



WP1. 1. Establishing the location of fishing activities within Scottish inshore areas

Start date of project: 30th June 2014

End date of project: 30th September 2015



Overview:

The key objective of this project was to assess the capability of using Automatic Identification System (AIS) technology to improve the knowledge base of important fishing locations, and gain a better understanding of AIS coverage around the coast of Scotland. The willingness of the fishing industry to accept AIS onto their vessels was also assessed.

AIS utilises GPS tracking and communicates vessel location, course and speed over a dedicated VHF safety channel. AIS data is received by a range of coastal base stations (within line-of-sight) and mostly is free to view in the public domain (for example on websites like www.marinetraffic.com). AIS transmissions are also picked up by AIS receivers aboard other vessels (ship-to-ship communication), with the principal function of collision avoidance and safety.

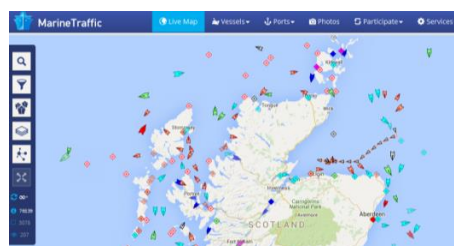
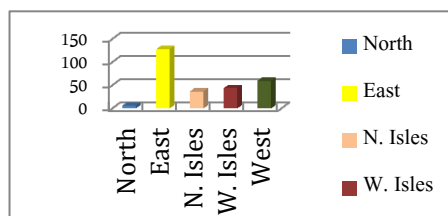
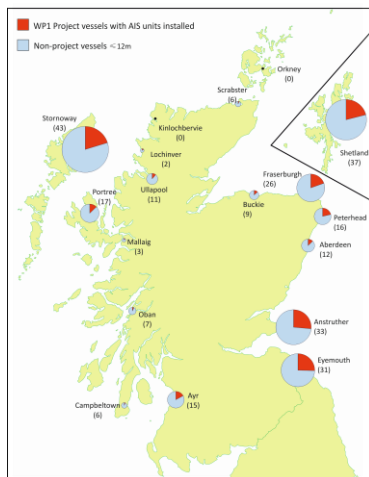
The project invited vessels under 12m in length from all inshore fishing sectors to take part by volunteering to have AIS transponders on board their vessels. Vesper Marine XB-8000 AIS transponders were installed on participating vessels free of charge. After completion of the project the transponders became the property of the fishermen who hopefully will continue to see the benefits and use to their advantage.

Vessel recruitment and installation of AIS units

Vessel recruitment took place from August 2014 to June 2015 which included more than 30 local meetings to inform fishermen about the project opportunity. Promotional material was also distributed through IFGs, Fisheries Officers, Harbour Masters, adverts in local newspapers and online. A dedicated Freephone project help-line was also made available. In total 384 expressions of interest were received. Installation of AIS units took place from June to September 2015, and AIS data will continue to be collected until end December 2015. A total of **274 AIS units have been installed, representing 18% of all <12m fishing vessels in Scotland.**

Vessel distribution

The majority of project vessels operate on the East coast of Scotland (47%), followed by the West coast (22%), Outer Hebrides (16%), Shetland (14%) and North Coast (including far North-east) (2%). The largest number of project vessels (grouped by Fisheries Office districts) are based in the districts of Stornoway followed by Shetland, Anstruther, Eyemouth and Fraserburgh. On the West coast there are a several areas where few or no vessels volunteered, and these include the administrative areas of Campbeltown, Mallaig and Oban, Lochinver and Kinlochberrie.



