Marine Management Organisation

Considerations of Nature Based Solutions in Marine Licensing

[MMO1388]






MMO1388: Considerations of Nature Based Solutions in Marine Licensing
November 2025

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Report prepared for:
Marine Management Organisation

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Referencing:

When referencing this publication, please cite as:

MMO (2025). Considerations of Nature Based Solutions in Marine Licensing. A report produced for the Marine Management Organisation, MMO Project No: 1388, June 2025, 100pp

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Introduction

HM Government's Environmental Improvement Plan (EIP) 2023 identifies that marine ecosystems could provide an important nature-based solution (NBS) to climate change (UK Government, 2023). Definitions of NBS vary, with the European Commission (nd) defining them as "solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience", whilst the IUCN (nd) identifies them as solutions that "address societal challenges through actions to protect, sustainably manage, and restore natural and modified ecosystems, benefiting people and nature at the same time". This study draws on the definition set out in an action plan prepared for Defra, which identified marine NBS as "actions that use marine features to protect, enhance or restore biodiversity, deliver climate change mitigation, and/or adaptation and resilience to climate-related impacts, and realise benefits for people and nature" (ABPmer and ICF, 2021).

As the organisation responsible for marine licensing in England[1], the MMO has an interest in identifying whether there is the potential to utilise licensing to enable the implementation of NBS. Enabling NBS within the licensing system could also aid the MMO in achieving its goals, for example, Goal 1 of working with partners to restore functioning marine ecosystems, introducing increased levels of protection and improvement to our marine environment (MMO, 2023).

This study considered the evaluability[2] of the marine licensing system, and, dependent on this, whether processes could enable and scale up NBS, subject to Ministerial direction. This included carrying out initial work to understand the benefits and challenges of enabling NBS through marine licensing.

The aim was broken down into five objectives:

1. Produce a systems map and review of current and existing literature on MMO marine licensing.
2. Conduct a gap analysis on where NBS can be applied within the system that considers:
    a. MMO Goal 1: Ecosystem recovery through NBS in the MMO's marine licensing system[3]; and
    b. MMO Goal 2: Manage a responsive and widely owned English marine planning framework that prescribes the strategic priorities for using and

[1] Note that the MMO's remit covers licensing inshore and offshore in England, and offshore for Northern Ireland.
[2] Evaluability covers the extent to which an activity or project can be evaluated in a reliable and credible fashion (OECD, as reported by BetterEvaluation (2025)).
[3] Note that this is the wording for a simplified version of Goal 1 from the study specifications. As stated in the background, Goal 1 in the MMO's strategic plan, MMO2030 (MMO, 2023), has a wider scope: "Work with partners to restore or recover functioning marine ecosystems, introducing increased levels of protection and improvement to our marine environment".

managing our seas, integrating terrestrial planning policies across the range of marine sectors.

3. Develop an evaluation plan with associated indicators and a stakeholder engagement plan (if required) focusing on integrating NBS options into MMO's marine licensing.
4. Propose a data collection plan to inform a Theory of Change and the overall evaluation plan.
5. Disseminate findings to the relevant teams.

The scope of the study was limited to the marine licensing service provided by the MMO. The study was carried out by Risk & Policy Analysts Ltd and ABPmer (the study team), with input from an MMO Steering Group, which was set up to feed into and oversee the work.

Methods

The study was broken down into 2 phases: scoping (Phase 1) and developing the evaluation plan (Phase 2). Scoping began with semi-structured interviews with 4 MMO staff members representing the Planning & Change Directorate, Evidence & Evaluation, Strategic Marine Licensing, Marine Planning, and the Marine Licensing Case Team. A literature review on the licensing system and NBS was carried out alongside the interviews. These activities provided information for the development of an initial systems map, which illustrates the components within the licensing service and the causal relationships between them. The map was discussed with the MMO Steering Group and revised accordingly. Utilising the map, the study team then carried out a gap analysis to highlight where NBS could be integrated into the licensing service. Information from the literature review and interviews was used to identify opportunities to enable NBS linked to these gaps. We also determined which opportunities might aid achievement of the outcomes under MMO's Goals 1 and 2 in the strategy, MMO2030 (MMO, 2023).

In Phase 2, the study team drew upon the findings from Phase 1 to develop a set of evaluation questions for a potential future evaluation of NBS and the licensing service. The questions were formulated against MMO's Goals 1 and 2 and then revised in line with feedback from the Steering Group to focus on aspects that the MMO, in particular, MMO Marine Licensing, could change or influence, rather than on aspects controlled by other organisations. We identified sub-questions, indicators and data sources for each question, presenting this information in an evaluation matrix. We also set out a data collection plan, including an engagement plan with sampling strategy.

