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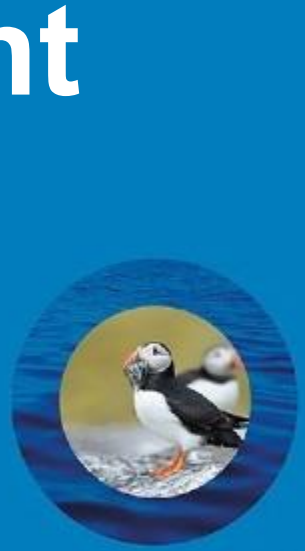
Evaluating Marine Protected Area (MPA) Management Measures: Guidance













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About this guidance

The guidance is intended to be used by MMO to support impact evaluations of Marine Protected Area (MPA) management as part of the 5-yearly review of management.

The guidance was developed by ICF Consulting Services in partnership with Plymouth Marine Laboratory and Live Economics. It forms part of an impact evaluation approach developed for MMO1421: Evaluating MPA Management Measures.

Evaluation questions are intended to align with post-implementation review (PIR) questions.



Mapping of evaluation questions to PIR questions is provided in Annex A2

Introduction to the guidance

This evaluation guidance splits MPA impact evaluation into three phases:

- **Phase 1: Scoping.** Review and refine the evaluation focus.
- **Phase 2: Evaluation.** Collect and analyse primary and secondary data to answer each evaluation question, using questions tailored to the MPA.
- **Phase 3: Reporting.** Present impact evaluation findings.

There are four annexes:
Annex A1: MPA management Theory of Change
Annex A2: Mapping evaluation questions to post-implementation review questions
Annex A3: Primary and secondary data
Annex A4: Bespoke fisheries data analysis

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Phase 1: Scoping

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The scoping phase is used to review and refine the evaluation focus

Purpose: Ensure the evaluation focuses on an appropriate set of issues and places a proportionate amount of research effort on each. Identify appropriate data sources and relevant stakeholders to consult.

Approach:

- Establish the requirements of MPA impact evaluation
- Clarify what is to be evaluated
- Scope the anticipated impacts of interest and/or significance
- Refine the evaluation questions of interest

1.1: Establish the requirements of the MPA impact evaluation

Purpose: Confirm the aims of MPA impact evaluation by reflecting on the aims and priorities of the 5-yearly review of management and consider the timeframes and resources you have available to conduct the impact evaluation.

Approach: Consider the following questions:

- Who is the intended audience for the evaluation – who will use the results and what are their needs?
- What specific aims for the 5-year review have been stated by MMO?
- When are the results of the evaluation required?
- Who will be conducting the evaluation and what resources are available?

This task may require consultation and direction from MMO senior management.

Output: A succinct articulation of the requirements of the evaluation.

1.2: Clarify what is to be evaluated

Purpose: Establish a clear description of what is to be evaluated.

Resources:

The following resources should be consulted:

- MPA site designation documents
- MPA current and historic management measure documents (e.g., the byelaw)
- MPA Site Assessments
- MPA and/or management ex-ante impact assessment
- Scoping interviews with MMO Conservation team

Key questions to consider:

- The MPA: Which MPA is being considered, where is it and when was it designated?
- The intervention: What is the nature of the management under review, what does it do and who does it apply to, how was it implemented, when was it implemented, and how did it change any previous management in that area?
- The objectives of the intervention: Which MPA features are (and are not) targeted for protection by the management, what was their conservation status prior to the management, and what was the intended effect of the management on their status? Were there any other objectives of relevance?

Output: A short description of what is to be evaluated.

1.3: Scope the anticipated impacts of interest and/or significance

Purpose: Establish, 'in theory', the range of impacts (positive and negative) that may have occurred as a result of the MPA management, which can in turn be used to provide greater specificity to how evaluation questions are articulated and support the identification of the indicators likely to be needed to evaluate the impacts.

Resources:

The following resources should be consulted:

- Generic MPA management theory of change
- MPA and/or management ex-ante impact assessment
- Scoping interviews with key informants about any observed or perceived impacts of the MPA management e.g., MMO site managers and/or coastal officers

Key questions to consider:

- What benefits would you expect to see as a result of the MPA management?
- What positive or negative impacts might result for stakeholders directly affected by the management?
- Will other stakeholders or areas be affected by the MPA management or changes in behaviour by directly affected stakeholders (particularly relevant if displacement effects are anticipated)?
- To what extent might other factors have influenced any changes that have occurred in stakeholder behaviour or different types of anticipated environmental, economic or social impacts?

Output: Summarise the range of potential impacts and their significance.



An MPA Management Theory of Change is provided in Annex A1

1.4: Refine the evaluation questions of interest

Purpose: The evaluation questions provide the specific focus for the evaluation. All the research undertaken for the evaluation is targeted to answering these questions.

Approach:

- Review the evaluation questions included in Phase 2 of the evaluation
- In light of the scoping steps thus far, refine the evaluation questions to ensure they are tailored to the evaluation needs and anticipated range of impacts of relevance
- Where necessary, work with primary intended users of the evaluation to develop an agreed list of key evaluation questions
- Ensure that the final set of evaluation questions will enable you to respond to the key questions of a Government Post Implementation Review (see Annex A2 for mapping PIR questions to the standard evaluation questions presented in this guidance).

Output: A refined list of evaluation questions.

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Phase 2: Evaluation

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The Evaluation phase is used to plan, collect and analyse the data needed to answer each evaluation question

Purpose: Establish what research is needed to respond to each of the evaluation questions and deliver that research.

Approach: Using the guidance set out for each evaluation question in this section undertake the following steps.

Step 1: Plan the detailed approach for each evaluation question:

- Identify the indicators needed
- Identify the data sources for each indicator
- Confirm how the indicators will be used and analysed

The slides in this section provide suggestions on the likely indicators, data sources and analytical approaches needed for each evaluation question.

Step 2: Design and deliver data collection:

- For each data source, draw together the indicators required of it
- Design primary research data collection tools
- Collect data

Step 3: Analyse the data



Annex A3 provides information on potential secondary data sources and options for primary data collection

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Impact evaluation questions

The remainder of this section presents each of the impact evaluation questions, categorised into three groups exploring:

1: Effects of MMO management

2: Socio-economic impact of MMO management

3: Changes to MMO management

It is recommended that the impact evaluation questions are explored in the order listed above, as answers to evaluation questions in (1) and (2) will help inform the answers to the evaluation questions in (3).

The impact evaluation questions for each of the above three themes are summarised on the light blue slides throughout this section and examined in detail, in turn, on the white slides.

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A note on examining contribution

Observed changes in activities/effects may be the result of the management. However, they may also have been influenced by other factors. The relative contribution of the management vs these other factors should be examined. The aim is to produce a credible, evidence-based narrative of the contribution that the management made to the observed changes.

In planning your approach to each evaluation question, consider the relative importance of understanding the ‘contribution’ of the management to any observed effects and the following options:

- Op1: Before-and-after comparison
- Op2: Comparison to a control group
- Op3: Identify/collect evidence on the ‘contribution’ of the MPA management and other factors

1. Effects of MMO management

Evaluation questions

EQ 1.1: Have the MMO management measures been complied with?

EQ 1.2: How have activities occurring in (or near) the MPA changed because of the management?

EQ 1.3: What is the impact of pressures on the MPA?

EQ 1.4: To what extent have pressures that negatively affect the protected feature(s) been reduced?

EQ 1.5: To what extent has the site conservation objective been achieved? And how did the MMO management of the MPA contribute to this?

EQ 1.6: What other environmental impacts in the MPA have occurred due to the MPA management?

