

## **Annex H1 General assumptions and approach**

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## **1 Objectives of the Impact Assessment**

H1.1 This Impact Assessment (IA) accompanies the Department for Environment, Food and Rural Affairs (Defra)'s public consultation on recommended Marine Conservation Zones (rMCZs). The IA has been produced to inform Defra's decision regarding Marine Conservation Zone (MCZ) designation. The IA will also allow people with an interest in the marine environment to better understand:

- how, and to what extent, the rMCZs may impact on them and society; and
- the estimated economic, natural environment and social costs and benefits of the rMCZs.

H1.2 The IA assesses the impacts of all of the rMCZs<sup>1</sup> recommended by the regional MCZ projects. It includes information about the anticipated impacts of rMCZs on fishermen (including non-UK fishermen), private operators, public authorities and recreational users. Significant local and regional impacts as well as cultural, social and environmental impacts are also captured. One IA has been produced for all of the rMCZs in all four of the regional MCZ project areas (for the 'suite' of rMCZs).

H1.3 It should be noted that rMCZ Reference Areas are referred to as rMCZs throughout the IA. They are treated as individual sites, even if they are located within another rMCZ. This is because the management proposed for rMCZ Reference Areas was identified in a different way to rMCZs that are not rMCZ Reference Areas. The proposed management of rMCZ Reference Areas was identified by Natural England and the Joint Nature Conservation Committee (JNCC) (JNCC and Natural England, 2010), whereas the management assumptions made for the purposes of the IA for rMCZs that are not rMCZ Reference Areas, was informed by information collected from stakeholders and advice provided by Natural England and the JNCC (JNCC and Natural England, 2011).<sup>2</sup>

### **1.1 Approach adopted in the IA**

H1.4 The IA assesses the anticipated impacts of rMCZs on UK economic welfare over 20 years. A 20-year period has been recommended by Defra, as it is anticipated that rMCZs will have significant costs and benefits over this time. The 20-year period begins at the start of 2013 (the date at which it is assumed, for the purposes of the IA, that MCZs will be designated) and ends at the start of 2033. Significant impacts that are anticipated after 2033 are described but not quantified. Costs that operators incur voluntarily and costs that are incurred prior to designation of MCZs are discussed in the narrative but not included in costs presented in the IA summary (this is standard practice for IAs).

H1.5 The IA assesses impacts of rMCZs compared to if MCZs were not designated (the baseline). The IA therefore considers the impact of rMCZs on future plans and activities that are likely to take place before 2033. Anticipated future trends in activities are considered qualitatively in the IA, and are quantitatively assessed relative to current levels of activity only.

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<sup>1</sup> Including the Potential Co-location Zone

<sup>2</sup> Stakeholders were involved in recommending where rMCZ Reference Areas could be located, but not with regard to their management. Whereas for rMCZs that are not rMCZ Reference Areas, stakeholders informed the identification of management.

H1.6 The IA considers the impact of rMCZs for only the suite of sites recommended by the MCZ regional stakeholder groups (RSGs). For one site<sup>3</sup>, the IA considers two boundary options as recommended by the RSG. Because the aim of the regional MCZ projects was to develop a set of site recommendations through stakeholder negotiations, it is not appropriate for the IA to propose more than one option, unless more than one option was recommended by the RSGs.

H1.7 Though the focus of the IA is with regard to UK economic welfare,<sup>4</sup> significant regional and/or local impacts have been highlighted where these arise. Where it is available, information has been provided on impacts on non-UK commercial fisheries (except for pelagic fisheries in offshore areas which are not anticipated to be impacted).

H1.8 The degree of detailed analysis undertaken in the IA for each impact is proportionate<sup>5</sup> to the anticipated magnitude of the social or economic impact of MCZs.

H1.9 Quantitative assessments have been undertaken for direct impacts of MCZs only. Significant indirect costs are identified and described where they are known, but have not been quantified.<sup>6</sup> This is based on advice provided by Defra to ensure that the work done for the IA was proportionate and feasible within the time available.

