishWP8



3.2 INFORMATION GAPS

Following the detailing of information, 29 data gaps were identified. These are listed in table 2 below.

The gaps in information mainly relate to:

- Stocks in certain fisheries not assessed;
- Socio-economic data lacking or dated;
- Locational data missing/ key fishing areas not identified.

This final area of missing data, inshore fishing activity, is being addressed by WP1 under the Scottish Sustainable Inshore Fisheries (SSIF) Project. WP2 is expected to contribute to biological information on key inshore fisheries.

Table 2 Information gaps identified

IFG	MP page	Data gap identified
All Scotland		Marine Spatial Plans e.g., to Identify potential activities (i.e. renewables, energy infrastructure, commercial activities etc.) restricting access to fishing grounds for defined fishing techniques and seek to establish the long term significance and environmental impact of the restricting activity
All Scotland		Need update to the Scottish Coastal Socio-economic Scoping Study (2002)
All IFG's		Identification of fishing locations, effort and catch to establish a baseline of information for key commercial fisheries via local reporting
All IFG's		Identification of fishing locations, effort and catch to establish a baseline of information for key commercial fisheries via local reporting
All IFG's		All figures and tables to have data sources identified
All IFG's		Additional socio-economic data on community dependencies upon fishing (see North West MP, p 15
East Coast	29	Annual assessment for razor fish
East Coast	22	No catch or landings per unit effort data collected for the East Coast lobster fishery assessment area
East Coast	24	Regular sampling of creel caught landings throughout the ECIFG area and the collection of fishing effort (CPUE/LPUE) data for the creel fishery
East Coast		Management plan lacks information on coastline and its fisheries between Rattray Head and the North Esk River confluence with the sea
Outer Hebrides	54	Crawfish - status unknown
Outer Hebrides	54	Brown shrimp - not assessed
Outer Hebrides	54	Squid - not assessed
Outer Hebrides	App 4	Scottish Industry Science Partnership (SISP) research proposal on: The effects of mesh size on catch composition in the Nephrops creel fishery
Moray Firth and North Coast	App. D	Further manipulation of Marine Scotland raw data e.g., to include ICES rectangle calculations
North West	20	Economic impact of key commercial fisheries in the NW Scotland
North West	21, 35	Information on fishing activity, the areas which are important to the <10m (inshore) fleet, & the seasonal and spatial distribution of fishing effort
North West	26	Data on local stock status and creel fisheries
North West	26	Economic impact of technical measures for different fisheries e.g., Nephrops, lobster
North West	27	Survival rates of returned Nephrops
North West	30	Length frequency distribution of landed and discarded lobster
North West	32	Information on scallop fishing mortality and relation to recruitment
South West	T. 8	Data-gathering to establish geographical extent of potential fishery and stock levels (hand-gathering of cockles, mussels, winkle, oysters, scallops, razors, otter shells)
South West	56	Regular sampling of creel caught landings throughout the SWIFG area and the collection of fishing effort (CPUE/LPUE) data for the creel fishery
South West	56	Data-gathering to establish geographical extent of potential fishery and stock levels (creel fisheries for Paleamon prawns, brown shrimp)
South West	57	Data-gathering to establish geographical extent of potential fishery and stock levels (herring fishery)
South West		Bycatch and catch composition data of squid and crawfish fisheries
South West		Catch and sample data, population modelling, economic impacts of wrasse creel fisheries

3.3 SCOTTISH INSHORE FISHERIES INFORMATION HUB

The information hub is accessed via: <http://services.acoura.com> using the following general log-in:

username/email: general@acoura.com

password: S3aFishWP8

It consists of two elements: the information hub presenting the database from the data review (see section 3.1 above) and a searchable resource, 'Search Literature'.