EQ 1.7 To what extent and how has MPA management affected other marine areas outside of the MPA?

EQ 1.1: Have the MMO management measures been complied with?

Explanation of the EQ: This evaluation question seeks to understand whether management has been complied with, and the nature and extent of any non-compliance. Current types of MMO MPA management include (i) areas closed to certain types of fishing activity, and (ii) restrictions on (typically recreational) anchoring in certain areas.

Indicators and data sources

MMO records data on infringements detected by type of offence. In some cases, site-specific activity monitoring may take place that can provide data on compliance. However, such data only captures cases where the non-compliant activity has been formally detected – this will also be influenced by MMO investment in surveillance and investigation relevant to a given byelaw/MPA. There may be instances where non-compliant activity is occurring that has not been detected and recorded in any datasets. As such, intelligence on non-compliant activity can also be sought from key informants e.g., local fisheries officers, site managers and users.

Key indicators	Data sources
Number of infringements	Monitoring Control and Surveillance System (MCSS) Site monitoring data
Enforcement and prosecution actions	MCSS
Intelligence on non-compliant activity	MMO investigations team CLUE (MMO intelligence system) Primary research with local MMO/IFCA officers Primary research with local stakeholders

Methods / analysis

Triangulate indicators to come to an overall judgement on the level of compliance or non-compliance within the MPA.

Example interview questions

- Are you aware of any types of non-compliance with the management in the MPA?
- If yes, do you know if that activity takes place?
- What is being done to enforce or encourage compliance?

EQ 1.2: How have activities occurring in (or near) the MPA changed? (Slide 1)

Explanation of the EQ: The evaluation question seeks to understand changes in activity levels and distribution relevant to the MPA / management measure and potential impacts. It provides the foundation for subsequent evaluation questions.

Typical changes in activity influenced by MPA management include:

- Activities directly affected by the management measure:
  - Displacement of activity to other areas outside the MPA management area.
  - Displacement of activity to management-compliant gear types / activities.
  - Cessation of activity (rather than displacement effects articulated above).

- Activities not directly affected by the management:
  - Change in activity levels or distribution by permitted activities within the MPA management area.
  - Change in activity levels or distribution by permitted activities in areas where displaced activities have increased.

As of March 2025, MMO MPA management only applies to commercial fishing and recreational activities. Hence only these activities are directly affected by MMO MPA management.

Other changes in activity that are relevant to subsequent evaluation questions, but which may be influenced by the MPA management include:

- Existing, new or altered licensable activities e.g., wind farm developments and maintenance
- Existing, new or altered non-licensable activities

EQ 1.2: How have activities occurring in (or near) the MPA changed? (Slide 2)

Indicators and data sources

Where possible, indicators should be collated and analysed for the pre- and post-management period. In many cases pre-management data may not be available – primary research may support collection of pre-management data or opinion on the extent of change post-management.

Key indicators	Data sources
On-site fishing activity: • Number of active vessels by gear type • Fishing activity by gear type (e.g., VMS count, days at sea) • Fishing pressure (swept area ratio, gear effort e.g., pots set per day) • Fishing landings (volume, value)	• Management impact assessment (pre-management period) • MPA Site Assessment (pre- and/or post-management period) Or: • Bespoke fisheries data analysis (pre- and post-management period) – see Annex 4 for further details • Primary research with activity managers and local stakeholders
Off-site fishing activity: • Number of active vessels by gear type • Fishing activity by gear type (e.g., VMS count, days at sea) • Fishing pressure (swept area ratio, gear effort e.g., number of pots) • Fishing landings (volume, value) – aggregate and by individual vessel	• Bespoke fisheries data analysis (pre- and post-management period) – see Annex 4 for further details • Primary research with activity managers and local stakeholders
Licensable activities (type, presence, footprint)	• Management impact assessment (pre-management period) • MPA Site Assessment (pre- and/or post-management period) • Explore Marine Plans • Public register of marine licence applications and decisions
Non-licensable activities (type, presence, footprint)	• Explore Marine Plans • Primary research with activity managers and local stakeholders



Bespoke fisheries data analysis is covered in Annex A4

EQ 1.2: How have activities occurring in (or near) the MPA changed? (Slide 3)

Methods and analysis

Steps:

- Step 1: Establish pre-management baseline understanding of target activity, within site and management area.
- Step 2: Establish post-management understanding of target activity.
- Step 3: Examine extent to which the management has contributed to the observed change between baseline and post-management period.
- Triangulate using evidence from interviews.

Example interview questions

- How has the use of the MPA changed since the management was implemented?
- Has the number or type of recreational visitors changed?
- How has the activity of fishers using bottom towed gear in the MPA changed since the management was implemented?
  - Have they increased their activity elsewhere? Where?
  - Has it affected the number of fishing trips or duration of fishing trips?
  - Have affected fishers transitioned to other gear types?
  - Or left the sector?
  - [Prompt for how any of this might have changed over time since the management was introduced]
- Has there been a change in activity within the MPA by compliant gear fishers / activities?
  - What activity and by who?
  - How has that activity changed on-site (e.g., has it increased within the management area) and off-site (i.e., has the activity moved from another area or has there been an overall increase)?
  - Has it affected the number of fishers, fishing trips or fishing effort?
- Are there other factors that may have influenced these changes?

EQ 1.3: What is the impact of pressures on the MPA? (Slide 1)

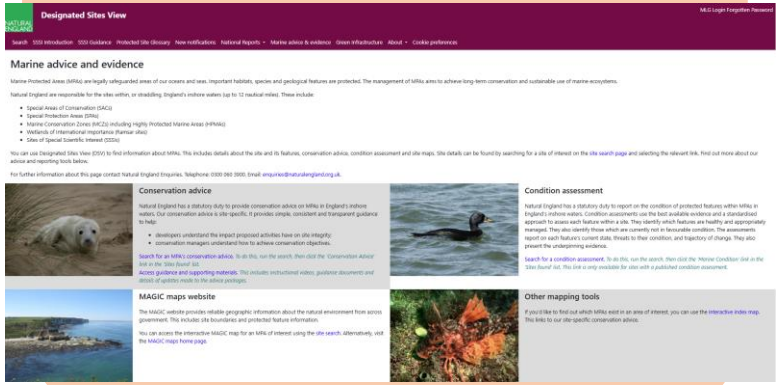
Explanation of the EQ: The purpose of this evaluation question is to understand how external pressures may be impacting the MPA to provide the context for later evaluation questions around MPA changes in condition (EQ 1.5) and the degree to which these are determined by the MMO Byelaw. A site that is subject to external pressures that result in impacts on the features, is unlikely to achieve conservation targets through MPA management.

Methods and data sources:

The evaluation question is addressed in four steps, the approach and level of detail will depend on the information available. The assessment will require a degree of judgement unless direct monitoring and detailed reports are available. In most instances the approach will be a vulnerability assessment based on designated feature, likely exposure and sensitivity. The steps and sources are listed below, the condition assessment steps are shown in the **next slide** as a flowchart.

