

The North Sea Regional Advisory Council



NSRAC

Spatial Planning Working Group Steering Group; Pilot Study of Key Fishing Areas August 18th, Schiphol, the Netherlands

Chair: Euan Dunn

Rapporteur: A D Hawkins

Final Draft

In attendance:

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Purpose of meeting:

At the NSRAC Spatial Planning Working Group Meeting in London, May 12 2005, it was agreed: *'to set up a small steering group... to formulate a proposal for a pilot study on the provision of data, including VMS data and electronic logbooks, to identify priority areas of fishery interest and to support and protect fisheries interests in the context of spatial planning'*.

The rationale behind this proposal arose from the strong perception by the fishing industry that their interests are increasingly threatened by the congestion of other human activity in the North Sea. Some of these activities may remove access to areas where fishing takes place. Others may impinge upon fish nursery or spawning grounds or affect fish stocks adversely. There are also fears that developing plans for marine spatial planning in some European Member States may disadvantage fishers by zoning areas for different activities in a way which will exclude fishers from their fishing grounds. Mapping key areas for fishing effort and sensitivity (e.g. fish nursery grounds) may help to alleviate these pressures which are developing within the marine spatial planning process.

Such maps could be integrated with those on, for example, MPA networks, oil and gas installations, aggregate extraction, developments for renewable energy, etc to help resolve conflict over the use of space, and more generally to give a higher profile to use of the North Sea for capture fisheries.

The NSRAC Executive Committee Meeting at Hamburg on June 28, 2005 endorsed the proposal for a mapping project and confirmed that a small steering group should be established to take the proposal forward.

The Steering Group met on the afternoon of 18th August 2005 to consider the proposal. Presentations and papers for the meeting are provided on www.nsrac.org

After discussion the Steering Group agreed that the best way to proceed, because of the complexity of the proposal, would be to prepare a project description for subsequent funding of a scoping study to be carried out by a consultant or research institute. The scoping study would develop a full international project proposal which would then be submitted for funding to an appropriate agency.

Project Description:

Overall Scope and Purpose

The project being proposed arises from the view that it is better for stakeholders to resolve spatial issues in advance of their occurring by engaging in a system of spatial planning. A pilot study is required to identify priority areas of fishery interest based on information derived from VMS data and electronic logbooks as well as information from scientists and fishers. The purpose is twofold; to ensure that fishing is integrated with other uses of the sea, and to provide support and protection for fisheries interests in the future. The information assembled will also enable the NSRAC and fishers' organisations to provide advice on spatial issues and will facilitate forward planning.

Much of the information to be collected is 'owned' by fishermen themselves and is sensitive in nature. To ensure cooperation and buy-in from fishers it is considered that the exercise should be fisher-led, but with very strong scientific and technical back-up. Access to the mapped information, its subsequent ownership, and the use to which it will be put needs to be clearly specified in advance.

A number of similar studies are already being planned, albeit for different purposes. The Scientific, Technical & Economic Committee on Fisheries (STECF) of the EU has been asked to gather spatial information on fisheries on the scale of ICES statistical squares to aid evaluation of the cod recovery plan. Both the Scottish and Danish fishermen's federations are carrying out spatial studies of their own. The Dutch industry has already undertaken such work. It will be important to ensure cooperation and a lack of duplication between these different studies. However, the character of data collection differs with the purpose for which it is being collected. In general different kinds of information are required for spatial planning and fishery management purposes respectively.

The Marine Spatial Planning Project for the Irish Sea, funded by DEFRA UK and described to the Steering Group by Steve Hull, has pioneered the collection of spatial information for a regional sea and has highlighted many of the issues. The lessons learned from that project will be extremely valuable for the development of this proposal.

Geographical Scope

Two options varying in geographical scope are to be considered:

- 1) *The remit is the whole of the North Sea.* While this option does not have the merit of a 'pilot' study, it is arguable that to achieve comprehensive mapping it is important to cover the entire North Sea. This will require the cooperation and provision of data from all Member States and Norway, and their fishing sectors. The international aspect is potentially important given that the exercise should be fisher-led with scientific expertise subsequently translating that knowledge.
- 2) *The remit is a sub-area of the North Sea, e.g. the southern North Sea.* The latter has the obvious merit of serving as a pilot which can be scaled up. It may also be desirable to begin with a region for which adequate VMS data is available. Such a study would still engage a number of Member States and could not therefore be perceived as partisan.