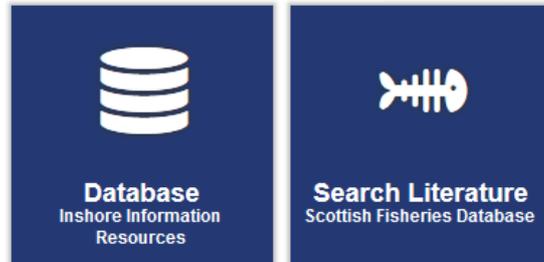
The database has the following features:

- User group authentication control.
- Simple data entry interface.
- Database field type flexibility.
- Document link referring / Cloud upload.
- Version control and modification logs.
- High-level security.



Fisheries Literature Database

[Home](#) » [Fisheries Literature Database](#)



Establishing a dedicated information resource base for Scottish Inshore Fisheries – a pilot study

The information hub has simple to use data entry screens for online database and remote updates by authorised collaborators:

The screenshot displays the 'Inshore Information Database' interface. On the left, a table lists various data sources with columns for Title, Ownership / Author, Year of information source, and Geographic Range. A blue arrow points from this table to a detailed view of a specific entry titled '35 and 40 mm Swedish grids in a Scottish Nephrops trawl fishery'. This view includes fields for Description, Ownership / Author (Drewery, J., Main, J., Edridge, A. & O'Neill, F.G.), Year of information source (2011), and various metadata checkboxes such as Stock, Environmental, Management, Other, Geographic Range, Nautical Range, IFG, Frequency, Data Confidence / Robustness, and Confidentiality. A dropdown menu for 'Geographic Range' is open, showing options: EU, IFG specific, Other, Scotland (selected), Site specific, and UK.

A simple search interface (with clickable map and free text search) for authorised users links to hosted documents and remote information sources (URLs):

The screenshot shows the 'Scottish Fisheries Literature Database' search interface. At the top left is the 'Acoura' logo. Below it, the text 'Scottish Fisheries Literature Database' is displayed. To the right of the text is a map of Scotland with colored regions. Below the map are logos for 'Poseidon Aquatic Resource Management Ltd' and 'The Scottish Government'. A search bar contains the text 'Search by Title, Description, Species...' and a 'Search' button. To the right of the search bar, it indicates '194 Result(s) Found'. Below the search bar is an 'Additional Filters' section with a dropdown arrow.

3.4 FUTURE REQUIREMENTS

The Information hub was used as the basis for discussions around future requirements. Log-ins were provided to IFG chairpersons and secretariats to enable them to explore and feed-back their views on the resource. Log-ins were also provided to Marine Scotland and SSIF project participants.

Webinars were hosted in March 2015 to explain the system and discuss functionality and future requirements.

The following summarises the feedback from this round of consultation:

Functionality

- Respondents generally positive about the resource
- Users were able to log-in and search using the system
- Alternative searches and free text search was suggested
- An updated IFG map including Shetland is to be used and was provided

Amendments to the information hub were made based on the above feedback.

In terms of future requirements the following was noted:

- This project was over a period when the IFGs and their future operation were under review through a stock taking exercise. Therefore the future shape of IFGs in terms of number, staffing and operation was unknown to stakeholders.
- IFGs currently lack science capacity to enable them to interpret some of the information.
- IFGs currently lack the staff resources to update the plans and the accompanying information/data.

The team notes that the information resource could be maintained centrally, by each IFG or a combination of the two. To remain useful it would need to be maintained and clear responsibilities for doing should be defined.

4 CONCLUSIONS

4.1 OBJECTIVES MET

The objectives of the project were met as it delivered:

1. A searchable database of information for Scottish inshore fisheries
2. The database was populated to identify information shortfalls, updated information and additional information of relevance to the IFG management plans.
3. The potential and specification for a shared information platform.

In some respects the objectives were exceeded, as the main output is a functional information resource providing the above elements.

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4.2 FUTURE WORK

- The information hub can be further developed as the operation of Inshore Fisheries Groups is clarified.
- To maintain it's usefulness, the information contained within the database should be regularly updated.
- To facilitate updates the document library can be integrated with a task management system with:
 - Expiry dates for documents
 - Automatic email alerts
 - Hub management dashboard for stakeholders and information owners
- A number of the other Work Packages under the SSIF contribute to the knowledge base for Scottish Inshore Fisheries and these should be included in the database.



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