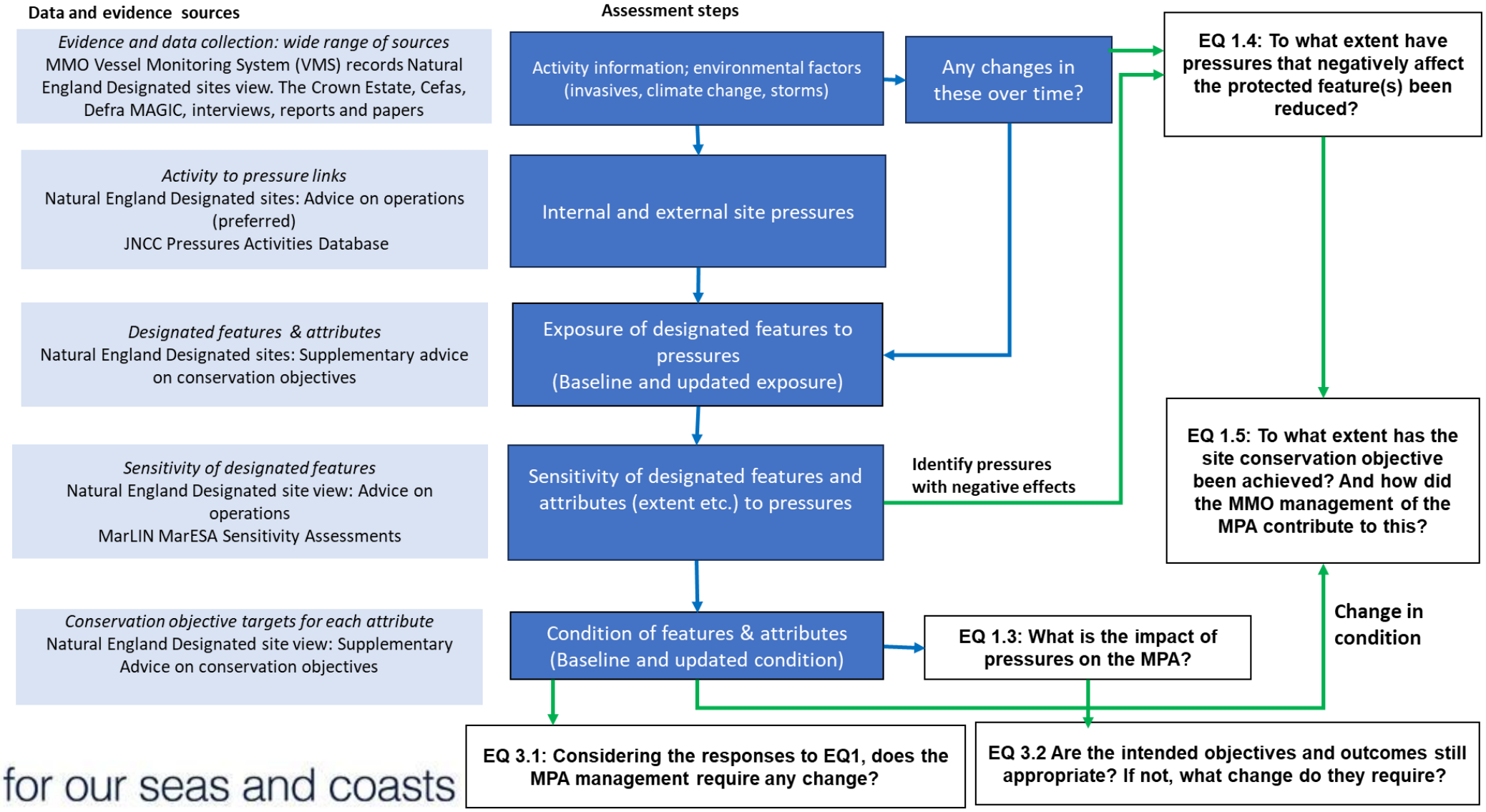
Step	Question and approach	Data Source(s)
1	What are the site designated features? **Identify these from online resources**	Natural England Designated Sites View: Site page, feature maps, information on features JNCC
2	What is the exposure of the site and designated features to external pressures that they are sensitive to? **Identify the activities and pressures the designated features are sensitive to from online reosurces.**	Main: Natural England Designated Sites View: Advice on Operations Additional information: MarLIN website for habitat information and sensitivity JNCC Pressures Activity Database (PAD) database to understand pressures linked to activities
3	What is the exposure of the site and designated features to external pressures that they are sensitive to? **What activities and other sources of pressures are occurring within and outside the MPA (e.g., pipelines, cables, invasive species, climate change)**	Natural England Designated Sites View: Supplementary Advice on Conservation Objectives **Evidence Review**:JNCC and Natural England, web searches for relevant reports and papers **Key data sources**: Defra MAGIC Map, Cefas, The Crown Estate, MMO licensed activities, MMO and other agency reports **Interviews with key stakeholders:** Natural England site officers, coastal partnerships. IFCAs, MMO colleagues
4	What are the impact of these on the site designated features? **From evidence, consider what is the likely impact of the pressures on the designated features? Are they vulnerable, i.e., sensitive and exposed?**	Based on data from Steps 1-3. See next slide for condition assessment flowchart

Key data source for EQ 1.3- EQ 1.6:
Natural England Designated Sites View
Provides information on site, features, sensitivity to activities and pressures (Advice on operations), conservation objectives and condition assessments.



EQ 1.3: What is the impact of pressures on the MPA? (Slide 2)

Outline condition assessment for EQ 1.3 and links to EQ 1.4, 1.5 and EQ 3.1 and 3.2



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EQ 1.4: To what extent have pressures that negatively affect the protected feature(s) been reduced?

Explanation of the EQ: This evaluation question seeks to identify which of the pressures identified in EQ 1.3 have been reduced and which may still be active and preventing the site reaching favourable conservation status. The assessment will consider environmental issues affecting the site, pressures external to the site that may impact it and activities within the site that have been restricted by the MMO byelaw.

This question is framed in two parts:

- **Sensitivity of designated features** (informed by EQ 1.3) Are pressures resulting from human activities (including fishing) and environmental change having a negative impact on the protected features?
- **Exposure:** What is the level of pressure within the MPA (intensity, frequency) and has this reduced and if so, how? Do these changes result from MMO management or natural change or other, i.e., ceased due to other interventions. Will include consideration of what the byelaw has achieved (EQ 1.1 & EQ 1.2).

Indicators and data sources

The data and the analytical framework outlined for EQ 1.3 (designated features sensitivity and exposure) are directly applicable to this EQ, with specific consideration of changes in pressure as shown in the previous flowchart. More detailed site-specific information may be available to conduct the assessment and local site officers, managers and stakeholders may be a useful resource. Identifying local coastal partnerships and networks may be useful to find relevant, knowledgeable stakeholders.

Source	Indicator	Data
EQ 1.1 assessment	Change in pressure	-
EQ 1.2 assessment	Change in pressure	-
EQ 1.3 Which pressures negatively impact the feature	Designated feature sensitivity	-
EQ 1.3 The presence or absence of these pressures within the MPA in the past (relevant to the timescale of the byelaw) and the current status of these	Change in pressure	
Information for site from MMO (VMS data for fisheries*) and additional data gathering: will vary by site	Change in pressure	As for EQ 1.3 (including Natural England Designated Sites View, other agencies, monitoring and reports, VMS data if available for changes in fishing activity); interviews

*Raw VMS data not available to this project, sourced indirectly via MMO impact assessment reports

EQ 1.5: To what extent has the site conservation objective been achieved? And how did the MMO management of the MPA contribute to this? (Slide 1)

Explanation of the EQ: This question considers whether the site conservation objectives have been achieved. It may be based on a condition assessment by Natural England if available or require a subjective assessment based on the available activity and pressure evidence as to whether the site is likely to achieve, fail or be progressing towards the conservation target.