Results

The Phase 1 literature review sets out the legislative and policy context for marine licensing, whilst the systems map demonstrates how licensing works in practice. The map identifies 5 stages within the licensing service including: pre-application; application; assessment and consultation; determination; and post-determination. These stages differ from the 7 stages in the MMO's timeline for applicants (MMO, 2024e) because the timeline focuses on the licensing process following the

validation of an application, whilst the map takes a wider high-level view, bringing in the legislation and policy supporting licensing.

Drawing on the map, the study team identified 12 gaps and associated opportunities where the licensing service could enable inclusion of NBS. Of the 12 opportunities, 6 are within the area of regulatory regime and application process, 3 link to guidance and training, 2 relate to evidence and one to policy implementation. Linking the opportunities to the desired outcomes under MMO Goals 1 and 2 suggests that all the outcomes could be supported by at least one of the opportunities. However, there may be limitations and barriers associated with some of the opportunities that would need to be worked through prior to their take up.

Taking account of the Phase 1 findings, the study team developed 7 evaluation questions that would provide the scope for a future evaluation of NBS and licensing. Questions relevant to Goal 1 included:

1. How is the marine licensing service currently working in terms of enabling NBS, and what are the barriers to improving the service so it better enables NBS?
2. To what extent, and how, does the marine licensing service need to change to better enable inclusion of NBS?
3. To what extent could these changes be undertaken within the current legislative regime?
4. How would inclusion of NBS in the marine licensing service affect costs, complexity of applications or the time taken to apply for or consent a licence?

Questions relevant to Goal 2 included:

5. How is the marine planning framework performing in terms of enabling NBS, and what are the barriers to improving the framework so it better enables NBS?
6. To what extent, and how, does the marine planning framework need to change to enable inclusion of NBS?
7. To what extent can these changes be undertaken within the current policy regime?

Each evaluation question is accompanied by sub-questions, indicators and data sources in an evaluation matrix, with indicators aiming to distinguish between the two ways of integrating NBS, i.e. through direct implementation or through enabling implementation of NBS via the licensing of marine developments. The matrix is supported by a data collection plan that identifies data needed, the proposed collection approach and likely timing of when the data will be required.

Conclusions and next steps

This study aimed to consider the evaluability of the marine licensing service in relation to whether processes could enable and scale up NBS. In conclusion, it has been determined that there are potential opportunities for the licensing service to enable and scale up NBS. As noted above, 12 opportunities were identified across 4

areas, focusing on aspects the MMO could change or influence. Examples include introducing marine licence exemptions for the delivery of small scale NBS and strengthening internal guidance and training on NBS. Whilst progressing these opportunities could aid the MMO in working towards the outcomes and goals in MMO2030, there are limitations and barriers that would need to be mitigated first. For example, the opportunity to strengthen internal guidance would require staff time and capacity to engage with the training, as well as full integration of the guidance into existing MMO training. Implementation of the evaluation plan developed in Phase 2 of this study would provide further information that could help mitigate some of the barriers and limitations and thus enable the opportunities to be taken up. The evaluation would also be expected to identify where changes might be needed to policies and potentially legislation to further enable NBS to be applied in the marine environment. These findings would help build on existing work, for instance the Review of Restoration and Restoration-linked Compensation Marine Licence Applications (ReMeMaRe MLA Review) project highlighted in the Phase 1 literature review. It would also feed into ongoing initiatives including the (Marine Planning and Licensing Programme (MPLP)), thereby benefiting the marine licensing service overall. Since the evaluation questions are organised under MMO Goals 1 and 2 from MMO2030, this should facilitate the linking of evaluation findings to wider initiatives to make progress towards the goals.

Should an evaluation be progressed, there will be a need to consider factors such as resources available, management of the evaluation and involvement of stakeholders. Whilst this current study did involve some interviews with MMO staff, any future evaluation should engage with the 6 types of stakeholder that interact with the licensing service, namely policy/management stakeholders; operational stakeholders (e.g. MMO licensing case team); applicants and associated consultants; technical advisors such as Natural England; local stakeholders (e.g. local authorities); and wider stakeholders (for example, conservation organisations). This will ensure the findings are robust and relevant and can inform the continuing evolution of the marine licensing service. Any evaluation should begin with a stocktake of completed/ongoing research projects linked to NBS and licensing (such as the ReMeMaRe MLA Review project), to ensure it builds on existing knowledge and enables continuous learning. Furthermore, data requirements will need to be discussed with the MMO licensing team at the outset, to ensure that data requests are feasible and realistic, and plans can be put in place to collate information that is not currently routinely extracted from licence applications.