H1.10 Qualitative assessments of direct and indirect impacts of rMCZs are included to provide further information on the likely impacts. All assessment of social impacts has been undertaken qualitatively.

H1.11 To meet Regulatory Policy Committee requirements, and at the request of Defra, the IA indicates the management measures that might be employed to deliver management of activities in rMCZs. Management measure in the IA refers to the instrument through which management will be provided, such as a by-law or voluntary agreement. The information provided on management measures is based on inputs from stakeholders and advice provided by the relevant authorities, including the Inshore Fisheries and Conservation Authorities (IFCA) and the Marine Management Organisation (MMO). It is provided for each rMCZ in Annex N7.

H1.12 Throughout the IA, the impact of a MCZ refers to the impact of the management of the MCZ. This is because the impact arises as a result of restrictions placed on activities in order to achieve the conservation objective of the features protected by the MCZ.

H1.13 The IA assesses the impacts of the rMCZs recommended by the RSGs in September 2011, for the boundaries, features, spatial distribution of features, and conservation objectives of features specified in the site recommendations. It assumes that the locations of features are as specified in the site recommendations and that their condition is as indicated by the conservation objective. The IA material does not reflect any revisions to the site recommendations (boundaries, features or conservation objectives) subsequently suggested by JNCC or Natural England following quality assurance of the regional MCZ projects' recommendations.

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<sup>3</sup> rMCZ 29 in the Balanced Seas project area

<sup>4</sup> Using the Total Economic Framework so includes impacts on ecosystem goods and services and non-use values.

<sup>5</sup> See HM Government, 2011 for an explanation of the principle of proportionality.

<sup>6</sup> Indirect impacts are not commonly assessed as part of a cross-sectoral cost-benefit analysis. They are usually assessed as part of a sector-specific or focused economic IA (Holland and others, 2010).

## **1.2 Stakeholder engagement in the IA**

H1.14 Four regional MCZ projects (covering the north-east, north-west, south-east and south-west) worked with sea users and interest groups to develop the recommendations for MCZs that were submitted to JNCC and Natural England in September 2011. The regional MCZ projects each had a project economist, who worked on the IA and collected information from stakeholders at the same time as the site recommendations were being developed. The two aspects of the work informed each other.

H1.15 The IA covers all human activities that it is anticipated will be impacted on by rMCZs (positively or negatively). The IA has been developed in close collaboration with sectors that, it is anticipated, will be impacted on by MCZs. This work has largely been co-ordinated through the RSGs and the regional MCZ project staff over a two-year period.

H1.16 In most instances, the regional MCZ projects collected information from stakeholders about the level and type of human activity in each rMCZ (or group of sites). This informed the identification of management scenarios and identification of possible and preferred management measures. The regional MCZ projects invited the RSGs to comment on the management scenarios and management measures, and to make further suggestions. Their feedback is provided in each RSG's Final MCZ Recommendations report.

H1.17 Representatives of sectors and/or operators who were anticipated to be impacted by MCZs were contacted to collect information and cost estimates to inform the IA. This comprised stakeholders from 11 sectors: aggregate extraction; aquaculture; archaeology; cables (power and telecom); commercial fisheries; flood and coastal defence; national defence; oil and gas (including carbon capture and storage); ports, harbours, shipping and disposal; recreation; and renewable energy. These information requests set out the data sources and IA assumptions and were accompanied by a Fair Processing Note.

H1.18 A qualitative exercise was undertaken with representatives of commercial fisheries in each regional MCZ project area, to qualitatively assess fisher response to MCZ designation. Again, data sources, IA assumptions and a Fair Processing Note were shared with the interviewees. More detail is provided in Annex H7.