Methods and data sources:

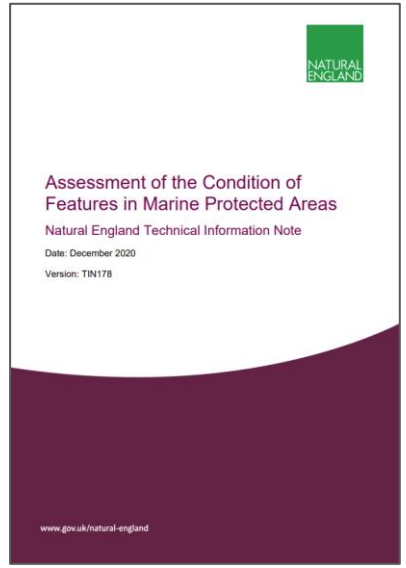
The approach and level of detail will depend on the information available. The assessment will require a degree of judgement unless direct monitoring and detailed reports are available. In most instances the approach will be a vulnerability assessment based on designated feature, likely exposure and sensitivity. The steps and sources are listed below.

Step 1: Is there a condition assessment for the site that post-dates the byelaw? Check Natural England Designated Sites view for existing condition assessments and the details in the supplementary advice on conservation objectives. This may answer EQ 1.5 if an updated assessment, considering the byelaw is available.

If there is no condition assessment, the evaluation must consider the information gathered for EQ 1.3, EQ 1.4 and how these may influence the condition of the site.

Step	Question	Data sources
2	What are the conservation targets (restore/reduce/maintain etc.) for each attribute (e.g., extent and distribution, species composition, sediment composition and distribution) for the site designated features?	Natural England Designated sites view: Supplementary advice on conservation objectives for the feature attributes
3	Are the designated features exposed to pressures that will prevent the attribute target being met? (see example; next slide)	Sensitivity of features (EQ 1.3), exposure (EQ 1.4).
4	Summarise evaluation - are the conservation targets met or not and therefore is the Conservation Objective met?	Step 2 and Step 3

See also Natural England guidance



EQ 1.5: To what extent has the site conservation objective been achieved? And how did the MMO management of the MPA contribute to this? (Slide 2)

Step 2: What are the conservation targets (restore/reduce/maintain etc.) for each attribute (e.g., extent and distribution, species composition, sediment composition and distribution) for the site designated features?

Data source: Natural England Designated sites view: Supplementary advice on conservation objectives for the feature attributes. Document attributes and targets for each designated feature.

Attribute (examples)	Target (examples)
Distribution: presence and spatial distribution of biological communities	**Restore** the presence and spatial distribution of subtidal sandbank communities.
Structure: species composition of component communities	**Restore** the species composition of component communities.

Step 3: Are the designated features exposed to pressures that will prevent the attribute target being met?

Indicator	Data sources	Assessment
Exposure of designated feature to activities and pressures and any change	EQ 1.3 and EQ 1.4: Evidence gathered on activities and pressures affecting the MPA and how these have changed	Quantitative or qualitative assessment of exposure
Sensitivity of designated feature attributes to the pressures	EQ 1.3 Sensitivity of designated features to identified pressures. Any additional information, such as monitoring or survey and advice from Natural England (Designated Sites View: Supplementary Advice on Conservation Objectives)	Translate sensitivity assessments to designated feature attributes considering pressure type and attribute

EQ 1.5: To what extent has the site conservation objective been achieved? And how did the MMO management of the MPA contribute to this? (Slide 3)

Step 4: Are the designated features still exposed to pressures that will prevent the attribute target being met?

Summarise evaluation, based on steps 2 and 3, considering if the conservation targets are likely to be met or not and therefore is the Conservation Objective likely to be met? Pressure removal is likely to mean that attributes with a maintain status are maintained. Attributes with a restore or recover target are likely to be progressing towards target or have met target (depending on recovery timescale) if all pressures to which the feature and attribute are sensitive are reduced. This step requires interpretation of various information/evidence and would benefit from ecological expertise. Natural England staff are able to provide useful advice.

Example interview question

- Have there been any signs of improvement in condition?

EQ 1.6: What other environmental impacts in the MPA have occurred due to the MPA management?

Explanation of the EQ: This EQ considers whether the MPA management has resulted in environmental impacts not considered in the preceding EQ.

Potential Environmental impacts from pressure removal may include:

- Changes to habitats, changes in type, where sensitive or fragile species recover, e.g., change from sandflat to seagrass.
- Changes to water column characteristics, decreased turbidity where bottom disturbance is reduced.
- Changes in biological assemblage and interactions, changes in structure e.g., type and abundance of species present.

Effects reported in the scientific literature include:

- Population changes: predator and prey relationships: In the Lundy no take zone, lobsters grew larger and predated on brown crabs (edible crab)*.
- Dietary changes and habitat suitability: In the North Sea plaice box, the lack of disturbance reduced food for juvenile flatfish*.
- Spillover effects: Populations of targeted species increase outside the MPA due to better larval supply or movement of juveniles and adults*.
- Increases in more fragile epifauna and kelps or seagrass.

(**NOTE**: *changes in mobile species may not impact Conservation Objectives which focus on the designated habitat and species features)

Sources: It is our experience for the case studies that there was no information to assess this EQ. Where there are impacts from pressure removal, this would be evidenced by site monitoring and survey, and reported either in the reviewed literature or by interviewees. There is little in-situ monitoring for subtidal sites given costs and inaccessibility.

Example interview question

- Are there any benefits, e.g., from spillover effects from improved habitats/species in the MPA as a result of the MPA management?

EQ 1.7: To what extent, and how, has MPA management affected other marine areas outside of the MPA?

Explanation of the EQ: The evaluation question seeks to understand changes in activity levels and distribution relevant to the MPA / management measure and potential impacts.

Sources: The evaluation question will be informed by the data gathered for the preceding steps and will use similar approaches to those outlined above. The assessment will build directly on the assessment in EQ 1.2 of:

- Displacement of activities to other areas outside the MPA management area.
- Change in effort by other stakeholders not directly affected by the management, in areas where displaced fishers/anglers/sailors have increased effort/activity.

Potential impacts would result from displacement of activities to sensitive habitats. Changes in suspended sediment (reductions) or changes in populations of species may theoretically result from changes in fishing activities but would require monitoring data if interviewees are not aware of any changes.

Note: It is our experience for the case studies that there was little or no information to assess this EQ. Interviewees did not identify any significant changes. For Studland Bay, qualitative interview data suggested that there had been insignificant changes in activity. Vessel Monitoring System (VMS) data at vessel level would indicate displacement to other areas.

2. Socio-economic impact of MMO management

Evaluation questions

EQ 2.1: What have the impacts been on stakeholders directly affected by MMO management?

EQ 2.2: What have the impacts been on stakeholders indirectly affected by MMO management?

EQ 2.3: What have the social and economic impacts been on the relevant local economy and community?

EQ 2.1: What have the impacts been on stakeholders directly affected by MMO management? (Slide 1)

Explanation of the EQ: This evaluation question examines how stakeholders who had to change their behaviour because of the MPA management (i.e., those undertaking activities within the management area that are the subject of the management) are affected from an economic and/or social perspective. Potential impacts for stakeholder groups directly affected by MMO current and expected MPA management include:

- Commercial fishers: impacts may include changes in catch (composition, volume and/or value); changes in fishing costs (e.g., due to longer steaming times to other fishing grounds; changes in time fishing due to lower catch per unit effort (CPUE); investments in alternative fishing gears; gear conflict). Changes in fishing patterns and/or performance may have associated impacts of fisher wellbeing.
- Recreational users (e.g., angling and boating participants): impacts may include changes on recreational welfare (change in level of participation or utility per trip).
- Recreational service providers (e.g., charter boat operators): impacts may include changes in revenue (change in participation or prices) and costs (trip distance or duration).

Indicators and data sources

Where possible, economic and social indicators should be collated and analysed for the pre- and post-management period. In many cases pre-management data may not be available – primary research may support collection of pre-management data or opinion on the extent of change post-management.