It is agreed that the first of these two options is the preferred one. Coverage of a large area at a coarse level is better than intense coverage of a small area. Inclusion of Norway would be preferred, since their waters cover one third of the North Sea.

Data to be included

Essentially, information is required on:

- where fish live
- where they spawn
- where they feed and grow

where fishing occurs
where management measures are applied
which areas are critical to the fish and fisheries
where conflicts of interest exist

Thus, information is required on the spatial distribution of fish and fishing activities in the North Sea. However, because many fish are mobile their distribution and hence fishing activities change from year to year, data in time as well as space is important. It is rarely possible to conclude that there are some hard-edged areas where no fishing ever takes place.

Because the information is likely to be used to support the defence of fishing activities, in legal arguments, it is essential that there should be clear audit trails. It must be evident where information comes from and how it is derived.

In general the North Sea RAC is interested in information on fisheries for the main demersal species, with emphasis upon cod, haddock, plaice, sole, whiting, saithe, monkfish and *Nephrops*. The Pelagic RAC may have an interest in including herring and mackerel.

The behaviour of different fleet segments, utilising different fishing methods, as well as the behaviour of different nationalities, is important

There is a need to mix quantitative and qualitative data. The data sources include:

VMS data

A satellite-based Vessel Monitoring System (VMS) is used for fisheries control and enforcement. The VMS provides information on the position and identity of EU fishing vessels on a much finer scale than is available from other sources. The availability use and deficiencies of VMS data are reviewed in the paper by Joe Horwood & Simon Jennings.

From 30 June 1998, the VMS was introduced for vessels exceeding 24 m overall length that operated on the high seas, or vessels that caught fish for reduction to meal and oil. It was extended to all EU vessels exceeding 24 m overall length from 1 Jan 2000, with the long-term intention of increasing coverage of smaller vessels.

Currently, every EU fishing vessel over 15 m in length is tracked by the VMS, which records the position of the vessel at a regular time interval. Positional information is then transmitted to the Fisheries Monitoring Centre of the flag state which retransmits it to the relevant coastal state (for activities within their waters). By 1 January 2006, the system should also record and transmit speed and course. The time interval between transmissions depends on the Member State and location of the vessel, and on the system used, but it is normally between one and two hours.

Since the VMS data describe the positions of individual vessels through time, VMS data provide a potentially valuable source information on spatial and temporal patterns of fishing activity at all scales. It is especially able to provide information on a finer scale than ICES statistical squares. However, VMS data do not indicate whether a vessel is

fishing when its position is reported. Algorithms are being developed to derive this information.

Currently there is no requirement for fishing vessels less than 15m in length to provide VMS data. With decommissioning and a flight to smaller vessels a large sector of the fleet falls into this category, and VMS data are not available for these vessels.

VMS data can be used for three principal purposes.

- To assess fishing activity in relation to control activities such as the distribution of regulatory areas (e.g. closed areas, fishing limits, cold water coral reefs).
- To describe the fishing grounds used by individual vessels and fleets and the frequency with which they are used.
- To support scientific research on the interactions between fisheries and the environment.

For the fishing industry, VMS data provide an important record of the use of fishing grounds, and the relative importance of those grounds to different fleets, and might be used to establish a 'track record' in relation to marine spatial planning.

There is a wider use for VMS data for fishery management purposes. However, its use so far has been limited by data access issues.

Coastal states have access to all records of fishing activity by EU vessels in their waters and to records for their own flagged vessels in other EU and international waters. This means that individual states cannot compile complete records of fishing activity in areas where they may have fishing interests. Thus, international co-operation will be required to compile truly 'international' data sets.

The absence of international data sets hampers the assessment of interactions among fleets and between fisheries and the environment. At present the VMS data from the fleets of some EU Member States are freely available to researchers on the basis of some form of permission from the vessel owner, while data from other Member States are not. These differences appear to reflect legal and administrative differences between the countries around the North Sea.

For scientists to fully benefit from VMS data, position and time data need be linked to data on the size and power of the vessels as well as the gears used. For some studies, such as those of fleet behaviour, it is desirable to know the identity of individual vessels, but mechanisms for anonymous reporting of processed data need to be agreed.

Statistical Data on Fishing

EC Council Regulation 1543/2000 (the Data Regulation) sets out the requirements on Member States to collect and manage a range of statistical data necessary for the evaluation of fisheries and fishing industries across the European Union.

