JNCC
Joint Nature Conservation Committee

MAIA
Marine Protected Areas in the Atlantic Arc

A Review of the Approach and Best Practice for Development of Fisheries Measures Including Non-Regulatory Measures

Lessons Learned from the Haig Fras and Stanton Banks SCIs and Burrowed Mud Workshops

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1. Introduction

The MAIA Project: The Joint Nature Conservation Committee (JNCC)[1] has been involved in the Marine Protected Areas in the Atlantic Arc (MAIA)[2] Project since its inception in 2010. The project has now reached a milestone whereby the original programme outline has been achieved through meetings, workshops and conferences.

MAIA is an Interreg IVb project, part funded by the European Commission (EC), designed to bring together stakeholders from EU countries bordering the Atlantic in order to facilitate a more cohesive approach to Marine Protected Area (MPA) design and management throughout the region. Scientists, specialists and interested parties from the UK, France, Spain and Portugal have been working together to share and establish best practice for identification, implementation and management of MPAs from the Azores to the Shetland Islands.

The project was broken down into five work plans. These are WP1: partner participation; WP2: common monitoring strategies; WP3: management plans and measures; WP4: securing stakeholder support and WP5: project communication and dissemination. WP3 is the topic explored in this document focusing on the best practice for fisheries measures regarding MPAs in the aforementioned regions.

The key objectives of WP3 involved the development of a coherent, systematic framework for establishing MPA management plans for sites across the project region that will be widely supported; achieve the ecological MPA objectives and minimise the socio-economic costs of implementation.

Within MAIA, JNCC has collaborated with partners to organise three focussed workshops to discuss fisheries management measures related to two offshore Sites of Community Importance (SCI): Haig Fras and Stanton Banks, and a general look at fisheries measures for MPAs containing burrowed mud habitats. This report draws together the outcomes of these workshops to suggest best practice for fisheries management measures in these instances.

[1] JNCC is a statutory nature conservation body that advises the UK Government and devolved administrations on UK-wide and international nature conservation. JNCC has a specific remit in the development of conservation advice for UK's offshore marine environment; http://jncc.defra.gov.uk/

[2] Refer to www.maia-network.org for more information

2. The sites

Stanton Banks SCI is located to the south of the Outer Hebrides off the west coast of Scotland and Haig Fras SCI is located north-west of the Isles of Scilly in the Celtic Sea; both have been submitted to the European Commission through Natura 2000 processes for their bedrock reef communities. Mud habitats are also present in many areas of UK waters, hosting commercially valuable species such as bivalves and *Nephrops* (*Nephrops norvegicus*). The *Nephrops* fishery is important for the fishing industry and management measures may be required for Marine Protected Areas designated for mud features if they are to achieve possible conservation objectives.

Further information about Stanton Banks and Haig Fras SCIs can be found on the JNCC website at: http://jncc.defra.gov.uk/default.aspx?page=4534#assessments

3. The workshops

The three workshops were held at intervals throughout the project life, involving a range of stakeholders.

Stanton Banks SCI: 20 October 2011, Glasgow, UK
A total of 19 people attended the Stanton Banks SCI workshop including fishermen, representatives of the fishing industry as well as Marine Scotland, RSPB and the Department for Environment, Food and Rural Affairs (Defra).

The workshop began with a site overview of location and its conservation objectives, followed by a summary of fishing activity on the site. This was followed by presentations from the Scottish Fisherman's Federation (SFF) regarding the joint work undertaken with JNCC concerning site boundaries, and Marine Scotland offering possible fisheries management options for discussion.

Haig Fras SCI: 24 November 2011, Rennes, France
A total of 20 people attended the Haig Fras SCI workshop including representatives from Marine Scotland, the Marine Management Organisation (MMO), Defra, French Department of Marine Fisheries and Aquaculture, Comité National des Pêches Maritimes et des Elevages Marins (CNPMEM) and UK fishermen.

Presentations from Defra and JNCC gave an overview of the site including fishing activity, conservation objectives and its relation to the Greater Haig Fras recommended Marine Conservation Zone (rMCZ)[3].