Key indicators	Data sources
Commercial fish landings: volume/value	Secondary data fisheries analysis (Type A and potentially Type B and C – see Slide X)
Commercial fishing costs and fisher welfare	Site monitoring surveys Primary research with managers & stakeholders
Recreational use and utility	Site monitoring surveys Primary research with managers & stakeholders
Recreational service provider costs and revenues	Primary research with recreational service providers
Contribution of MPA management and other factors	Secondary data on other issues affecting target activity Primary research with managers & stakeholders

EQ 2.1: What have the impacts been on stakeholders directly affected by MMO management? (Slide 2)

Methods and analysis

Steps:

- Step 1: Establish pre-management baseline understanding of target activity, within site and management area.
- Step 2: Establish post-management understanding of target activity
- Step 3: Examine extent to which the management has contributed to the observed change between baseline and post-management period

Examining 'contribution':

Observed changes in directly affected activities may be the result of the management. However, they may also have been influenced by other factors. The relative contribution of the management vs these other factors should be examined. The aim is to produce a credible, evidence-based narrative of the contribution that the management made to the observed changes.

- Op1: Before-and-after comparison
- Op2: Comparison to a control group
- Op3: Identify/collect evidence on the 'contribution' of the MPA management and other factors

Example interview questions

- Has there been any economic impact on directly affected fishers?
  - Change in landings?
  - Change in investment costs (for gear transition)?
  - How has the management affected fishing costs?
  - How has the management affected fishing efficiency?
  - [prompt for how any of this might have changed over time since management was introduced]

EQ 2.2: What have the impacts been on stakeholders indirectly affected by MMO management? (Slide 1)

Explanation of the EQ: As a complement to the previous evaluation question, this evaluation question looks at groups of stakeholders indirectly affected by the management (i.e. those undertaking activities inside or outside the MPA who are not the subject of the management, but who may still change their behaviour or actions because of the MPA). The question looks at how they may have changed their behaviour because of the MPA management (or the effects of the management) and how they are affected from an economic and/or social perspective. For example, although a ban on bottom trawling does not directly affect fishers using other types of gear in the MPA, these fishers may be affected by changes in the bottom trawl activity caused by MPA management.

Indicators and data sources

Where possible economic and social indicators should be collated and analysed for the pre- and post-management period. In many cases pre-management data may not be available – primary research may support collection of pre-management data or opinion on the extent of change post-management.

Key indicators	Data sources
Commercial fish landings: volume/value	Secondary data fisheries analysis (Type A and potentially Type B and C – see Slide X)
Commercial fishing costs and fisher welfare	Site monitoring surveys Primary research with managers & stakeholders
Recreational use and utility	Site monitoring surveys Primary research with managers & stakeholders
Recreational service provider costs and revenues	Primary research with recreational service providers
Contribution of MPA management and other factors	Secondary data on other issues affecting target activity Primary research with managers & stakeholders

EQ 2.2: What have the impacts been on stakeholders indirectly affected by MMO management? (Slide 2)

Methods and analysis

Steps:

- Step 1: Establish pre-management baseline understanding of target activity, within site and management area.
- Step 2: Establish post-management understanding of target activity.
- Step 3: Examine extent to which the management (or its effects) has contributed to the observed change between baseline and post-management period.

Example interview questions

- Has there been any economic impact on indirectly affected fishers?
  - Change in landings?
  - How has the management affected fishing costs?
  - How has the management affected fishing efficiency?

EQ 2.3: What have the social and economic impacts been on the relevant local economy and community? (Slide 1)

Explanation of the EQ: This evaluation question looks at the broader socioeconomic effects on the local economy and community that have resulted from the MPA management. The question seeks to understand any potential conflict, any differences in the activities that occur that may have spillover economic effects (e.g., if there is a change in the number of users of the MPA who may be engaging with local businesses).
Potential impacts for the relevant local economy and community include:

- Social conflict and disagreement: impacts may include disagreement with MMO and enforcement, social conflict due to spatial squeeze
- Local businesses: changes in revenue and costs due to different numbers of visitors

In most cases, the answer to this evaluation question will be informed by primary research.

Indicators and data sources

Where possible, economic and social indicators should be collated and analysed for the pre- and post-management period. In many cases pre-management data may not be available – primary research may support collection of pre-management data or opinion on the extent of change post-management.

Key indicators	Data sources
Social conflict and feeling around the MPA management	Primary research with a range of stakeholder groups
Local business revenue	Secondary data from local businesses Primary research with local businesses
Local business costs	Secondary data from local businesses Primary research with local businesses
Number of visitors to the MPA	Manual boat count data from MMO Annual survey Primary research with stakeholders

EQ 2.3: What have the social and economic impacts been on the relevant local economy and community? (Slide 2)

Methods and analysis

Steps:

- Step 1: Establish pre-management baseline understanding of target activity, within site and management area.
- Step 2: Establish post-management understanding of target activity.
- Step 3: Examine extent to which the management has contributed to the observed change between baseline and post-management period.

Example interview questions

- Have there been any benefits for recreational users since the management was introduced?
  - Which user groups, what/why?
- Have there been any negative impacts on recreational users?
  - Which user groups, what/why?
- Has there been a change in conflict between different recreational users since the management was implemented?
  - What impacts has this had?
  - What is being done to mitigate/manage this conflict?
- Has there been a change in the number and types of conflicts between fishers?
  - What impact has this had?
  - What is being done to manage/mitigate this conflict?
  - How has the management affected fisher wellbeing?
- Are there any social issues that have come about as a result of the management?
- Has there been any benefits for the local economy?
- Have there been any negative impacts on the local economy?
- Has there been any effect on local businesses?
- Have there been any benefits for the local community?
- Have there been any negative impacts on the local community?
- Has there been community support for the management measure?

3. Changes to MMO management

Evaluation questions

EQ 3.1: Considering the responses to EQ 1, does the MPA management require any change?

EQ 3.2: Are the intended outcomes and impacts still appropriate? If not, what change do they require?

EQ 3.3: Could intended outcomes and impacts be reached while at the same time reducing negative impacts (incl. costs) on other stakeholders?

EQ 3.1: Considering the responses to EQ1, does the MPA management require any change?

Explanation of the EQ: If an MPA is failing to meet its conservation objectives or is not showing sufficient signs of progress towards those objectives, it might be necessary to make the management more stringent. This EQ therefore has a backward-looking part – have objectives been achieved? – and a forward-looking part – what management changes should be made?

Examples of changes identified in the case studies and in wider site reports and assessments

- Persistence of private swinging (block and chain moorings) in areas of seagrass bed outside a Voluntary No Anchor Zone, require ongoing management through licensing.
- Expansion of buffer zones required around sensitive features in some sites.
- Changes in activity patterns (intensity) since byelaw implementation, necessitate extension of byelaws to other activities/gear types.

Note: Where compliance is low, enforcement rather than a change in management may be indicated.

Indicators and data sources

Key indicators	Data sources
State of the protected feature(s) following the MPA Management	EQ 1.5
Residual pressures (and their causes) affecting the protected feature(s)	EQ 1.1 – compliance with the management EQ 1.4 – residual pressures from activities negatively impacting the protected feature(s) Activity assessments for site already undertaken as part of impact assessments
Stakeholder responses	Stakeholder interviews may provide valuable feedback on management for consideration

Methods and analysis

Step 1: Consider the state of the features in the MPA (informed by answers to EQ 1).
Step 2: Consider the intended objectives and outcomes of the MPA and whether residual pressures are impeding these (informed by answers to EQ 1.4 and EQ 1.5).
Step 3: Consider stakeholder responses around site management, what is working, what isn't, what changes are required.
Step 4: Evaluate need for additional management and approach where risks to intended objectives remain.

