

Marine Conservation Zone Project

Levels of evidence required for the identification, designation and management of Marine Conservation Zones

Male Common Dragonet © Natural England/Paul Kay



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1 Purpose

The purpose of this paper is to set out the Joint Nature Conservation Committee's (JNCC) and Natural England's position and underlying principles on the anticipated type and level of evidence required for the selection, recommendation, designation and management advice of Marine Conservation Zones (MCZs). The current paper establishes our expectations for data and information required for each stage and will give us the criteria against which to evaluate if the requirements for use of best available evidence have been met. This paper has been produced by JNCC and Natural England, and reflects current Defra policy¹ (February 2011).

1.1. Key messages:

- The nature of the evidence required to support the decisions at each stage are expected to be different, in particular with regards to the scale, accuracy and type of data;
- Evidence used in the identification stage of the MCZ process is subject to varying degrees of review including peer review and quality assurance assessments;
- The quantity and quality of the information required to identify a site should be greater where there is higher likelihood that management of the proposed site will restrict stakeholder's operations;
- JNCC, Natural England and Defra are actively working to improve user-confidence in some data layers;
- Regional MCZ projects will submit their MCZ recommendations to SNCBs describing the evidence used in the identification process and will clearly indicate where further work would be necessary to improve user-confidence ahead of designation;
- As part of their submission, Natural England and JNCC will highlight and evaluate any potential shortcomings in the network caused by the limitations of data and information;
- JNCC and Natural England expect to work collaboratively with stakeholders to collect any additional information deemed necessary, on the location and/or condition of features, to refine the draft conservation objectives ahead of designation at the end of 2012;
- The designation package, including the conservation objectives, will be based on the body of evidence available at that time, taking into account any additional information that becomes available during the public consultation.
- The prioritisation of data collection will be based on the confidence of data used for identification, the vulnerability of the features and the need for management measures

¹ Guidance Note 1

2 Background

The Marine and Coastal Access Act 2009 made provision for the designation of a new type of Marine Protected Area (MPA), called a Marine Conservation Zone (MCZ), which will protect marine wildlife, habitats, geology and geomorphological features. A network of MPAs is required under the EU Marine Strategy Framework Directive (MSFD) and will be an important part of Member States' efforts to achieve or maintain Good Environmental Status in the marine environment by 2020. A key part of the OSPAR biodiversity strategy is to establish a network of MPAs which is ecologically coherent and well-managed both to conserve a representative range of habitats and contribute to the protection of rare and threatened habitats and species. For MCZs to contribute towards our national and international obligations their features should aim to reach the required ecological quality (known as Favourable Condition) by 2020 at the latest (to support the UK's obligations under MSFD).

The UK Government is committed to ensuring the MPA network will be substantially established by the end of 2012, and that measures needed to achieve site and network objectives are put in place by 2016 as the UK contribution towards the OSPAR network commitment.

The MCZ process comprises:

- 1- The identification and recommendation of sites, following the principles set out in the Ecological Network Guidance² and the drafting of feature-specific conservation objectives that will contribute to the protection of sites and the network;
- 2- The public consultation and designation of sites with final conservation objectives. The objectives which will indicate the ecological and geo-morphological attributes that will be assessed to evaluate the condition of features; and,
- 3- The implementation stage that will include the establishment of any management measures, an ecological baseline and subsequent monitoring to inform the 6-yearly reporting and assessment of site features and network condition to meet Ministerial reporting obligations.

The nature of the evidence required to support the decisions at each stage are expected to be different. In particular, the scale (e.g. mapping resolution), accuracy (e.g. data sources) and type of data (e.g. ecological variables, socio-economic data) will vary due to the different requirements for interpretation and analysis of data and information at each stage in the MCZ process.

The present paper outlines the expected evidence requirements for these different stages.

2.1 Government policy on evidence

The Government policy position regarding the levels of evidence required for MCZ identification and designation is outlined in (MCZ) Guidance Note 1. It states that the "Best available evidence – Network design should be based on the best information currently available. Lack of full scientific certainty should not be a reason for postponing proportionate decisions on site

² http://jncc.defra.gov.uk/pdf/100705_ENG_v10.pdf

selection". Moreover, Defra recognise that best available evidence will have to include modelled data and that in some cases decisions will rely on expert opinion that will not satisfy all stakeholders. As such stakeholders should be prepared to identify MCZs even where there may be limited information on the location, distribution or quality of a feature.