Burrowed Mud Habitats: 2 August 2012, Glasgow, UK

[3] The Marine Conservation Zone (MCZ) Project was set up in 2008 and led by the Joint Nature Conservation Committee and Natural England to identify and recommend Marine Conservation Zones to Government. For more information, visit http://jncc.defra.gov.uk/page-2409

A total of 30 people attended the last of the workshops on burrowed mud habitat fisheries management measures, including representatives from Anglo-North Irish Fish Producers Organisation (ANIFPO), Agence des aires marines protégées (MAIA lead partner), Cefas, Natural England, Scottish Environment Protection Agency (SEPA) and various other fisheries organisations resulting in international participation across the MAIA stakeholders with an interest in mud habitats.

With no specific site under discussion, the aim was to develop potential management measures that may be appropriate for achieving conservation objectives for burrowed mud habitats, whilst taking into account fisheries activities in these regions and uncertainties regarding habitat sensitivity.

An overview of the biology of mud habitats was presented, followed by a look at fisheries and mud habitats including activity and impacts derived from the scientific literature. Participants were then divided into groups to discuss in more detail, what would comprise a favourable condition for the habitat and considerations for potential fisheries management tools relevant to the habitat.

4. Outcomes

Fisheries management measures were the primary discussion topic for the three workshops. The main aims were to discuss possible burrowed mud and Natura 2000 feature management measures already used or proposed throughout the MAIA project area and to come up with suggested best practice for current and future MPA fisheries management, taking the views and needs of all stakeholders as far as possible into account.

All workshops received good feedback from participants and resulted in suggestions for best practice in running future management workshops, how to go about using available data to establish the need for management measures, and what steps are needed to encourage and ensure compliance of the fishing industry with any measures put in place. Some feedback can be found in the Stakeholders and Marine Protected Areas report on the JNCC website.

Discussions were restricted by the relatively limited amount of data to answer some of the questions regarding gear impacts on designated features. This flagged up the importance of data collection, application of best available evidence and stakeholder input in order to make informed decisions that will form management measures best suited to all stakeholders in the proposed or current MPAs.

4.1 Summary of points from the Stanton Banks and Haig Fras SCI workshops

These workshops were focussed on the specifics of the respective sites and how measures might affect current and future activity. The presence of actual features to consider made the outcomes more specific than with the burrowed mud habitat workshop, which resulted in a broader overview of managing the habitat, rather than a spatial, substantial feature.

The primary management options discussed in these workshops included;

- No fishing
- No fishing except pelagic
- No fishing except pelagic and static demersal
- No additional management
- Zoned management
- A voluntary arrangement to restrict damaging fishing practices

- Prohibition of all fishing offers maximum protection to the site features and is the easiest option for compliance monitoring but would likely apply unnecessary restrictions from a biodiversity point of view.
- Prohibition of fishing with exception of pelagic will protect the feature, but may be more difficult to enforce.
- No fishing except pelagic and static demersal will reduce the abrasive pressures on the seabed feature but allow some fishing in comparison to prohibition, reducing socio-economic impacts.
- Structural features (e.g. some rocky reefs) prevent the use of some types of fishing gear (e.g. some bottom trawling) due to the risk of damage to that gear. These areas are unfishable for certain methods, reducing the need for further fisheries restrictions.
- Identification of management options that will allow some areas within the site to be closed to fisheries while other areas remain open to some or all gears, may take into account the wide variety of factors affecting any one site, but may be more difficult to negotiate and to enforce.
- If the feature itself prevents the most damaging fishing methods, a voluntary agreement could be considered in order to encourage fisheries in the area work responsibly.

Comments

- There is a need to fully understand the impacts of current and potential activity in order to apply a sound and fair management strategy, otherwise activities that do not impact the conservation objectives or have limited impact may be restricted unnecessarily.

- Both workshops considered that only management of mobile benthic gears was necessary, but further data is needed on the actual impacts of static demersal and pelagic fisheries on the features and supporting ecosystems.
- When little data is available, the measures should include socio-economic aspects to ensure any changes imposed do not cause unnecessary loss to current users without justifiable cause.
- Proper assessment of fishing activity from other countries is essential to ensure local fisheries are not restricted unfairly, particularly in the case of voluntary agreements.
- Monitoring of UK vessels could be achieved with Vessel Monitoring System (VMS) but for other member states, up to date information on fishing gear may not be available, which may result in unfair restrictions imposed due to data deficiencies.