Left: Number of project vessels with AIS units installed by administrative district (pie charts are scaled relative to the number of project vessels). Top Right: Number of project vessels in each coastal area. Bottom Right: Example of live AIS data viewable on Marine Traffic website

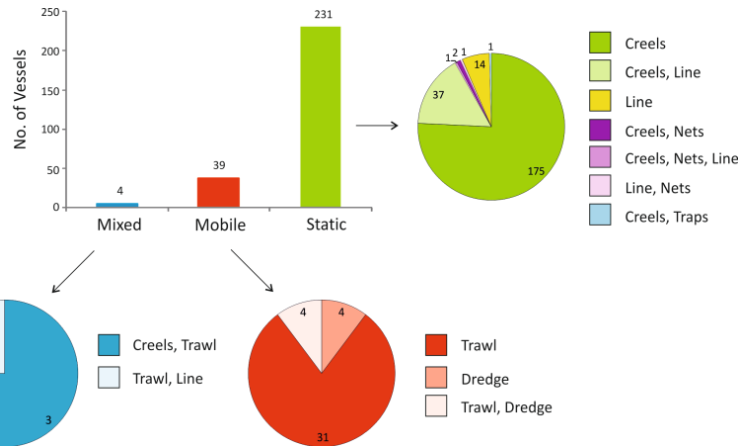


SEAFISH INSHORE FISHERIES PROJECT

Project vessels by fishing method:

The project vessels are from a diversity of inshore fishing sectors:

- The majority are static gear operators (231 in total, or 84%), that predominantly fish using creels (175 vessels), although some use a mixture of both creels and line (37 vessels) or exclusively fish using line (14 vessels).
- Mobile gear operators, which fish using bottom trawls and/or dredges, comprise 14% of the project vessels (38 in total), of which 31 are trawlers that target Nephrops. Four scallop dredgers volunteered to have AIS units installed.
- None of the project volunteer vessels are scallop divers, mostly due to concerns relating to the public visibility of AIS vessels tracks, and associated competition for fishing grounds within the scallop industry. (Do we need the reason on this sentence?)



Above: Bar chart showing number of project vessels per fishing sector (mobile gear, static gear or mixed gear operators) and pie-charts showing types of gear used within each sector.

Contact details

All general enquiries about the project should be directed to the MASTS Project Manager – Dr John Thompson at: jbt5@st-andrews.ac.uk

More detailed inquiries with respect to individual work packages should be directed to the Project Facilitators:

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Fishermen's rationale for participating, perceived benefits and negatives of using AIS:

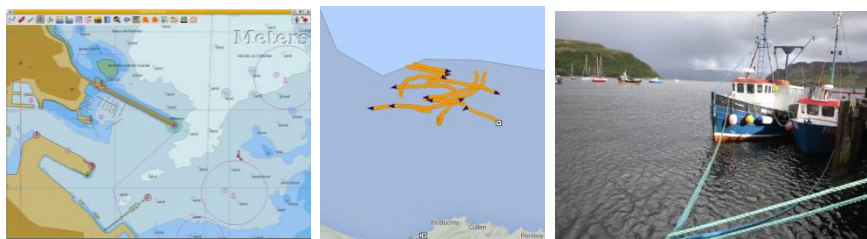
Under this project we have gained valuable feedback from the fishing community regarding the installation and use of AIS units, and gathering participants views and opinions will continue for several months.

The majority of vessels volunteered for this project in order to provide data on vessel location for fisheries management and/or for safety reasons. Most fishermen were interested in viewing both their own vessel tracks and those of other vessels (for safety). The main concerns that fishermen expressed regarding AIS units were that other fishermen could see where they operate (sharing valuable commercial information), or that the data gathered may be used against them in some way. More than half the participants also felt that AIS may become mandatory in the future.

Almost 90% of fishermen felt that reporting vessel activity through AIS can support fisheries management in some way, for example in marine spatial planning (by enabling fishermen to provide evidence on important fishing locations); to mitigate gear conflict; and/or to demonstrate 'responsible fishing practices' (such as within/around protected areas). However, many fishermen commented that AIS coverage and reception needs to be improved in certain locations (especially west coast) in order to obtain more accurate data for fisheries management.

Software for fishermen to view and store their vessel tracks

A significant number of fishermen expressed a desire to download and store their own vessel tracks for future use. As a result we have developed a method to assist fishermen to use a free piece of software, OpenCPN, which is able to connect to the Vesper Marine AIS unit via a personal computer or tablet. OpenCPN is capable of displaying real time AIS tracks and an optional plugin also allows the recording and playback of historic vessel tracks.



Fishermen with Vesper Marine AIS units installed can view and download tracks from both their own vessel and others using the free software 'OpenCPN'