Evidence use in the identification stage of the MCZ process is subject to varying degrees of review including by:

- stakeholders participating directly in the regional group discussions or other mechanisms;
- national providers of data and information;
- peer-review undertaken by experts and by quality assurance methods.

We anticipate that the same level of scrutiny will be undertaken in all subsequent phases after the identification of MCZs.

3 Anticipated evidence required at each stage of the MCZ process

For the purposes of this paper the MCZ process has been split into the three stages described above; namely MCZ identification and recommendation (including the regional MCZ project stage followed by SNCB submission to Government); Ministerial public consultation and designation, including finalising conservation objectives; and MCZ implementation, including management, monitoring and condition assessment.

3.1 MCZ identification and recommendation (until November 2011)

This section has been subdivided into two sections to differentiate between the regional projects submission and SNCB's recommendations to Government

Evidence required:

- Information on distribution of features at regional scale (Broad-Scale Habitats (BSH) and Features of Conservation Importance (FOCI)) and associated information, such as Areas of Additional Ecological Importance, as set out in the ENG, that will allow the description, extent and delineation of boundaries around BSHs and FOCIs
- Information on the features protected by other MPAs as presented in the gap analysis.
- Site specific ecological/geological information to describe the conservation value of features.
- Information on the sensitivity of features to pressures (and activities).
- Site-specific socio-economic information showing the location and extent of current and planned activities that will allow the evaluation of management implications and potential management options to inform the Impact Assessments.
- Broad socio-economic information on cost/benefits to inform the Impact Assessment

Regional MCZ projects will submit their MCZ recommendations to JNCC and Natural England based on the best available evidence. Key outcomes of this stage are the identification of sites following the recommendations of the Ecological Network Guidance and the development of

draft conservation objectives for the features.

Identifying possible locations for an MCZ requires a broad range of information from the distribution of species and habitats through to the distribution and intensity of pressures from human activities. The regional MCZ projects have invited all stakeholders to supply data to support the planning process. The identification of MCZs is an iterative process, which allows the use of new data or information when it becomes available. It requires not only the use of best available evidence but also expert judgement to interpret information, given the limitation of the datasets and our current knowledge on the degree and extent of impacts that activities are causing to features (species and habitats). Evidence from other projects or initiatives that fall outside of timeline of this stage will be incorporated, if relevant, during the consultation period. It is important to emphasise that only information or data made available to the stakeholder groups can be used to guide the identification of sites.

The evidence used in the regional project process will include data supplied by national contracts, regionally and locally sourced data and expert knowledge. There will be variations with regards to the information available, ranging from data sourced from sampling programmes such as national monitoring programmes, survey programmes, like the regional environmental characterisations, undertaken by Industry, SNCB programmes to map Natura features, to information based on modelled outputs, such as UK SeaMap³. Therefore the nature of the information available will vary in terms of the resolution of the data (spatial and/or biological), its accuracy, its confidence and its source (local knowledge or national datasets). JNCC and Natural England are undertaking an audit of the data that have been provided to the regional MCZ projects based on the MEDIN discovery metadata standard⁴ but supplement this where needed. This includes the type and sources of biological, physical, boundary, pressures and human activities datasets, and the creation of metadata catalogues.

During this identification stage evidence will be specifically used to inform:

- the identification of potential MCZs, location, distribution and extent or boundaries of features;
- the development of feature-specific draft conservation objectives to achieve favourable condition⁵;
- the location of reference areas⁶; and,
- discussion around likely or potential management implications and management measures to inform the impact assessment

³ <http://jncc.defra.gov.uk/page-2117>

⁴ http://www.oceannet.org/marine_data_standards/

⁵ The conservation objective establishes whether the feature meets the desired state and should be *maintained*, or falls below and should be *recovered to favourable condition*

⁶ Reference areas aim to achieve reference condition through the removal or prevention of extractive, depositional and human-derived disturbing or damaging activities.

However, the limitations on knowledge and data gaps have led members of regional stakeholder groups to voice three main concerns around the available evidence:

- lack of certainty on the presence and extent of features in the potential sites;
- lack of clarity on the current condition of sites and the use of expert judgement to set conservation objectives; and,
- gaps in evidence around the degree and extent of impacts caused by activities, and therefore the development of management measures will be based upon insufficient information.

From a stakeholder perspective, it is understandable that the quantity and quality of the information required to identify a site should be greater where there is higher likelihood that management of the proposed site will restrict stakeholder's operations. These issues are discussed later under designation and management section.