H1.19 Members of the RSGs and named consultative stakeholders, who are among the stakeholders who have been most closely involved in developing the site recommendations, were invited to provide feedback on draft material for the IA. Their feedback was reviewed and addressed before the regional MCZ projects formally submitted the IA to JNCC and Natural England, and before it was submitted to Defra.

H1.20 As part of the formal public consultation, scheduled to take place in 2012, all stakeholders will be invited to comment on, and provide further input into, the IA. Following the public consultation, Defra will review the consultation responses and make any revisions to the IA, which will then be used to help inform the Government's decisions on designating individual MCZ sites.

H1.21 Levels of stakeholder support for each rMCZ are provided in the RSGs' Final MCZ Recommendations Reports, submitted to Natural England and JNCC in September 2011; they are not repeated in the IA.

H1.22 More detail on how stakeholders were engaged in the IA is provided in Annex M.

### **1.3 Technical aspects of the IA**

H1.23 The IA was developed based on government guidance for producing IAs (HM Government, 2011; HM Treasury, 2003) and the information provided by the Department for Business, Innovation and Skills (at [www.bis.gov.uk/ia](http://www.bis.gov.uk/ia)), which is not repeated here.

H1.24 In the absence of MCZs (in the baseline) it is assumed that existing government policies and commitments related to the marine environment are fully implemented and achieve their desired goals. Particularly significant are commitments to implementation of the Water Framework Directive and the Environmental Impact Assessment Directive. In light of this, the IA assumes that no mitigation of impacts of water abstraction, discharge or diffuse pollutions is required over and above that which will be provided to achieve the objectives of the Water Framework Directive through the River Basin Management Plan process. Natural England has advised that this is a reasonable assumption to make for the purposes of the IA (Natural England, pers. comm., 2010).

H1.25 The IA mostly uses impacts on Gross Value Added (GVA) to assess impacts on UK economic welfare. GVA measures the contribution to the economy of each individual producer, industry or sector, and is used across government to measure national, regional and sub-regional economic performance (Wainman and others, 2010). Sufficient data with which to calculate impacts via changes to consumer and producer surplus (which are the measures used in conventional economic cost-benefit analysis) were not available so GVA was therefore used as an appropriate alternative.

H1.26 All values are presented as real values in 2011, unless specified otherwise. Following government guidance, inflation is not considered in the IA. Present values have been calculated for costs and benefits to account for when they occur over the 20-year period of the IA. This is because, as a whole, society prefers to defer costs to future generations (and to receive goods and services sooner rather than later). Present values are calculated using discounting and a discount rate of 3.5%, based on government guidance (HM Treasury, 2003).

H1.27 The displacement of activities due to the impact of rMCZs has been considered where feasible. The potential for such substitution to result in no net impact on national economic welfare has been considered qualitatively, if possible to do so in the IA. For example, some users of a port may respond by using alternative port facilities if planned development of a port cannot take place because of an MCZ. Recreational anglers may respond to the management needed for rMCZ Reference Areas by fishing in alternative areas in the UK. However, in most instances<sup>7</sup> the potential for substitution has not been quantified and factored into the estimated impacts on GVA.

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<sup>7</sup> Substitution has been considered qualitatively in the IA for fisheries, recreation and ports, harbours and shipping only.

H1.28 Because it is not anticipated that MCZs will significantly impact on government revenue from Value Added Tax (VAT), the IA considers all costs net of VAT. Where possible, VAT has been removed from estimates of costs provided by operators. However, if operators have not indicated costs that include VAT, some of the costs used in the IA may be overestimated.

H1.29 The costs that arise as a result of rMCZs include costs:

- that arise to fishers and recreational users;
- that arise to licensed operators to mitigate the impacts of their activities on features protected by MCZs. The IA estimates the impact of this mitigation on the economy and on the operator;
- that arise to licensed operators to assess the impact of their activities on features protected by MCZs in future licence applications;
- of management enforcement and surveillance in MCZs; and
- of the monitoring programme that will assess the condition of features protected by MCZs.

