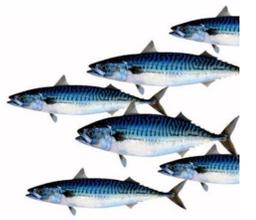




Evidence Gathering in Support of Sustainable Scottish Inshore Fisheries



European Fisheries Fund projects working in partnership with Scotland's fishermen and Inshore Fishing Groups

Introduction

- £1.4 Million from European Fisheries Fund
- Seven pilot research projects conducted over 12 – 16 months (commenced June 2014)
- Designed to directly engage, benefit and support the industry and Inshore Fishing Groups (IFGs)
- Intended to address key knowledge gaps within IFG Management Plans

1. Establishing the location of fishing activities

- Aim: Assess capability of using AIS* vessel monitoring systems (VMS) to enhance knowledge of important fishing locations
- 274 under 12m vessels to voluntarily trial AIS units around Scotland
- All inshore fishing sectors participating
- Data is being gathered on vessel location, course and speed
- AIS coverage around the coastline is being assessed and mapped, and fishermen are providing feedback on benefits of AIS units

* AIS data is free to view in the public domain, was originally designed for collision avoidance, and is transmitted via VHF.

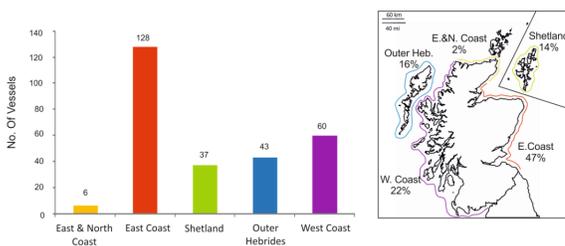


Fig. 1: (Left) Geographic distribution of participating vessels for Project 1 (AIS trial) (Project 1).

2. Monitoring fishery catch to assist scientific stock assessments & 3. Identifying catch composition using electronic technology

- Aim: Working with fishermen to develop stock-assessment methods for data-deficient species
- Eleven under 10m vessels taking part (9 creelers, 1 Nephrops trawler and 1 scallop dredger)
- Participating crew trained in self-sampling and stock assessment methods to allow for self-reporting of catch data
- Electronic Monitoring Systems (EMS) installed on all 11 vessels, with video analysed to gather data on effort, catch, discard rates and sex ratio for brown crab, lobster, velvet crab and scallops.
- Comparison of data obtained from both self-reporting and video
- Four vessels undertook extra trials to test: RFID tags for automatically collecting fishing effort data; Data storage tags for recording soak time of creels, temperature and depth; Bluetooth calipers for measuring length and sex of crab and lobster, and; Automated discard chutes for obtaining length and sex of discards using video analysis.

4. Pilot study to define the footprint and activities by identifying target fisheries, habitats and associated fish stocks

- Aim: Identify data required by IFGs and managers to deliver local fisheries management, as well as develop a *web-based Inshore-Fisheries Data Explorer*
- Pilot study areas – the Clyde and Moray Firth
- Data input from sister EFF Projects
- Users able to control visibility and opacity of data layers, and filter results by vessel (location, speed, dates) and catch (e.g. species caught)
- Users able to zoom in to see greater detail - data automatically updated to finer spatial scale (down to minimum 1 nautical mile)
- Data layers to link with the Marine Scotland National Marine Planning Interactive portal
- Potential users were invited to review the Data Explorer and provided feedback

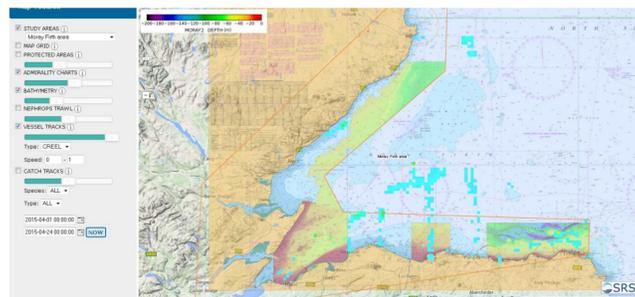


Fig 4: Pilot data visualisation tool. Screen shot showing blend of underlying Admiralty chart, new high resolution bathymetry and vessel location data. (Project 4)

5. Improving market intelligence and co-ordination

- Aim: Identify production and market constraints to maximising the value of local catch; and seek solutions to key issues
- Scoping of fisheries in Moray, Skye, Ullapool and South Uist; In-depth case study Isle of Skye
- Areas of focus:
 - Lack of locally caught seafood available
 - Obstacles to small-scale fishermen catching and selling fish
 - Building fisher resilience through diversification down the supply chain
 - Finding methods for small-scale producers to obtain higher prices from large volume distributors

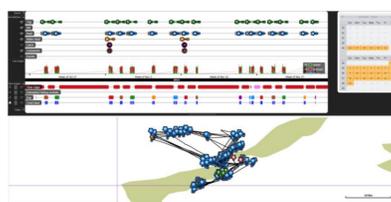


Fig. 2: Data from Electronic Monitoring Systems, displaying date, time and location of fishing trips and gear hauls (Project 2&3)



Fig. 3: Still image from EM system video footage showing crab catch (Project 2&3)



Fig 7: Assessing how size selectivity can influence stocks and markets (Project 6) (Left) Sorting creel caught prawns (Nephrops), (Right) placing prawns in size class tubes.

6. Integrating stock management with market opportunities

- Aim: Explore whether inshore fishermen can influence stock strength, and thus future harvests and earnings by increasing the landing size of catches according to market demand (i.e. establishing a Minimum Market Landing Size)
- Focus species: *Nephrops* (creel and trawl caught) and velvet crab
- Case study areas: Skye and SW Ross (Portree District) *Nephrops* fleet; S. Uist and Barra velvet crab; Burghead *Nephrops* trawling
- Economic profiling and stock-modelling performed at varying levels of detail
- Assessment of how changes in gear and discard behaviour may influence catch size and composition
- Understanding markets, i.e. prices and price trends for different sizes and products



Fig. 5: Oyster farmer who sells locally-caught fresh, processed and cooked products from fishermen, Isle of Skye Oyster Shed (Project 5)

7. A dedicated information resource base for Scottish inshore fisheries

- Aim: To develop and populate an information database for Scottish inshore fisheries (akin to an online library) containing references to all information sources and data utilised in the six IFGs management plans
- The database is fully searchable, and allows users to explore what information/data exists for each IFG
- This project is served a secondary function by identifying data gaps highlighted through the development of database; some of which are being filled by the other EFF projects.
- Potential end users were invited to test the database and provided feedback



Fig. 7: Information Database developed for Scottish Inshore Fisheries (Project 7)



Project Freephone:
0800 043 3474

Project Manager (for general enquiries): Dr John Thompson, MASTS Project Manager, jbt5@st-andrews.ac.uk

Project Facilitator
Dr Kyla Orr
T 01599 – 544 739
M 07502 – 329 058
E kylaorr@gmail.com

Project Facilitator
Ali McKnight, MCIEEM
T 01540 – 662 083
M 07713 – 333 166
E alimcknight@agroecosystems.co.uk