EQ 3.2: Are the intended objectives and outcomes still appropriate? If not, what change do they require?

Explanation of the EQ: This question looks at considering the conservation objectives the MPA was introduced to achieve and changes in the MPA that may have occurred since, whether the intended objectives and outcomes of the management measures are still appropriate. Reasons why the intended objectives and outcomes may no longer be appropriate include:

- There are irreversible external pressures on the features which cannot be managed. These could include impacts caused by climate change such as changes in sea temperatures or invasive species.
- The damage to the feature which caused the introduction of the management measures was already irreversible and the evaluation has found (under EQ 1) that it has not recovered and is unlikely to recover. In this case an assessment should take place whether other environmental benefits are derived from the MPA and whether their protection should be included in the MPA. This may require legislative change.
- There have been negative unintended effects within the MPA due to the management (EQ 1.6) or outside of the MPA but caused by the MPA (EQ 1.7).
- There have been policy changes with respect to the protection of the seas around the UK.

Indicators and data sources

Key indicators	Data sources
State of the features in the MPA	Response to EQ 1, in particular 1.2, 1.6 and 1.7
Changes and role of the external pressures on the feature	Response to EQ 1.3
Impact of MPA management on areas around the MPA	Response to EQ 1.7
Information on policy changes	Defra, NE and JNCC communication

Methods and analysis

Step 1: Consider the intended objectives and outcomes of the MPA
Step 2: Consider the state of the features in the MPA (informed by answers to EQ 1).
Step 3: Consider changes and the role of external pressures on the feature.
Step 4: Consider unintended impacts on surrounding marine areas by investigating links between current management and areas outside the MPA (informed by answer to EQ 1.7).
Step 4: Consider any information on policy changes.
Step 5: Come to an overall conclusion using answers to the above.

Other key considerations:
Timing of impacts: Identifying that a feature is damaged requires knowledge on the length of time it would take for the feature to have recovered. Underestimating this time and recommending changes in objectives could mean that a feature might still have recovered without the change.
Proportionality of changes in objectives: Changing conservation objectives may require legislative change, an Impact Assessment, consultation, and more, creating costs to MMO and stakeholders. While MPA management should be appropriate to the risks, it should also be proportionate.

EQ 3.3: Could intended outcomes and impacts be reached while at the same time reducing negative impacts (incl. costs) on other stakeholders?

Explanation of the EQ: Irrespective of whether the management measures require change (EQ 3.1), it is good practice to review current regulation and management measures to assess whether the regulatory burden on those affected by the intervention can be reduced (without compromising the ability of achieving the ultimate objectives of the management). The regulatory burden, i.e., the negative social and economic impacts of the regulation were evaluated under EQ2. A reduction in the regulatory burden could be achieved by, for example, spatial or temporal changes in the management area to facilitate activity performance.

Indicators and data sources

The response to this evaluation question is informed by responses to previous evaluation questions on the effects and socio-economic impacts of the management. The answers to these can be supplemented with management change options understood through primary research with managers and stakeholders.

Key indicators	Data sources
Performance and sufficiency of the management for achieving site conservation objectives	EQ 1
Clarity on the regulatory burden cause by the management	EQ 2
Management change options for addressing regulatory burden	Interpretation from EQ 1/2 Primary research with managers and stakeholders

Methods and analysis

Step 1: Consider the outcomes and impacts of the management measures (informed by scoping research)
Step 2: Consider the negative impacts on stakeholders (informed by answers to EQ 2) and whether they are caused by the MPA management or by other external factors
Step 3: Read through responses to EQ 1 and EQ 2 and consider any options that may have come up as alternative ways of managing the MPA.
Step 4: Consider whether any of these alternative options are likely to reduce negative impacts on other stakeholders, while still achieving the conservation objectives.

A key consideration:
Proportionality of reduction in management: Even if the change in management is aimed at reducing the regulatory burden, it may require change in business practices. Fishers may have disposed of prohibited gear, purchased new equipment, or moved away altogether. While these are sunk costs from the regulator's perspective, regulatory uncertainty has costs into the future.

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Phase 3: Reporting

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The Reporting phase allows presentation of the evaluation findings

Purpose: Ensure that reporting on impact evaluation findings is clear and standardised; detailing the contents of the impact evaluation report and the presentation of research findings and the language used.

Approach:

- Draft and summarise the results of the impact evaluation
- Quality assure the results and their presentation internally (e.g., by an MMO manager or evaluation professional) and/or external (e.g., validate the findings with external experts or key stakeholders)

Output: The final impact evaluation report including recommendations for future management of the MPA site.

Presenting the impact evaluation results

Sections of the impact evaluation report:

1. **Site context and background:** Provide context specific information in relation to the MPA. For example, designation and management type, and habitats and features. Include maps of the MPA site.
2. **Evidence used:** The literature, data and research (for example, interviews) should be presented and summarised in a key sources table (Slide 41).
3. **Impact evaluation results:**
   - Complete the impact evaluation 'summary' table based on the evaluation results. In the table, briefly answer the evaluation questions and apply confidence ratings using the confidence matrix (Slide 42).
   - Provide a full response to each evaluation question in turn (Slide 43).

Tables: *All of the tables in this section can be copied and pasted to use in each impact evaluation.*

Presenting the impact evaluation results

- **Key sources table:** Detail all of the evidence reviewed to write the site context and background, and to carry out the impact evaluation. This includes key literature, data and research.

Data reviewed	Key sources
Key literature	Title and (date) with full reference in reference list
Data	Title and (date) with full reference in reference list
Interviews (number of interviewees in total)	List of interviewees, for example: MMO Coastal Officers (#) Fishing industry representatives (#)

Presenting the impact evaluation results

Impact evaluation summary table:

Present the impact evaluation conclusion in one or two words. The example summary table provides suggested words for each evaluation question. Summarise the impact results in a few sentences.

Present the confidence conclusion (high, medium, or low) and provide a brief explanation to justify the conclusion. Log the key sources used using short-hand references.

Copy and paste this impact evaluation summary table into your Evaluation Report document & complete

Confidence assessment:

Assess the confidence in the evaluation question answer, based on the quality/robustness of the data sources used and the extent to which those sources confirm or contradict each other.

Confidence score assessment matrix	Multiple sources confirm similar impacts	More sources confirm than contradict	Multiple sources are contradictory
Robust data source	High	High	Medium
Moderately robust data source	High	Medium	Low
Weak data source	Medium	Low	Low

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Evaluation question	Answer to evaluation question	Confidence assessment
EQ 1.1: Have the MMO management measures been complied with?	Good / moderate / low compliance Short description	High / medium / low Short description Sources
EQ 1.2: How have activities occurring in (or near) the MPA changed because of the management?	Many / some / no changes Short description	
EQ 1.3: What is the impact of external pressures on the MPA?	Some / none Short description	
EQ 1.4: To what extent have pressures that negatively affect the protected feature(s) been reduced?	Most / partial / none Short description	
EQ 1.5: To what extent has the site conservation objective been achieved? And how did the MMO management of the MPA contribute to this?	Most / partial / none Short description	
EQ 1.6: What other environmental impacts in the MPA have occurred due to the MPA management?	Some / none Short description	
EQ 1.7: To what extent and how has MPA management affected other marine areas outside of the MPA?	Some / limited extent Short description	
EQ 2.1: What have the impacts been on stakeholders directly affected by MMO management?	Positive / negative / mixed Short description	
EQ 2.2: What have the impacts been on stakeholders indirectly affected by MMO management?	Positive / negative / mixed impacts Short description	
EQ 2.3: What have the social and economic impacts been on the relevant local economy and community?	Positive / negative / mixed Short description	
EQ 3.1: Considering the responses to EQ1, does the MPA management require any change?	Yes / no Short description	
EQ 3.2: Are the intended objectives and impacts still appropriate? If not, what change do they require?	Yes / no Short description	
EQ 3.3: Could intended outcomes and impacts be reached while at the same time reducing negative impacts (incl. costs) on other stakeholders?	Yes / no Short description	

Presenting full results for each evaluation question

- Synthesise the available evidence to provide full answers to each evaluation question in turn. Write the key message(s) and then elaborate.