H1.30 For licensed operations that must already undertake an assessment of environmental impact in the absence of MCZs, JNCC and Natural England have advised that MCZs may increase the costs of assessing environmental impacts in future licence applications (JNCC and Natural England, 2011). These increased costs have been assessed in the IA, using estimates about the increased costs and the numbers of future licence applications that may be affected.

H1.31 Appropriate assessment will not be required for MCZs. This is undertaken by the competent authority where a plan or project is likely to have a significant effect on the features of a Special Area of Conservation or Special Protection Area (Natural England, 2010).

H1.32 For licensed operations that could impact on features of conservation importance protected by MCZs, the IA assumes that no additional assessment of impact will be required compared with the assessment required in the absence of MCZs. This is because impacts on these features need to be assessed already in the absence of MCZ designation because they are on the Oslo and Paris Convention (OSPAR) (of Threatened and/or Declining Species and Habitats) and/or on the UK List of Priority Species and Habitats (UK Biodiversity Action Plan (BAP)) (JNCC and Natural England, 2011a; 2011b). In reality, the extent to which each sector does this varies. Therefore, the costs included in the IA could under or over-estimate the cost incurred to operators in assessments of environmental impact due to MCZs.

H1.33 Costs have been sourced directly from developers and industry representatives in recognition of the site-specific and development-specific nature of costs. Costs provided by different developers were compared, to identify any erroneous costs. Costs that seemed too high or too low were queried with the relevant developer and in some instances adjusted. The IA material, including cost estimates, was also independently reviewed by leading expertise in marine industry sectors and environmental economics. Therefore, while it is not possible to remove all bias from cost estimates, all possible efforts were made to ensure that the cost estimates used for the assumptions made in the IA were as accurate as possible.

H1.34 Assessments of confidence about the scenarios presented in the IA are included in the method paper for each sector. In most cases, the best estimate of impact is made based on the advice of the regulator and/or statutory nature conservation body for that sector. Three sectors have made their own assessments of uncertainty, by presenting their own assessments of impact in the IA.<sup>8</sup> For the fisheries sector, due to the uncertainty regarding future management of fisheries in MCZs, a full range of scenarios is presented, ranging from open access to closure. Where the term 'confidence' is used in the IA material, this is defined according to IPCC (2005) guidance, which is summarised in Table 1 below.

**Table 1:** IPCC (2005) definitions of 'confidence' that are used in the IA

Terminology	Degree of confidence in being correct
<i>Very High confidence</i>	At least 9 out of 10 chance of being correct
<i>High confidence</i>	About 8 out of 10 chance
<i>Medium confidence</i>	About 5 out of 10 chance
<i>Low confidence</i>	About 2 out of 10 chance
<i>Very low confidence</i>	Less than 1 out of 10 chance

H1.35 In the event that the impact of a proposed plan or project on the ecological coherence of the Marine Protected Area (MPA) network (of which MCZs will be a component) needs to be assessed as part of the licence application, the IA assumes that this assessment would be undertaken by the statutory nature conservation adviser. These circumstances will arise if the assessment of environmental impacts indicates that a future plan or project prevents the conservation objective being met for any feature protected by MCZs listed in the Ecological Network Guidance; or the statutory nature conservation adviser identifies that the plan or project could impact on the ecological coherence of the MPA network. These assessments will take time for the statutory nature conservation advisers to undertake. If this delays the licensing process, it could add additional cost to the development. These costs have not been quantified in the IA.

H1.36 While it is expected that the Statutory Nature Conservation Bodies (SNCBs) and regulatory bodies will be required to consider the impact of proposed activities in licence applications on MCZ features, Defra has advised that these should not be considered as additional costs in the IA. This is because reviewing licence applications, for example, is part of the day-to-day duties of SNCBs and regulatory bodies which are carried out as a result of existing legislation (in this case, the Marine and Coastal Access Act, 2009) and is independent of the designation of MCZs.