JNCC, Natural England and Defra are actively working to improve user-confidence in some data layers, by facilitating the processing of further data, for example the development of high resolution gridded bathymetry maps to support the delineation of site boundaries, and data mining, for example the analysis of multibeam backscatter information to create habitat maps. These data will assist verification⁷ of MCZ proposals. Some stakeholders remain concerned where the primary source of information on the distribution of habitats is derived from habitat models, even where the underlying data are robust and verified. Not surprisingly, stakeholders are highly likely to challenge such evidence where any subsequent MCZ may restrict their activities. However, the regional projects are clearly directed by prevailing Government policy to provide recommendations based on best available evidence. The SNCBs' role will be to give advice to Ministers where further survey work is required, along with the need to further engage stakeholders regarding site management. A programme to collect additional information is currently being developed using the outputs from the 3rd iteration. This will include the criteria for the prioritisation of sites, bio-geographical and/or ecological considerations, targeting of broad-scales habitats or FOCI types and timetable.

Evidence from actual survey data that adequately describes current feature distribution, condition and the effects of human activities upon habitat and species is not available for all sites. In the absence of site-specific data, Defra, JNCC and Natural England have used the best available evidence to provide supporting information to aid the interpretation of data gaps (e.g. using models), and provided the sensitivity matrices to help assess feature vulnerability, to support the discussion within the regional stakeholder groups around the condition of features and habitats. The discussions will inform the development of draft conservation objectives and discussion on likely management options.

Regional stakeholder groups are currently developing draft conservation objectives, which in many cases will be mainly based on the use of sensitivity matrices and expert judgment, as highlighted above, and the vulnerability⁸ of the feature to be conserved. The draft conservation

⁷ Site verification is the process of providing the necessary scientific evidence to support the designation of an MPA and the establishment of conservation objectives for the designated features.

⁸ The vulnerability is the likelihood of an activity to damage sensitive features, and will depend upon the intensity and overlap between the distribution of the features and the areas where activities are taking place.

objectives will state which features will be protected (e.g. gravel habitats) and will indicate what ecological and geomorphological attributes will be used to establish or measure the condition of those features (e.g. extent, community structure).

The draft conservation objectives and site recommendations will have an accompanying set of assumptions around the decision for each site. These assumptions will indicate the expectations of stakeholders, the confidence on the level of evidence available at the time, the corresponding levels of support and/or objection around the decision and will be used in developing the impact assessments of each regional contribution to the network and of the whole network. It is important to emphasise that work up to submission of regional MCZ recommendations in August and IAs in September 2011 is only the first stage in developing the conservation objectives for the MCZ process. The JNCC and Natural England expect to use the assumptions to work collaboratively with stakeholders to collect additional information, on verification and /or condition of features, to refine the draft objectives during the period leading up to designation at the end of 2012 (see below).

Regional MCZ projects will submit their MCZ recommendations to JNCC and Natural England describing the evidence used in the identification process. These recommendations will include the assumptions made by stakeholders and will clearly indicate where further work would be necessary to improve user-confidence ahead of designation.

3.1.1 SNCB submission to Government (August 2011 – November 2011)

Evidence required:

- Network, and site specific information if relevant, to evaluate progress towards network development;
- Further analysis to improve evidence of sites or features at most vulnerability risk.

Natural England and JNCC will submit their recommendations on the MCZs to the Secretary of State. These recommendations will evaluate the approach taken in using the best available evidence, in particular how well the MCZ proposals adhere to the Ecological Network Guidance (ENG), the proposed conservation objectives and information used to derive likely management options set out within the impact assessments. As part of the submission, Natural England and JNCC will highlight and evaluate any potential gaps or shortcomings of the network and provide advice accordingly. This will also include advice on shortcomings, due to the limitations of data and information. Any significant additional scientific evidence that becomes available during this time period, for example new data collected by stakeholders or from the site verification programme, will also be submitted to the Secretary of State alongside the regional MCZ project recommendations, with a summary of its likely impact on the proposals.

The JNCC and Natural England will highlight the assumptions underlying the levels of evidence for the recommendations such that the public consultation may prompt stakeholders to bring additional information forward to fill some of the information gaps ahead of Ministerial decisions on designation.

3.2 Government review, Public consultation and designation (November 2011 – December 2012)

Evidence required:

- Detailed scientific information to describe features, set boundaries;
- Site-specific pressure data to finalise conservation objectives;
- Detailed socio-economic data for IA to support designation.