The implementation of the Data Regulation in the UK is described in the paper by John Sweeney and Kevin Williamson.

The Regulation obliges each Member State to collect statistical data on the following themes:

1. Fishing effort, including the following.
 - (i) Number of vessels in the national fishing fleet.
 - (ii) Gross tonnage of these vessels.
 - (iii) Engine power (kW) of these vessels.
 - (iv) Vessel age.
 - (v) Fishing gear used.
 - (vi) Time spent at sea.
2. The monitoring of commercial fisheries, including the following.
 - (i) The quantity (tonnes) of landings and discards of the species specified in Annex II of the Regulation.
 - (ii) Biological sampling to determine catch composition in terms of maturity, growth, sex and fecundity – both of landed catches (fisheries dependent data) and as part of scientific surveys conducted at sea (fisheries independent data)
3. The monitoring of the prices of first sale fish for species in Annex II of the Regulation.
4. The economic monitoring of fishing enterprises and the processing industry through data on:
 - (i) production (quantity and value)
 - (ii) the number of enterprises and jobs
 - (iii) changes in production costs

The scale of collection of fisheries data is currently quite coarse. Spatially, it is collated on the basis of ICES rectangles and no attempt has been made to collate it on the finer scale that would be useful for spatial planning purposes.

Some key data are not available. Most of the information that can be recorded on log sheets, landing declarations and sales notes is mandatory but a few pieces of information such as hours fished, number of fishing operations (hauls), gear dimensions and quantity of discards per voyage, are optional. These logbook data items are usually considered unreliable because of known and/or unknown biases related to their optional nature. Thus, the level of detail on landings and effort data necessary for some scientific work (including that proposed in this project) is not covered by the Regulation. There are important gaps in the data available to Member States which will limit any conclusions that can be drawn.

There are differences between Member States on freedom of access to data held by government. It may be necessary for data to be sought in an anonymous or aggregated form.

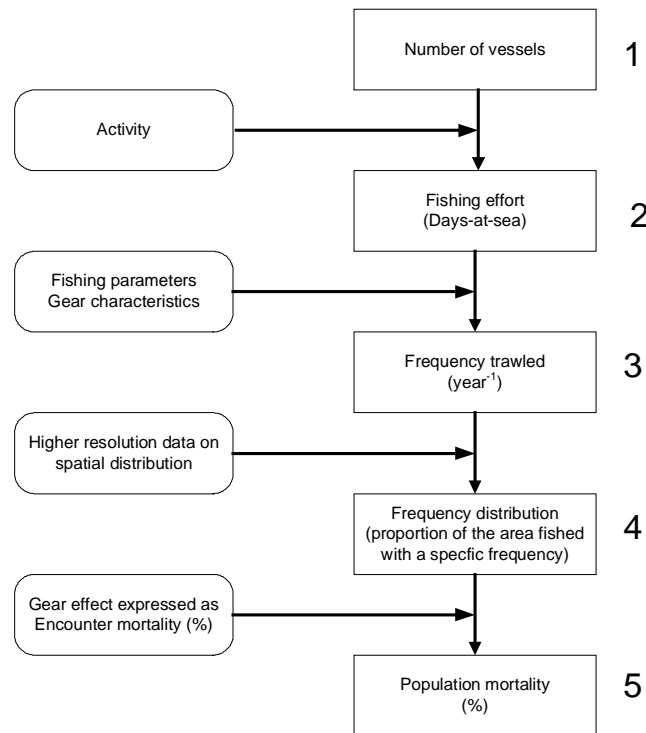
Other Existing Recorded Information

Information collected from VMS and other automated sources needs to be supplemented by additional information already held by scientists, economists and other experts. One example is the collection of data on discards recorded by scientific observers on board fishing vessels.

Data from electronic log books

A number of existing projects are examining the utility of electronic log books, where fishers record data on their activities alongside detailed positional information. Such electronic log books can provide exceedingly valuable information by linking catches with positional and other data.

A presentation by Gerjan Piet of RIVO emphasised the value of electronic log book data to scientists interested in quantifying fishing mortality and assessing the impact of management measures.



The usefulness of such data cannot be doubted. However, the provision of the log books together with the collation of the data makes such work expensive. Moreover, as there may be discrepancies between the catches recorded in log books and the actual catches the data are extremely sensitive both for fishers and the regulatory authorities. Until these issues are resolved through the research projects currently underway the use of electronic log books may be limited.