H1.37 The assessment of benefits of rMCZs includes anticipated impacts on ecosystem services (impacts on the benefits that the environment provides to people). Details of the approach employed to assess impacts of rMCZs on benefits derived from ecosystem services are provided in Annex H5. The approach includes:

- qualitative assessment of the anticipated conservation benefits of the suite of sites; this assessment draws on available ecological information, the evidence that informed international

<sup>8</sup> Provided by: the ports, harbours and shipping sector; the renewable energy sector; and the aggregate extraction sector.

commitments for conserving marine biodiversity and the evidence that informed development of the Marine and Coastal Access Act 2009<sup>9</sup>;

- qualitative assessment of the beneficial impacts of individual rMCZs on ecosystem services; informed by reviews of currently available evidence, and information provided by stakeholders on potential benefits to people, society and the environment.

H1.38 The IA assesses the impacts of rMCZ Reference Areas separately from rMCZs that are not rMCZ Reference Areas. The impacts of the entire suite of sites are adjusted to account for overlaps in the impacts of an rMCZ and the impacts of an rMCZ Reference Area contained within it. This prevents duplication of the costs and benefits of individual rMCZs in assessment of the total costs and benefits.

#### **1.4 Identification of management scenarios in the IA**

H1.39 To enable impacts of rMCZs to be assessed, the IA makes assumptions about the additional management<sup>10</sup> of activities that may be needed to achieve the conservation objectives of the species and habitats (features) recommended for each rMCZ. Existing management that is already in place locally at the site (not nationally) that could contribute to the management needed for the rMCZs was also considered, and is identified in Annex E (for fisheries and recreation). The additional management is specified in terms of the ways in which an activity might need to be done differently to mitigate its impacts on the MCZ's features. These assumptions are described under management scenarios for each human activity for each rMCZ (see Annex I).

H1.40 The management scenarios for each rMCZ have been developed for the purposes of the IA only and do not constitute recommendations. After MCZ designation, the management required for MCZs will be decided on a site-by-site basis and may differ from the management suggested in this IA. The management scenarios have been developed by the regional MCZ projects, based on information provided by stakeholders and users of each rMCZ, as well as from advice provided by JNCC and Natural England (further details are provided for each sector in Annex H). On this basis, the scenarios reflect the additional management that is most likely to be employed for an MCZ. Where there is uncertainty, more than one scenario has been used to reflect the potential range in management.

H1.41 The IA assumes that additional management of activities – and the measures through which this will be delivered – will be introduced when MCZs are designated (assumed for the IA to be at the start of 2013). The IA assumes that the management will be 100% enforced and effective and that some prosecutions may be required to achieve this.

H1.42 The regional MCZ projects identified management scenarios and management measures separately for each rMCZ, taking into account the conditions of each site as far as possible (differing energy regimes, gear types, existing management, etc.). The way in which the management scenarios and management measures were identified for rMCZs that **are** rMCZ Reference Areas and rMCZs that **are not** rMCZ Reference Areas is described below.

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<sup>9</sup> This evidence was not peer-reviewed.

<sup>10</sup> Over and above any existing management that would be provided in the absence of the MCZ that would contribute towards the conservation objectives of the MCZ features.



*Recommended MCZs that are Reference Areas*

H1.43 JNCC and Natural England advised that rMCZ Reference Areas will be closed to activities that are considered to be extractive or depositional (as listed in Table 1) as defined by JNCC and Natural England (2010). They advised that potentially damaging or disturbing activities may proceed if the necessary mitigation of impacts can be provided (JNCC and Natural England, 2010). Also, management of activities that are potentially damaging or disturbing to other species and habitats (not listed in the Ecological Network Guidance) may also be required. Stakeholders did not inform the assessment of additional management required in rMCZ Reference Areas.