Ministers will issue Government proposals for public consultation informed by the recommendations and evidence supplied by Natural England, JNCC and the regional MCZ projects. It is likely that the Government will ask consultees to submit any additional information for the proposed sites. Such evidence may be used to support designation in a similar way to the consultation process for Natura sites⁹. JNCC & Natural England will continue to seek further data for site verification during this period, particularly any that improves the level of confidence in the identification of MCZs and in the development of conservation objectives. New scientific information submitted as a result of the public consultation or from site verification could be used to refine the MCZ proposals, both in terms of site boundaries and the final conservation objectives or to help the regulatory authorities in their consideration of management measures. JNCC and Natural England will advise on the designation package, including the final conservation objectives. Furthermore, socio-economic information provided during the consultation will help Defra to refine the Impact Assessment that will assist the Minister in the final decision on the sites to be designated.

In cases where sites are not put forward for designation due to shortcomings in the available evidence base, a programme will be established to collect the necessary information. Such a programme may range from further analysis and interpretation of existing data to collecting new primary data to allow the confirmation (or otherwise) of the site designation and the finalisation of conservation objectives. Any new data collection would also inform the development of management measures through an assessment of the prevailing condition of the features.

The designation package, including the conservation objectives, will be based on the body of evidence available at that time (late 2012), including any additional information that becomes available during the public consultation earlier in 2012. The final conservation objectives will form the basis of the formal SNCB advice on operations. Such refinement will ensure any necessary management measures are based on as solid as possible evidence base.

3.3 MCZ post designation implementation and management

Evidence required:

- Detailed spatial distribution and characterisation of features, including distribution and extent of component biotopes and key species;
- Ecological data on condition of features and impact of activities;

⁹ <http://jncc.defra.gov.uk/marineconsult/>

- Data on ecological structure and function;
- Detailed mapping of activities (for conversion to pressures and pressure pathways);
- Site specific and cumulative data on activities including duration, frequency, intensity and spatial scale of pressures;
- Information on the management measures available and the effectiveness, feasibility and enforceability of those measures;
- Compliance with existing management measures.

The formal conservation objectives for the features of each MCZ will form part of the designation order made by the Minister, and should include a proposed timeline for the implementation of management measures. These objectives will be based on all relevant evidence at the time of designation. The SNCBs will then issue their formal advice to Public Authorities (under Section 127 of Marine and Coastal Access Act) to indicate activities that will need to be managed to deliver the conservation objectives. This formal advice will include the ecological quality measures and targets describing favourable condition (known as Favourable Condition Tables). Management of activities that may affect the status of MCZ features is the responsibility of the relevant Public Authority. It is likely that each MCZ will have different management requirements due to local environmental conditions, prevailing human activities, the conservation objectives and the vulnerability of the feature to be conserved. MCZ designation should be linked to a clear timetable for collecting the necessary information to improve the information used in the management and assessment cycle.

Management measures should be proportionate to the knowledge of the condition of the feature and the risk that it might be damaged without additional management. Thus in cases where features were identified on limited information with regards to the precise location and distribution of a feature, further data will generally be required of the actual or likely condition of the feature ahead of any significant restriction of activities. An exception would be where an activity poses a risk of significant or irrevocable damage to a feature. Reference areas will be prioritised for verification work if there are any concerns over the evidence base since they will attract the most restrictive management measures from the outset.

The development of management measures to achieve the conservation objectives, together with a monitoring and assessment programme are essential parts of creating a well-managed network of MPAs. Management within the MPA work is an essential part of the programme of measures to achieve Good Environmental Status under MSFD by 2020. Monitoring and management of MPAs will be reported by the UK Government as part of the six year cycle reporting obligations of the Marine and Coastal Access Act and subsequently the MSFD.

Collaborative initiatives for site and network monitoring and assessment could indicate the timing and frequency of data collection and analysis. For most sites, a monitoring scheme (including a baseline survey) will need to be put in place to evaluate the condition of features, to subsequently determine whether conservation objectives are being achieved, to evaluate the status of the network and further inform management needs. Prioritisation for data gathering will take into account the risks of damage to the features from activities and type of sites.