Voluntary measures, if they are to be considered, must be robust and able to demonstrate that they can protect the sensitive features in the site. It was thought that the European Commission (EC) is unlikely to consider voluntary measures to be sufficient to provide certainty of protection. If used however, the North West Waters Regional Advisory Council (NWWRAC) may be a forum through which a voluntary agreement could be explored and managed in order to enable them to be effective.

Regulatory management measures were deemed as required only for benthic mobile fishing gear. Three areas were identified in the SCI sites that are not part of the reef feature, and it was recommended that they remain open to towed gears as part of a zoned management approach, subject to further data analysis. The preferred option would be a voluntary agreement rather than enforced restrictions, but this would be subject to confirmation that voluntary arrangements would be acceptable to the EC.

Voluntary agreements, if applied appropriately, could command the most compliance from stakeholders, making them feel involved and trusted rather than forced to conform. The voluntary approach would also need to define ways of assessing effectiveness and include agreed contingencies in case the approach fails.

The current mechanism for regulating offshore fisheries management is the Common Fisheries Policy (CFP). CFP decision-making involves many parties and is not well-suited for rapid reactive management. It provides the legislation and legal motivation for fisheries management, but reduces opportunity for flexibility and adaptability. Therefore measures taken through CFP should include management options that could adapt to changing conditions and to new information as it becomes available.

4.2 Summary of points from the burrowed mud habitat workshop

The key points raised when looking to establish management measures in burrowed mud habitats were:

- Site and feature conservation objectives need to be well defined to help inform management measures.
- Adaptive and flexible management is key due to the relatively low knowledge of the habitat and of the effects of fishing gear on the habitat, in order to ensure the area can be managed effectively.
- Biological and socio-economic impacts from displacement of current fishing activity should be assessed and taken into consideration in deciding on appropriate management measures.
- Site specific management options will be essential to meet the needs of the varying habitats and biotopes and, where known, different levels of vulnerability.
- Management options relating to seasonality and vulnerable periods for Features of Conservation Importance (FOCI) should be considered, with the possibility of rolling closures to take these changes into account.

Offshore fisheries, including the principle fishery in burrowed mud habitats for *Nephrops*, are subject to existing species level management including:

- Total Allowable Catch (TACs) and quotas;
- technical conservation rules on minimum landing size, mesh size, square mesh panels, by-catch percentage, and limitations on the use of multi-rigs;
- kilowatt-days at sea limitations under the Cod Recovery Plan.

These regulations contribute to limiting the overall levels of capture around the UK but are not necessarily suitable for exerting control at the site-specific local scale likely to be required for MPAs for burrowed mud habitat. Options for management include:

- Long term closures of key areas that are identified as important for particularly sensitive features.
- Pre-agreed patterns of closure depending on data revealing sequences in *Nephrops* density
- Seasonal or rotational area closures based on real-time monitoring of the most vulnerable key ecological indicators, in conjunction with local abundance of *Nephrops*
- Partition of areas between trawling and creeling
- Local voluntary agreements, codes of conduct, or analogues of accreditation schemes

Further studies to help better inform the process could include:

- Examination of links between *Nephrops* density and habitat "quality"
- Trials of gear modifications to reduce the benthic impact of fishing gears
- Correlation between *Nephrops* burrow density and density of other important burrowed mud species

The legal jurisdiction under which this experimental and adaptive approach to site management could occur depends on whether the site is located in inshore waters (local and national regulations) or EU waters (non-discriminatory EU regulations).

Comments

Each area should be treated individually rather than by an overall habitat approach as burrowed mud habitat is affected by various factors such as currents, proximity to features and fishing pressures that vary by site. Management should be by individual area in order to ensure the outcomes fit the location.

5. Best practice for implementation of fisheries measures in UK MPAs:

For offshore areas, all regulatory fisheries-related management would have to go through CFP processes that are likely to be slow. The current CFP reform process may result in faster, more regionalised decision making, but decisions will still need to be taken at a local level in order to ensure flexibility and appropriate moderation. The process for inshore sites is simpler and may allow management through purely non regulatory measures and can be progressed quickly through stakeholder and regional groups.

Involvement of stakeholders is also key to gain further information on current activity on sites and establish compromises between conservation of features and impacts of harvests. Measures that are agreed with stakeholders are more likely to be followed, noting also the difficulties of enforcement at sea.