- Ensure the answers are appropriately referenced.

- When reporting results, it is useful to be clear about the baseline, what happened in the period after the management, and what contribution the management has made to the observed change.

For example:

Prior to implementation of the management in 2023, the data suggests "X" was happening at level "Y"
In the period after 2023, the data suggests that "X" has increased to level "Y"

The observed change in "X" was largely due to the MPA management; however, changes in "Z" have also included the level of "X" in the site

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Annex A1: MPA management Theory of Change

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Introduction to the MPA management Theory of Change

The Theory of Change (ToC) describes the causal pathways through which MPA management measures are expected to deliver on conservation objectives and generate other impacts that are relevant to the MPA five-year review. The ToC on the next slide describes the activities, outcomes, impacts, and secondary and indirect effects that may occur as a result of the management measures.

- **Activities:** What is the MMO doing? What are the management activities?
- **Initial outcomes:** How does this affect the behaviour of marine users/activities?
- **Intermediate outcomes**: What follow-on changes occur?
- **Final outcomes:** What is the result of these changes on the targeted environmental features, activities and individuals?
- **Impacts:** What is the longer-term effect of the change on the environment, economic sectors and society? Who is affected and how?

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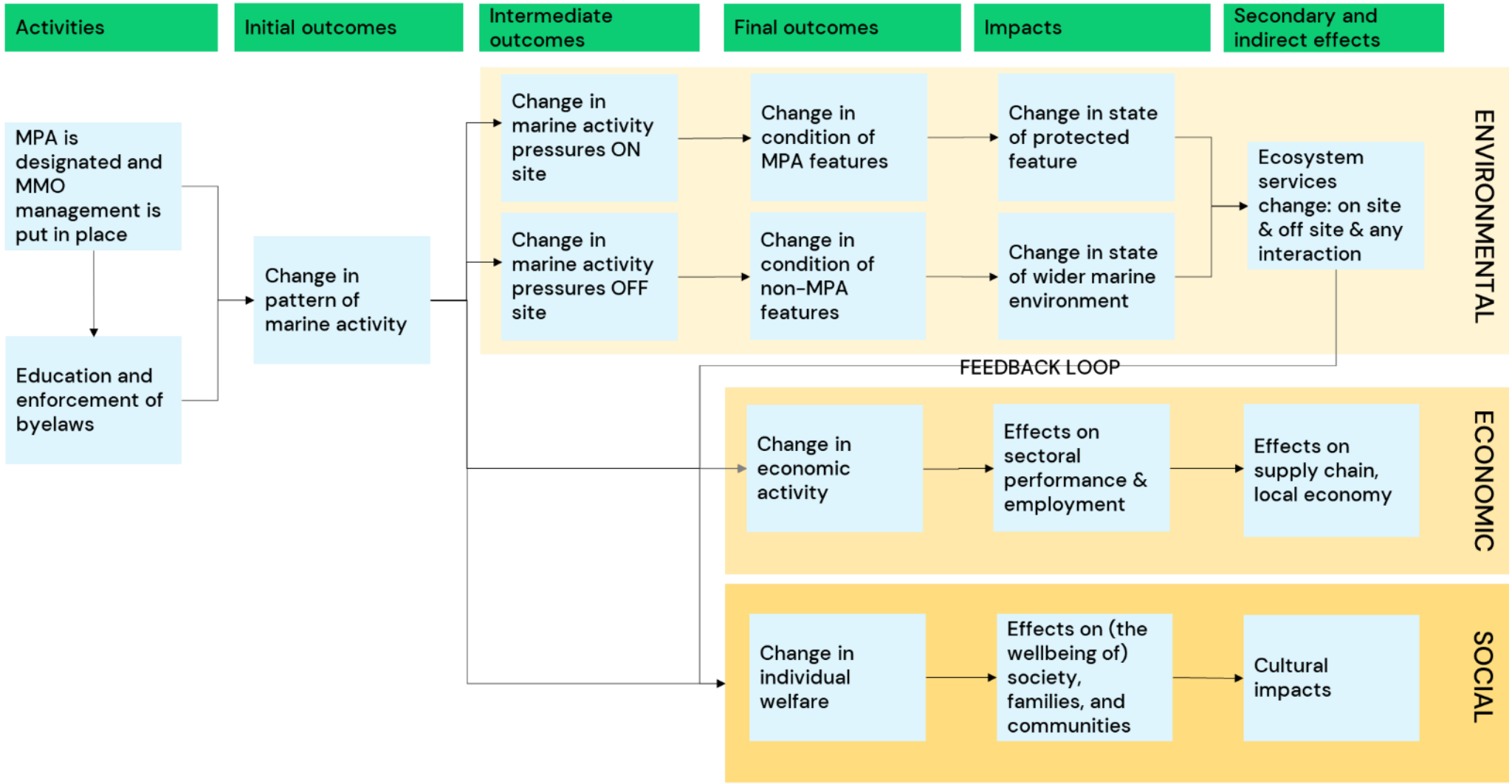
MPA management Theory of Change



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Management activities and compliance

The activities column of the Theory of Change diagram shows the management activities that MMO may implement. These will be most effective when accompanied by education and enforcement.

- Once management is put in place, it is expected that there will be a change in marine activity as marine users adjust the nature or location of their activities to comply with the management requirements.
- Education and enforcement of the management encourages compliance. For example, a byelaw banning bottom trawled fishing gear use within an MPA, accompanied with education and enforcement of said byelaw, will mean fishers using bottom-towed fishing gear are expected to cease trawling within the prohibited area. This fishing activity may be displaced to other areas, to other permitted gear types, or non-fishing activities.
- The extent of compliance and displacement activity will be influenced by multiple factors including the availability of other fishing grounds, other fisheries management, economic incentives and fisher decision-making behaviours.

Environmental effects of MPA management

MMO implements its activities with the aim of enabling the achievement of MPA conservation objectives. The uppermost section of the ToC, following arrows left to right, describes the logic through which this is expected to occur.

- Following a change in the nature/pattern of marine activity, the pressures affecting the MPA features will change. Management is targeted at activities thought to be detrimental to the condition of the environmental features protected by an MPA. The removal or reduction of these pressures is therefore expected to result in a change (improvement) in the condition of the protected MPA feature. Over time, this change in feature condition will impact on the state of the protected feature e.g., change it from unfavourable to favourable condition. The nature and rate of change is dependent on the adequacy of the management (i.e., whether it sufficiently addresses the pressures affecting feature condition) and the baseline and response characteristics of the feature. It is also dependent on whether other pressures not targeted by MPA management change (e.g., permitted types of fishing within the MPA, licensable activities, natural rather than human pressures e.g., storms, climate change).
- A change in the pattern of marine activity may also lead to a change in pressures outside the MPA (i.e., off-site). For example, fishers prohibited from operating within an MPA may target alternative areas outside the MPA. This may lead to a change (degradation) in the condition of features outside the MPA, and over time the state of the wider marine environment. The effect of displacement on the environment depends on the sensitivity of the habitat/species where activity is displaced to, the pressures caused by the activity, and their significance compared to other pre-existing human and natural pressures.
- Both changes in the state of MPA protected features and changes in the state of the wider marine environment are expected to lead to ecosystem service changes, which affects the flow of economic and social benefits, for example, via positive impacts on fish stocks, protection of habitats that lessen the impacts of storm surges/coastal erosion , and protection of plants and calcifying organisms that lead to increased carbon sequestration.