1. Introduction

1.1 Background to the study

HM Government's Environmental Improvement Plan (EIP) 2023 identifies that marine ecosystems could provide an important nature-based solution (NBS) to climate change (UK Government, 2023). A variety of stakeholders have formulated and adapted a range of NBS definitions, for instance, the European Commission (nd) defined NBS as "solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience", whilst the IUCN (nd) identified them as solutions that "address societal challenges through actions to protect, sustainably manage, and restore natural and modified ecosystems, benefiting people and nature at the same time" . This study draws on Defra's operational definition of marine NBS as "actions that use marine features to protect, enhance or restore biodiversity, deliver climate change mitigation, and/or adaptation and resilience to climate-related impacts, and realise benefits for people and nature" (ABPmer & ICF, 2021).

In highlighting the potential for marine ecosystems to enable NBS to climate change, the EIP also notes that there are evidence gaps regarding the services that are provided by blue carbon ecosystems, such as saltmarsh and seagrass (UK Government, 2023). Such gaps help to explain why O'Leary et al. (2023) note the limited uptake of NBS in marine and coastal areas in comparison to terrestrial environments. There are ongoing projects to fill the evidence gaps. For example, the ongoing Natural Capital and Ecosystem Assessment (NCEA) programme aims to collect data on the extent, condition and change of England's ecosystems and natural capital, and benefits to society (Defra, 2022). Projects under the marine NCEA (mNCEA) provide outputs including advice for management of UK marine environments (Defra, 2022). The MMO is one of several organisations that contributed to the mNCEA.

In addition to the mNCEA, the MMO already has a mechanism that could be used to influence delivery of NBS within the marine environment. Under the Marine and Coastal Access Act (MCAA) 2009, a marine licence is needed for certain activities that are undertaken within the UK marine area (MMO, 2024a).

As the organisation responsible for marine licensing inshore and offshore for England and offshore for Northern Ireland, the MMO is interested in the benefits and challenges of integrating NBS into the licensing system. Integration could include enabling NBS through licensing of marine developments but also supporting the implementation of NBS directly (e.g. a marine licence for restoring a seagrass bed). Utilising the licensing system to enable the uptake and implementation of NBS, and reducing barriers to direct implementation of NBS, would additionally aid the MMO in making progress towards one of its seven strategic goals, namely Goal 1, to work with partners to restore functioning marine ecosystems, introducing increased levels of protection and improvement to our marine environment (MMO, 2023).

Considering the above, the MMO identified the need for a study to review the licensing system and its potential for enabling and scaling up implementation of NBS. Such a study would need to take account of the way in which different activities

are licensed in the system, since this may offer different opportunities for the integration of NBS.

1.2 Aims and objectives of the study

This study set out to consider the evaluability[4] of the marine licensing system, and, dependent on this, whether processes could enable and scale up NBS, subject to Ministerial direction. This included carrying out initial work to understand the benefits and challenges of enabling NBS through marine licensing.

The study aim was broken down into five objectives:

1. Produce a systems map and review of current and existing literature on MMO marine licensing.
2. Conduct a gap analysis on where NBS can be applied within the system that considers:
   a) MMO Goal 1: Ecosystem recovery through NBS in the MMO's marine licensing system[5]; and
   b) MMO Goal 2: Manage a responsive and widely owned English marine planning framework that prescribes the strategic priorities for using and managing our seas, integrating terrestrial planning policies across the range of marine sectors.
3. Develop an evaluation plan with associated indicators and a stakeholder engagement plan (if required) focusing on integrating NBS options into MMO's marine licensing.
4. Propose a data collection plan to inform a Theory of Change and the overall evaluation plan. As part of this, outline a data collection plan and sampling strategy.
5. Disseminate findings to the relevant teams.

The scope of the study was set as the marine licensing service provided by the MMO. Whilst this incorporates the Marine Case Management System (MCMS), which is the IT platform that supports the MMO's marine licensing process, it also covers wider service activities such as advice to applicants, legislation and policy implementation, consultation, and conditions to manage environmental impacts.

The outputs are expected to be used internally by the MMO; thus, the study has focused on MMO activities. These are defined as the aspects that can be influenced and altered by the MMO, rather than aspects that require changes by other organisations such as Defra or Natural England.

[4] Evaluability covers the extent to which an activity or project can be evaluated in a reliable and credible fashion (OECD, as reported by BetterEvaluation (2025)).
[5] Note that this is the wording for a simplified version of Goal 1 from the study specifications. As stated in the background, Goal 1 in the MMO's strategic plan, MMO2030 (MMO, 2023), has a wider scope: "Work with partners to restore or recover functioning marine ecosystems, introducing increased levels of protection and improvement to our marine environment".