Single species management and multi species management have been used for managing fisheries under the CFP. However, there are political commitments to shift towards an ecosystem approach. This may requires a larger volume of data and further analyses. Although single species can be used as indicators of ecosystem health, the full picture must be considered.

Steps to take:

I. Work with stakeholders
II. Gather evidence
III. Assess impacts
IV. Propose, introduce and implement management measures
V. Monitor (non statutory) or enforce (statutory) compliance
VI. Monitor biological outcomes and where necessary, adapt process

I. Work with stakeholders

All stakeholder groups must have the opportunity to attend meetings regarding MPA site proposals in order to ensure they have the opportunity to input knowledge and concerns. Proposals should be based on international and national obligations such as the Marine Strategy Framework Directive (MSFD), Natura 2000, OSPAR and the Marine Acts. These should provide background for proposals for management and avoid the need for arguments over values between conservation and exploitation.

II. Gather evidence

The best available evidence may not be sufficient to set clear conservation objectives and implement effective management measures. If the evidence does not support the recommended measures, compliance will be difficult to achieve and the measures may not produce ecologically sound results. It is vital to collect as much data on a site as possible to inform decisions and to help justify management measures. A lack of data should not halt the progress of identifying MPAs, but be considered throughout the process, allowing for adaptation as and when relevant data becomes available to input.

III. Assess impacts

Impact assessments need to involve all aspects affected by the current uses of the site, and the impacts of the proposed designation. These include biological, ecological and environmental, technological, social, cultural and economic aspects relating to the MPA.

Cumulative impacts on the features that the MPA is designated for should be assessed, not just from the fishing industry but also from other activities. Equally the cumulative impacts of closures and other measures on the fishing industry need to be assessed. For example, co-location of renewable energy sites and protected areas may be preferable from a fisheries perspective as both sites restrict fishing activity and therefore using the same space for both purposes, which then reduces the spatial impact on fisheries.

IV. Propose, introduce and implement management measures

Both regulatory and non-regulatory management mechanisms should be investigated (e.g. the consideration both of voluntary agreements and of laws). Management measures with the least social and economic impact should be implemented where effective in meeting conservation objectives, which could include changes in gear type or seasonal closures rather than total area closures. The measures should be proportionate to the conservation objectives of the feature and take into account the

reliance of stakeholders in the area in question. Extreme measures applied to low risk areas will be unlikely to have stakeholder support, which in turn may result in reduced levels of voluntary compliance.

The proper communication of proposed or applied measures is essential to the success of management; therefore it is important to ensure that all stakeholders are aware of the information necessary to comply with the measures, particularly in the case of voluntary measures which are not enforced through legislation. Information must be made available for foreign stakeholders and may require translation of documents to ensure the measures are communicated effectively to all.

V. Monitor (non statutory) or enforce (statutory) compliance

In all cases it is important to know whether and by how much behaviour has changed as a consequence of management. If stakeholders have been fully involved in the development of measures through a bottom up approach, it is more likely that they will comply to achieve management objectives, thus reducing the need for enforcement. Monitoring of non regulatory agreements should require fewer resources than enforcement of regulatory restrictions and therefore may be preferable when the conservation objectives allow. Enforcement of regulatory measures offshore is costly and can be highly challenging.

VI. Monitor and assess biological outcomes and where necessary, adapt process

Once the site is designated, it should be monitored for ecological changes and efficiency of current measures. If initial data is lacking, or the ecosystem changes, it is important to know if the management measures are still appropriate. If known and available, the use of indicator species could be considered. Depending on the results of such monitoring, it will be necessary to consider whether future management measures should change to achieve the site's conservation objectives.

6. Concluding Comments

The designation and management of protected areas is a somewhat new activity in the marine environment. There is relatively little knowledge on habitats and the processes (both natural and anthropogenic) that affect them. It is important to learn from all those involved with MPAs and for that information to be made available widely, both nationally and internationally.

Until greater understanding is achieved, it would be prudent to consider each MPA individually as each may differ both from an ecology perspective and from a stakeholder perspective. Designations and management approaches must be monitored to ensure they remain effective and fulfil the conservation objectives of each individual site or region.

Communication and adaptability are key points to the success of an MPA Management Plan.