How can we monitor inshore fishing activity?

Marine Theme Objective: Economic and Social Research in the Marine Environment

What's the problem?

Historically fishermen have had unrestricted access to the seas but as other activities stake a claim and formal spatial management planning becomes a reality, it is critical that fishermen record where and when they fish. Such information will help managers to better understand fishing practices and ensure that their stake in the planning process is appropriately represented. Also by monitoring fishing activity fishermen will be able to demonstrate that their activities can coexist with the many competing activities in the marine environment. Vessel Monitoring Systems (VMS) have been employed on the over 15 metre fleet for many years now, however the activities of a large number of under 15 metre vessels have never been monitored and thus, are poorly understood. To apply the standard VMS to inshore vessels is not straight forward due to the cost and need for frequent records so there is clearly a need for a low cost option for inshore fisheries, moreover a system which will add value to fishing business as well as regulators and managers.

What are the aims of the project?

1. To bring together all interested parties and stakeholders to ensure that if successful the technology will integrate will all existing and future marine information systems.

2. To develop a multi-user on line data review system allowing various levels of secure access in a user friendly format.

3. To develop a sensor system to detect and record when a vessel is fishing.

4. To ensure that the device is tamperproof to an agreed standard.

5. To develop a system to allow fishermen to collect data on physical parameters whilst fishing, such as gear depth, temperature, salinity, pH etc. Initially this data will be integrated with the positional data recorded by the VMS and held on a database that can be remotely accessed by shore based users.

6. To develop a data input facility to the system allowing users to record additional data of interest such as environmental reporting or catch records.

Figure 1: A vessel monitoring device fitted to a fishing vessel (Seafish).

Which policy areas will the research inform?

This work will support the design and enforcement of a network of Marine Protected Areas required to meet international and national obligations and commitments (e.g. Marine Strategy Framework Directive and the Marine and Coastal Access Act), and equivalent measures under Scottish legislation. The information will also inform ICES stock assessments, discards policy, the CFP reform process, Marine Spatial Planning (e.g. licensing), and the development of Inshore Fisheries and Conservation Authorities (IFCA's).

What are the results from the project and how will they be used?

Seafish will deliver this project, using a large network of interested parties and technology providers who will be critical to the ultimate success of the project.

A steering group will be established and an extensive external communication network will be formed. The steering group will meet every quarter and regular e-mail updates will be provided to those on the communication network. The following organisations have agreed to sit on the steering group: DEFRA, Devon Sea fisheries Committee, CEFAS, SWIFA, UK MPA Coalition Group, MFA / MMO, Natural England, MarLIN, World Wildlife Fund and Seafish.

The role of the steering group will be to assist the progress of the project. In particular the steering group will be tasked with ensuring that the project integrates with other work. To achieve this, the project will need to be widely communicated and the steering group will hold responsibility for the communication plan. Finally the SG will be tasked with drawing up a template for the ownership and management of data collected in the future.

A clear selection protocol will be produced, against which vessels will be selected in the event that more than 30 vessels come forward. As an incentive, the participating vessels will take ownership of the equipment once the project finishes and a further 12 months transmission costs will be covered. Access to the data will be strictly controlled through web based data plotting software. Users will have bespoke privileges accessed via a secure login.

The innovative aspect of this project will be the development of additional technologies to integrate with the standard VMS system. This development will be undertaken by the project team and in conjunction with the technology suppliers and span the full 12 month data collection period of the project. For this purpose 5 vessels will be selected (following the protocol). The technology providers will also be tasked with providing a secure and user-friendly web interface and this will also develop through the life of the project.

The project team will produce a report in July 2011 following the 12 month data collection phase. This report will cover the scientific details but will also include a chapter on the progress made by the steering group and the integration of the project with other marine information systems. It is worth noting that access will also be granted to interested and authorised parties to view the technology first hand on the vessels.
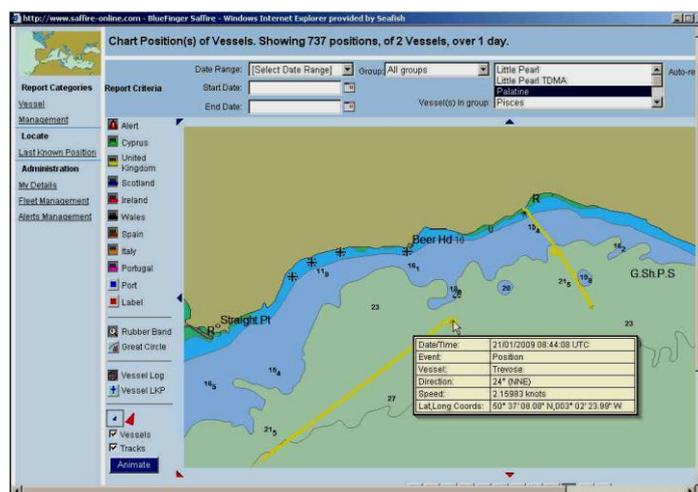

Figure 2: A typical plot of inshore vessel tracks (Seafish)

Where can I find further information about this and related research?

For more information, please contact Tom Rossiter at Seafish: t_rossiter@seafish.co.uk. Regular updates will provided to interested parties via e-mail. To subscribe, to this service please contact r_caslake@seafish.co.uk. Regular reports will also be posted at the following location http://tiny.cc/Smd7Y

Alternatively, please contact Dr Leila Fonseca within the Marine and Fisheries Science Unit at Defra, Nobel House, London.

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