1.3 Positioning of the study with other related initiatives

This study intends to build on work already undertaken by ABPmer and ICF in relation to marine NBS (ABPmer and ICF, 2021). It is one of several initiatives exploring how marine licensing can facilitate sustainable development and environmental restoration. It is distinct from, yet complementary to, two other key pieces of work: the Marine Planning and Licensing Programme (MPLP) and the Review of Restoration and Restoration-linked Compensation Marine Licence Applications (ReMeMaRe[6] MLA Review) project.

The MPLP is a service transformation programme which is looking to re-design the end-to-end service. This includes replacing the current MCMS. The existing marine licensing digital service was introduced in 2013 as a completely new system from that inherited from the Marine and Fisheries Agency[7]. Iterative changes have been made to the platform since this time. It now requires transformation to address risks and support evolving government ambitions and marine development (e.g. in relation to offshore wind and restoration projects). The MPLP evaluation is an additional requirement set by Defra's Investment Committee to ensure the updated programme and hosting platform are aligned with ambitions and provide value for money. It is anticipated that the findings from this study on NBS and the marine licensing service will help inform the MPLP.

Defra's ReMeMaRe MLA Review project reviewed marine licence applications (MLAs) for restoration and restoration-linked compensation projects to identify blockers and inefficiencies. The review covered MLAs from January 2018 to April 2024, exploring key regulatory challenges and potential areas for policy improvement (MMO, 2024b). Evidence was extracted from the MCMS and Coretime[8] for 62 MLAs and 33 Variation Requests which were linked to restoration and restoration-linked compensation projects. The findings highlighted issues related to complexity, cost, time and other factors (e.g. case team capacity, need for further information such as sediment sample analysis) which present barriers for restoration practitioners, limiting the uptake of marine ecosystem restoration projects (MMO, 2024b). The ReMeMaRe MLA Review project focused on the MMO's case management data and is an important piece of evidence that will be used to inform this study. This study also has wider objectives, going beyond the identification of blockers examined in the ReMeMaRe MLA Review project to then develop an evaluation plan focusing on the integration of options to enable NBS through the marine licensing service and resolve blockers. The study also considers how marine licensing could process projects not focussed on restoration to enable NBS.

While the MPLP focuses on a technological and structural transformation of marine licensing and planning, and the ReMeMaRe MLA Review project identifies regulatory barriers for restoration-focused licensing, this study takes a broader perspective with wider objectives. It uses tools from evaluation such as systems mapping, which as

[6] The ReMeMaRe (Restoring Meadow, Marsh and Reef) initiative is an initiative led by the Environment Agency to address baseline shift and reverse centuries of decline of three priority estuarine and coastal habitats, seagrass meadows, saltmarshes and European native oyster *Ostrea edulis* reefs.
[7] Note that in 2010, the Marine and Fisheries Agency was merged into the MMO.
[8] Coretime is a time recording system used by the MMO. Each 15 minutes is recorded against an activity code.

stated by the Complexity Evaluation Toolkit provides “a graphical representation of the components in a system and the causal relationships between them” (Cecan, 2021). The systems map has been developed to provide a high-level overview of how the components within the marine licensing service fit together and interact. It is not intended to be an in-depth guide as to how the service works; detailed mapping of the process has already been undertaken as part of other projects (including the MMO’s ‘Step-back’ project and MPLP work). Instead, the systems map summarises the marine licensing service, highlighting the key components and their relationships, so that these can then be considered further within the evaluation plan.

Thus, while the ReMeMaRe MLA Review project identifies barriers to restoration projects, and MPLP works on service transformation, this study undertakes an initial investigation into the role of licensing in enabling NBS implementation (drawing particularly from the findings of the ReMeMaRe MLA Review project). This study then examines how NBS can be enabled and scaled up within the marine licensing service, exploring ways to enhance licensing processes to better support NBS from both regulatory and operational perspectives. An evaluation plan is then developed to assess the effective enabling and scaling up of NBS through marine licensing.

1.4 Purpose and structure of this report

This report presents the findings from work undertaken by Risk & Policy Analysts (RPA) and ABPmer (the study team) to consider the extent to which the marine licensing system could be evaluated, and subsequently whether marine licensing processes could enable and scale up NBS. It also includes information on the approach applied. The study itself was supported by an MMO Steering Group, which was set up to feed into and oversee the work.