**Table 1:** Examples of activities considered to be extractive, depositional and potentially damaging or disturbing to features listed in the Ecological Network Guidance JNCC and Natural England, (2010).

<u>Extractive</u>	<u>Depositional</u>	<u>Potentially damaging or disturbing</u>
Aquaculture	Aquaculture	Anchoring/mooring
Beachcombing	Catch-and-release angling	Low flying aircraft
Catch-and-release angling	Commercial fishing	Maintenance and operation of existing structures
Collection of flora and fauna	Construction of structures	Motorised boating
Collection of natural materials/substrates	Deposition of gravel/rock	Navigation/transit of vessels
Commercial fishing	Disposal of dredge spoil	Non-motorised boating
Construction of structures	Military activities	Other recreational pursuits
Dredging	Petroleum/gas exploration	Personal water craft
Marine curio collection	Petroleum/gas operation	Point source discharges
Military activities	Recreational angling	Ports and harbours
Petroleum/gas exploration		Scientific research and education
Petroleum/gas operation		Scuba diving and snorkelling
Recreational angling		Swimming
		Vehicular access
		Visitor amenities/camping
		Walking/hiking
		Wildlife observation

*Recommended MCZs that are not Reference Areas*

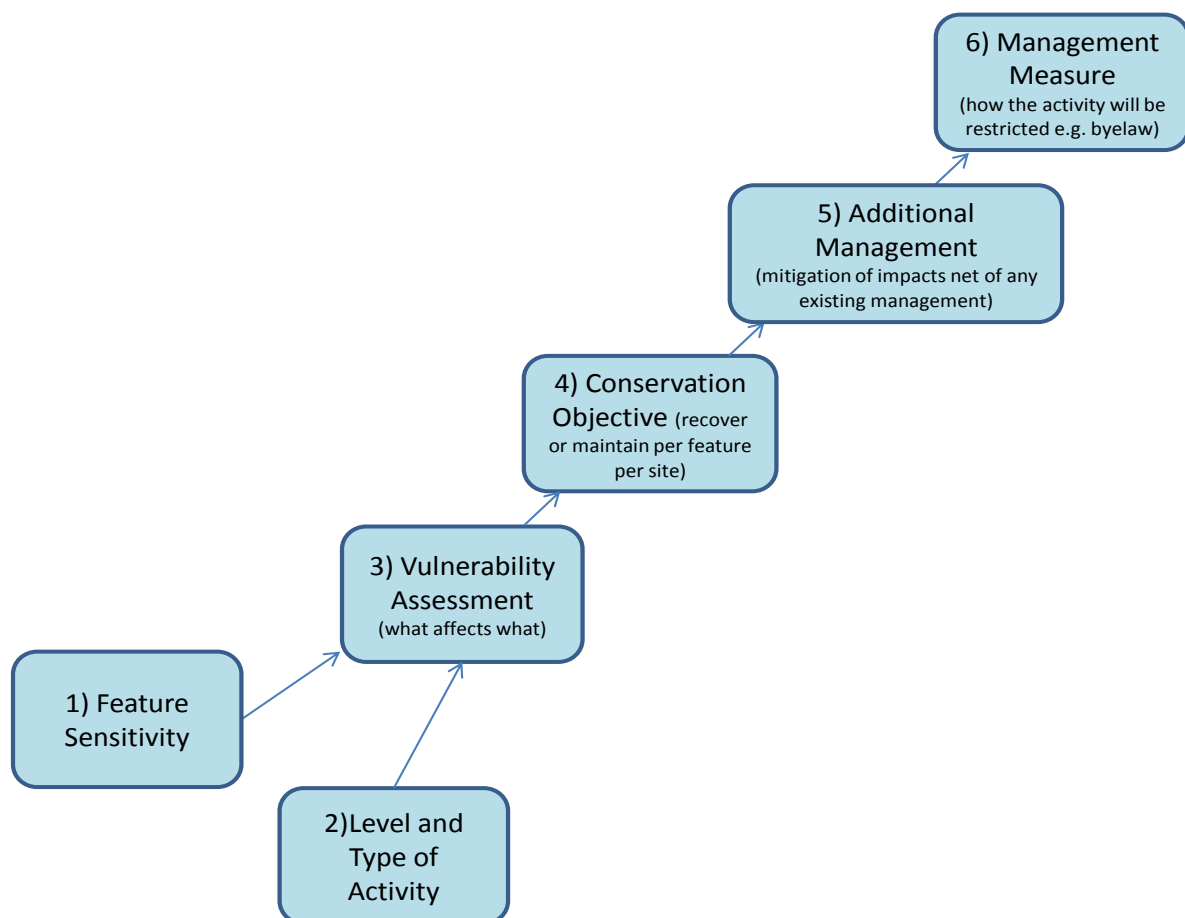
H1.44 For rMCZs that are not rMCZ Reference Areas, the management scenarios were identified using information about the sensitivity of species and habitats recommended for protection in each MCZ, as well as information about the level and type of human activities in each site collected from stakeholders. The process adopted is shown in Figure 1 below.