The implementation of measures will depend on having the necessary evidence base available to judge how the activity affects the feature and the anticipated time to recovery to meet the required targets for favourable condition. Public Authorities, and any other relevant organisation

with management responsibility (such as the European Commission for offshore fisheries management under the Common Fisheries Policy) will base any necessary measures on evidence of the condition of the features (or the predicted condition using vulnerability assessments), taking full account of the confidence in this evidence. For example detailed mapping showing a more accurate resolution of the distribution of features and associated attributes, and pressures pathways will be used to evaluate and define specific impacts. In cases where risk of damage or deterioration is low and the evidence on the existence or condition of the feature(s) is limited or the confidence is low, the JNCC and Natural England would expect any management to be limited until further data are gathered to assess the condition of the feature. However, the threshold for taking measures should be lower when dealing with rare and /or declining features, or when evidence exists that activities are causing cause harm to or serious or permanent damage to features. This will be decided on a site by site basis by the Public Authority after advice from Natural England and JNCC. Management measures will need to be put in place at an appropriate point after designation with the aim to deliver the objective of favourable condition by 2020.

The exception to this approach will be reference areas. Here, activities will need to stop or mitigation put in place shortly after designation. Reference areas are expected to make a significant contribution to our understanding of how human activities impact the environment and will enable regulatory authorities to tailor management measures on other protected sites.

The prioritisation of data collection within and between MCZs will be based on need by the management authority and the vulnerability of the feature. Risk assessments may be used guide Public Authorities and SNCBs on the priorities for data collection. Where possible, the JNCC and Natural England will recommend management approaches that are flexible and adaptable to increasing knowledge of the sites and the effects of activities on features.

In some cases management plans could be required in order to coordinate data collection and gather further evidence, specifically verification of feature distribution or condition assessments, and to inform the development of management measures and enforcement.

4 Monitoring, Assessment and Reporting

Managing MPAs to achieve their desired benefits for society and the environment comprises an idealised cycle of events. It begins with the establishment of objectives (for condition), implementing appropriate management of activities, monitoring the compliance with management measures, monitoring the state of the features and assessing/reporting the condition of the features against the objectives. The cycle then restarts with a review of the objectives if necessary and onwards around the cycle. Each cycle should take no longer than 6 years to fit with regulatory reporting requirements. Any associated monitoring programmes should be linked into this 6 yearly cycle. This ideal though depends on a good starting point of evidence and a process to acquire new evidence throughout the cycle.

Monitoring and assessment will be used to improve the evidence base and to compare the current state (or condition) of a feature against a desired objective. For MPAs, the conservation objectives will indicate the attributes to be assessed for each of the designated features. Monitoring and assessment will be an essential part of the future management of each MPA to determine its feature's contribution to the MPA network and the state of the wider seas. Tailored initiatives will be developed to monitor and assess reference areas, as these areas are designed

to serve as a benchmark against which other areas of the marine environment can be compared as part of long term monitoring and assessment, in particular to demonstrate the unimpacted state of a broad range of marine features, in the context of prevailing environmental conditions. MCZs monitoring will need to be integrated with requirements from other MPAs (e.g. N2K) and the wider UK MPA network. JNCC in partnership with other SNCBs are developing a MPA monitoring project within the UK Marine Biodiversity Surveillance and Monitoring Programme. This Programme also links together other UK obligations such as those under MSFD.

It is very unlikely that data will be collected from all sites within the 6-yearly cycle. Interpretation and analysis of data, development of assessment tools and methods to improve the evidence and our understanding of biological communities and ecosystems will also be used to inform the assessment and reporting of sites and network.

Prioritisation for monitoring will be given to those cases where the limitations of the data used in the identification process for MCZs have created a low confidence in the designation and to improve the quality of the feature information, for example the extent and distribution of typical species within a protected habitat and also to inform the effectiveness of management, for example to verify the efficacy of the management measures if there is a risk of serious and irreversible damage.

5 Summary

Identifying, designating and implementing Marine Protected Areas requires a range of different types of data and information, at varying degrees of detail throughout the process. Due to the potential economic consequences of establishing a MPA, both positive and negative, all decisions must be supported by clear and appropriate evidence.

The type of evidence and the level of detail (number of measurable variables) required increases as the process moves from the initial identification (economic effect is low), through designation to implementation (economic effect potentially high). Timing and prioritisation of data collection and evaluation will be linked to data confidence and the risk of serious or irreversible damage to the feature and to the need for further information to implement management measures.

Exceptions may occur where some decisions have to be precautionary due to the potential risk of complete loss to the feature however detailed information will still be required to substantiate or reject the decision as appropriate.

We expect management measures will be put in place at an appropriate point after designation with the aim to deliver the conservation objective of favourable condition by 2020.