Economic effects of MPA management

The middle section of the ToC, following arrows left to right, describes the logic through which the economic effects of MPA management are expected to occur.

- A change in the pattern of marine activity may lead to a change in the economic performance of those activities. For example, a fisher displaced from an MPA may increase fishing effort in an alternative area which may change the degree of competition between vessels, their catch rates/composition and ultimately their fishing costs and/or landings and revenues.
- This may have wider impacts on sectoral performance and employment. There may be indirect effects on the supply chain and local economy, the significance of which will depend on the supply chain/local economy's dependence on the affected activity.
- Environmental changes as a result of MPA management may feedback to affect the performance of economic activities reliant on ecosystem services. For example, spillover benefits may support improved fishing performance.
- Changes in economic performance may also be influenced by external factors e.g., other sectoral management, spatial squeeze from the presence of other marine activities, availability of quota, broader market dynamics.

Social effects of MPA management

The bottom section of the ToC, following arrows left to right, describes the logic through which the social effects of MPA management are expected to occur.

- Changes in the nature/pattern of marine activity may also affect individual welfare and have societal effects, both positive and negative. For example, if fishers must relocate, leave the industry, or find themselves in conflict with other fishers or with the MMO, this may affect individual welfare and impact wellbeing within society, families, and communities.
- Environmental changes as a result of MPA management may feedback to affect societal use and non-use benefits from ecosystem services. This may include, for example, the quality of recreational activities, opportunities for research and education, existence and bequest values (marine area protected for the use and enjoyment of future generations).

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Annex A2: Mapping evaluation questions to Post-Implementation Review questions

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Mapping of evaluation questions to PIR questions

Recommended PIR reporting template sections	Section / EQ of the impact evaluation
What were the policy objectives of the measure?	Evaluation context section
What evidence has informed the PIR?	Evidence summary section / table + each confidence summary for each evaluation question
To what extent have the policy objectives been achieved?	EQ 1.1,1.4 and 1.5
What were the original assumptions?	Not included
Were there any unintended consequences?	All EQ 1 and 2
Has the evidence identified any opportunities for reducing the burden on business?	EQ 3.3
How does the UK approach compare with the implementation of similar measures internationally, including how EU member states implemented EU requirements that are comparable or now form part of retained EU law, or how other countries have implemented international agreements?	Not included

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Annex A3: Primary and secondary data

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Scoping secondary data

Certain key literature and data will be important to review for the evaluation. Scoping the relevant data sources allows relevant secondary sources to be consulted and acquired for the evaluation.

Key secondary data sources

- MMO MPA Site Assessment
- MPA / management Impact assessment
- JNCC website/ NE designated sites view portal
- Review documents
- Consultation documents
- Monitoring data
- MMO fisheries data
- Defra MAGIC Map
- Explore Marine Plans
- Public register of marine licence applications and decisions

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Scoping primary data

Identifying relevant stakeholders early on will allow all groups to be approached and primary research to be conducted in good time.

Interview and/or survey questions should be based around the evaluation questions and their target indicators, and tailored to the relevant stakeholders.

Considerations:

- Interview vs survey data; Qualitative vs quantitative data: Consider the type of data that is required, which type of research might be best able to capture it. Be realistic about the ability to access stakeholders and likely response rates.
- Extent of primary research: The extent of primary data collected should be proportionate to the significance of the expected impacts, mindful of stakeholder fatigue, and mindful of evaluation resources.
- Sequencing of interviews: It is suggested that interviewers start by speaking with MMO internal teams and MMO coastal officers, then speak to other organisations, and finally speak with local stakeholders such as fishers in order to iteratively build up an increasingly detailed picture of impacts (see next slide).

Consider the most relevant stakeholders to consult

MMO teams

- MMO site officer for the MPA
- MMO coastal officers relevant to the area in which the MPA is located
- MMO compliance (contact for infringements data)
- MMO data teams (contact for analysis)

Other government organisations

- Natural England
- JNCC
- IFCAs

Local stakeholders

- Directly affected stakeholders (e.g., Fishers, anglers) and their representative bodies
- Indirectly affected stakeholders (e.g., Fishers, anglers) and their representative bodies
- Local management groups
- Local community (e.g., local authority, charities, neighbourhood groups)
- Local businesses (e.g., pubs, hotels, water sports businesses, fish market, fish processing)

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Annex A4: Bespoke fisheries data analysis

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Bespoke secondary fisheries data analysis (#1)

Where sufficient analysis of fisheries data is not available via existing reports e.g., MPA site assessments, or where particular impacts are expected to be significant, bespoke fisheries data analysis should be requested from the MMO stats/spatial data teams.

Fisheries secondary data analysis	When is this analysis required?
A: On-site fishing activity	When post-management analysis of fishing activity and pressures within the MPA and the management area are not already available from other secondary sources.
B: Off-site fishing activity displacement analysis	When displacement effects are expected to have potentially significant impacts on the environment off-site (i.e., in areas where prohibited activity is displaced to) or on the economic performance of displaced vessels.
C: Analysis of comparison group for displaced vessels	When displacement effects are expected to have potentially significant impacts on the economic performance of displaced vessels; and a suitable group of unaffected vessels can be identified. Compare the change between the affected and unaffected vessels may provide an indication of the extent to which the management has influenced the observed change in economic performance.
D: Analysis of net change of compliant gear activity	When increases in compliant gear activity within the management area may be the result of displacement of the activity from another location.

Bespoke secondary fisheries data analysis (#2)

Fisheries secondary data analysis	Key indicators	Secondary data sources
A: On-site fishing activity: How has the level and distribution of fishing effort, by gear type changed, within the MPA *and* management area, pre- and post-management?	• Number of active vessels by gear type • Fishing activity by gear type (e.g., VMS count, days at sea) • Fishing pressure (swept area ratio, gear effort e.g., pots set per day) • Fishing landings (volume, value)	Management impact assessment (pre-management period) MPA Site Assessment (pre- / post-management period) Or: Bespoke fisheries data analysis (MMO stats/spatial data team) (pre- and post-management period)
B: Off-site fishing activity displacement analysis: How has the level and distribution of fishing effort of vessels displaced from the MPA management area changed post-management? The analysis focuses only on the vessels who were active within the MPA management area, using gear types that are the subject of the management, in the pre-management period.	• Number of displaced active vessels by gear type • Fishing activity by gear type (e.g., VMS count, days at sea) • Fishing pressure (swept area ratio, gear effort e.g., number of pots) • Fishing landings (volume, value) – aggregate and by individual vessel	Bespoke fisheries data analysis requested from MMO stats/spatial data team (pre- and post-management period)
C: Analysis of comparison group for displaced vessels: How does the change in landings for displaced vessels compare to that of comparable vessels in other areas.	• Fishing landings (volume, value) – for displaced vessels and comparison group vessels	Bespoke fisheries data analysis requested from MMO stats/spatial data team (pre- and post-management period)
D: Analysis of net change of compliant gear activity: Have compliant gear type vessels that have increased activity within the site/management area increased in their overall level of activity (on- and off-site) overall, or have they relocated effort from other locations to the site/management area?	• Fishing landings (volume, value) on/off site – for compliant gear vessels	Bespoke fisheries data analysis requested from MMO stats/spatial data team (pre- and post-management period)