H1.45 Information about the sensitivity of species (box 1 of Figure 1) was provided by JNCC and Natural England by contractors (Tillin, Hull and Tyler-Walters, 2010). This information was based on academic research, grey literature and industry expertise, as well as advice from JNCC and Natural England. It identified the level of sensitivity of each species and habitat to pressures exerted by different human activities. The species sensitivity data were provided in Excel databases with supporting reports. The volume of information is large and is not repeated in the IA. Stakeholders had access to this information during the MCZ recommendation process.

H1.46 Information about the level and type of each human activity in each rMCZ (box 2 of Figure 1) was based on information collected from stakeholders and users of each site, as well as information in regional and national data sets held by the Project teams. The accuracy of the data was scrutinised over the two-year period of the MCZ recommendation process.

H1.47 The information on sensitivity of species and habitats and human activities in each site was entered into a spreadsheet, which summarised the type and level of human activity in each site, and identified what pressures each activity applies on the species and habitats in each site, based on the type and level of activity. This information was used by each regional MCZ project to complete a vulnerability assessment for each rMCZ (box 3 of Figure 1). This examined the degree to which each species and habitat in each site was vulnerable to the level and type of human activities in each site. As far as possible, the vulnerability assessment took into account the local environmental conditions and any existing management of human activities in each of the rMCZs.

**Figure 1:** Process adopted for identifying management and management measures



H1.48 The project teams used site-specific information and the advice of JNCC and Natural England to develop conservation objectives (box 4 of Figure 1) for the species and habitats in each site recommended for designation. If the vulnerability assessment indicated that a species or habitat (to be protected by an MCZ) is significantly impacted on by the activities taking place in the site, the conservation objective was specified as ‘recover to favourable condition’ for that feature against those activities (not necessarily all activities taking place in the site). Where the vulnerability assessment indicated that a feature was not significantly impacted on by any activities in that site, the conservation objective was specified as ‘maintain at favourable condition’ for that feature. More detail regarding the conservation objectives are provided in the Regional Project Final Stakeholder Recommendations reports. The vulnerability assessments have been reviewed by JNCC and Natural England.

H1.49 For the purpose of the IA, the next task was then to identify additional management of activities that might be needed over and above existing management that is already in place in the rMCZs (box 5 of Figure 1). To do this, the IA takes into account existing management that may provide some of the protection required for features that would be protected by an rMCZ. Subject to some exceptions, the IA assumes that management of an existing activity is needed only for species and habitats that have a conservation objective of recover to favourable condition in relation to that activity – in other words, only where the vulnerability assessment has indicated that the activity could potentially impact on a feature protected by an MCZ. The exceptions are where the need for additional management of an activity has been identified since the vulnerability assessment was undertaken.