It is considered unlikely that information at this level of detail is required for the mapping of fisheries activities, although it is very important for fisheries management.

Fishers' Knowledge

It is increasingly recognised that fishers gather a great deal of information for their own purposes which as well as underpinning their fishing activities can also be extremely valuable to others. In addition to seeking information held by scientists and other experts it will be essential to gather information from fishers on a wide range of subjects including the distribution of fish, their movements in space and time, spawning sites, nursery areas as well as information on fishing activities. Collecting fishers' knowledge is a specialised task, and is not simply a matter of asking questions from a scientific perspective. Much of the information may not fit scientific paradigms. Moreover, not all fishers will be keen to share their information with others.

Initiatives are coming forward from fishers for the temporary closure of areas where juvenile densities are high and there is a risk of discards. Such initiatives have emphasised the temporary nature of such closures, the need for fishers to provide the information on which the closures are to be based, and the need for regulatory authorities to be more flexible and rapid in their response to requests for closures. A different kind of information is required for this purpose and the data requirements should be considered as part of the remit for this project proposal.

The collection of information from fishers is especially sensitive and requires prior discussion and consultation with fishers' organisations. In England & Wales, information for other purposes has been collected by an experienced facilitator, able to communicate well with fishers, meeting with them at the different ports

Other Expertise

The Irish Sea Marine Spatial Planning Project has highlighted the importance of utilising planning expertise in mapping spatial activities. In particular, there is a need to develop procedures for dealing with uncertainties in a planning context.

Allocating areas for a specific purpose, and denying their use for other commercial purposes carries a high opportunity cost. Any spatial mapping exercise will benefit from the participation of an economist.

Spatial and temporal fishing patterns are distorted by the regulatory framework, which is itself changing. The cod recovery plan has greatly influenced the areas which are fished. Account must be taken of the influences of regulation.

The way forward:

In the Steering Group, strong emphasis was placed on defining the purpose of a mapping project. Information collected and collated has to be matched to clear objectives. It was agreed that the main objective for the NSRAC is to assemble information on fish and fishing for spatial planning purposes, to enable fishers to engage with planners and other users of the sea. In this context it is broadly synthesised data

from a variety of sources that is required. The main aim is to describe the fishing grounds and the frequency with which they are used, recognising that the pattern of fishing changes with time. Defining critical areas for fish and fisheries is also a key function. It was agreed that the collection of this information needs to be done in an international context, as currently only limited information is available within each Member State.

It was agreed that this particular project is not being established to map data for fisheries management purposes – that is for STECF and other bodies to pursue in other contexts.

It was agreed that although much of the raw data required was already held by different bodies, saved in digital data storage systems, there is a need to expedite the access and use of this data. A variety of different types of data and data formats need to be addressed, and an essential feature of the project would be to compile an inventory of meta-data ('data about data'). In some cases there would be constraints on the release of these data and efforts would need to be made in advance to facilitate the release of data to which access is currently denied. Subsequently, these data would need to be assembled in the form of generic information about the spatial distribution of fish and fishing activities, much of it in the form of layered maps. Institutes and fishers' organisations in different countries would need to be involved in assembling the information, using a common methodology. The NSRAC could be a focus for assembling these data for demersal fish and fisheries in the North Sea. However, the scale of the project is such that a prior scoping study will be necessary.

DEFRA has an allocation of funding within its science budget for assistance to RACs. The Steering Group agreed to seek funding for a scoping study to be carried out. That study would:

1. Prepare an inventory of the meta-data held by various sources which would be necessary for the project to proceed.
2. Determine whether access is currently available to the necessary data and where access is currently denied assess whether it might be obtained in the future if assurances are given.
3. Determine whether any new data has to be collected (although there should be a presumption against this).
4. Decide whether the project should be North Sea wide, or whether it should be conducted for a sub-region of the North Sea. This decision will be dependent largely on data availability.
5. Consider what activities would need to be undertaken, and the facilities and tools required to carry out the project and store and display the information.
6. Liaise with potential international partners in the project, both from scientific institutes and fishers' organisations to ascertain their willingness to take part, and the contribution each will be able to make. Draw up conventions on data sharing between the different parties. Consider by whom the information should be held.

7. Consider what restrictions might be placed on access to the information compiled.
8. Consider potential sources of funding
9. Compile a project application for submission.