H1.50 Once the need for additional management of an activity in a site was identified through the vulnerability assessment, scenarios to reflect the type of management that could be implemented (e.g. seasonal closures, additional measures to mitigate impact, or additional data collection) were identified with the help of JNCC and Natural England as well as information from other sources. This is explained in the method paper for each sector (see Annex H). The management that will be implemented in each rMCZ is not yet known and is subject to site-specific detailed investigations. Therefore, the vulnerability assessments and management scenarios adopted in the IA have sought to identify the most likely management of activities. However, there is a chance that this may not reflect the management that is implemented in practice. Where there is uncertainty with regard to what management will be implement (e.g. for fisheries), this is reflected in a range of possible management scenarios which are provided in the IA.

## **2 Identification of management measures for rMCZs**

H1.51 Once the additional management that may be needed for rMCZs (including rMCZ Reference Areas) had been identified, the project teams identified potential management measures that could be used to apply the management to each site (such as a byelaw or voluntary agreement) (box 6 of Figure 1). This was informed by information supplied by public authorities and through discussions with stakeholders, including MMO, IFCA and other public bodies (further details are provided where appropriate in the method paper for each sector at Annex H). Where stakeholders have identified a preferred management measure, this has been indicated in the IA. Based on the advice of Defra, management measures were evaluated in terms of their practicality, effectiveness and enforceability. Where stakeholders have not identified a preferred measure, two scenarios are employed in the analysis: a statutory measure and a voluntary measure.

## **3 Future activities considered in the IA**

H1.52 Where possible, the IA has considered the impacts of rMCZs on known likely future plans and projects in rMCZs. However, if there is significant uncertainty about whether a plan or project will take place, it has not been considered in the IA. If evidenced, future trends in activities have been described in the IA. More detail is provided in the method papers provided at Annex H.

## **References**

HM Government. 2011. *IA Toolkit. How to Do an Impact Assessment.* URL: [www.bis.gov.uk/assets/biscore/better-regulation/docs/i/11-1112-impact-assessment-toolkit.pdf](http://www.bis.gov.uk/assets/biscore/better-regulation/docs/i/11-1112-impact-assessment-toolkit.pdf). [accessed March 2009].

Annex H1 from Finding Sanctuary, Irish Seas Conservation Zones, Net Gain and Balanced Seas. 2012. *Impact Assessment materials in support of the Regional Marine Conservation Zone Projects' Recommendations*.

HM Treasury. 2003. *The Green Book*. URL: [www.hm-treasury.gov.uk/data\\_greenbook\\_index.htm](http://www.hm-treasury.gov.uk/data_greenbook_index.htm). [accessed March 2009].

Holland, D., Sanchirico, J., Johnston, R., and Jogelkar, D. (2010) *Economic Analysis for Ecosystem - Applications to Marine and Coastal Environments* RFF Press.

JNCC and Natural England. 2010. *Marine Conservation Zone Reference Areas: Guidance document for regional MCZ projects. Version 1.1*. Peterborough: Natural England.

JNCC and Natural England. 2011. *Draft: Increases in costs for assessing environmental impacts of future plans and projects arising as a result of Marine Conservation Zones (MCZs)*. 28.11.11. Peterborough: Natural England.

Natural England (2010) *Impact Assessments for a suite of marine SACs and SPAs. Annexes*.

Tillin, H.M., Hull, S.C. and Tyler-Walters, H. 2010. *Development of a Sensitivity Matrix (pressures-MCZ/MPA features)*. Report to the Department of Environment, Food and Rural Affairs from ABPMer, Southampton and the Marine Life Information Network (MarLIN). Plymouth: Marine Biological Association of the UK. Defra contract no. MB0102 Task 3A, Report No. 22.

Wainman, G., Gouldson, I., and Szary, A. 2010. *Measuring the Economic Impact of an Intervention or Investment. Paper One: Context and Rationale*. London: Office for National Statistics.