The remainder of the report is organised as follows:

- Section 2 sets out the approach taken to this study;
- Section 3 presents an overview of the marine licensing system and NBS, drawing on desk research and interviews;
- Section 4 provides the gap analysis, that considers where there could be opportunities for NBS;
- Section 5 includes the evaluation plan, for future implementation;
- Section 6 provides conclusions and reflections; and
- Section 7 includes the references.

Supporting information is provided in the annexes:

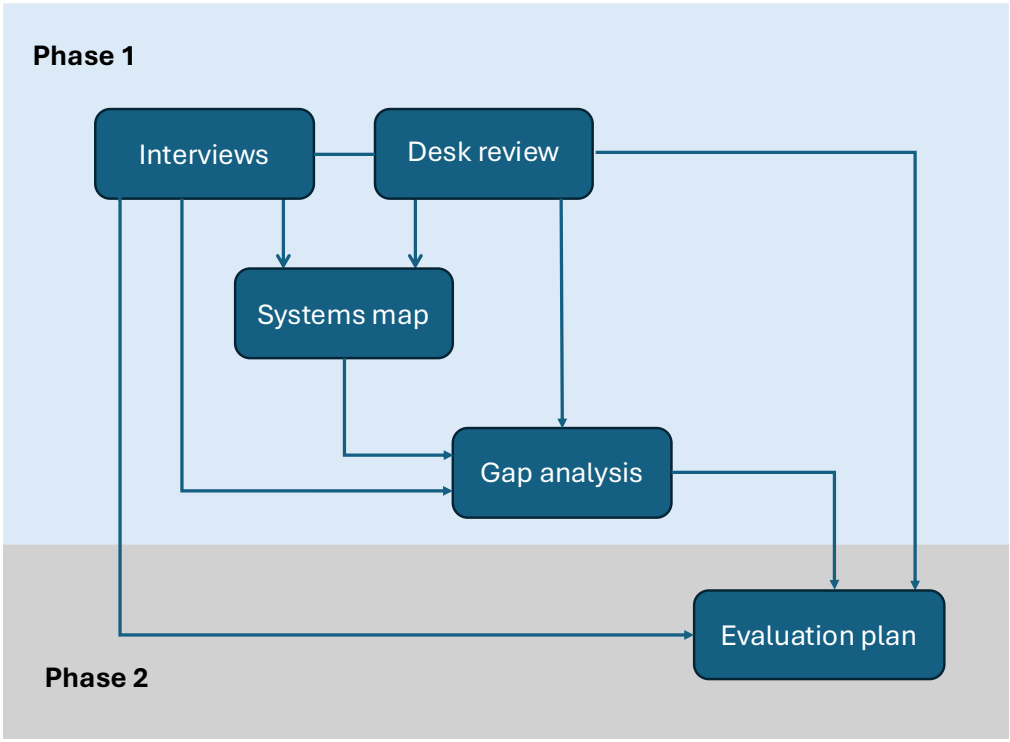
- Annex 1 includes the interview questions; and
- Annex 2 includes the systems map. Note that this is also provided as a separate document for ease of viewing.

2. Approach

2.1 Overview of approach

The approach to the study was broken down into two phases: Phase 1 and Phase 2. Phase 1 consisted of interviews and a literature review to inform the creation of a systems map and a gap analysis. Phase 2 involved the development of an evaluation plan. Figure 1 shows how the different components of the study are linked.

Figure 1: Links between the different components of the study



2.2 Phase 1: Scoping

2.2.1 Overview

This section presents information on the approach taken to Phase 1. Work began with interviews with MMO staff alongside a literature review on the licensing system and NBS. These scoping activities provided evidence for the development of a draft systems map of the marine licensing service. Information from the interviews and literature review has also been used to carry out a gap analysis. The gap analysis, shows where NBS could be integrated into, and enabled through, the licensing system, but is not currently. Further details on each of these activities are provided in the following subsections.

2.2.2 Interviews

Potential interviewees were identified in discussions with the MMO at the inception meeting and at regular progress meetings. The study aimed to carry out five interviews to gain an initial understanding of the licensing system and to supplement the information to be gathered from the desk review.

Six potential interviewees were contacted, of which four responded positively and were interviewed. Each interview focused on gathering insights from diverse MMO roles, including representatives from the Planning & Change Directorate, Evidence & Evaluation, Strategic Marine Licensing, Marine Planning, and the Marine Licensing Case Team.

In line with RPA's ethical protocol for engagement, all interviewees were provided with a participant information sheet. This included details on the background to the study, how interview data would be stored and processed, and that information would be presented anonymously in reports. Consent for participation was sought at the start of each interview.

The interviews explored key themes within the marine licensing service such as the operational challenges and enablers of NBS, and existing policies. A tailored set of questions was prepared and shared with each interviewee in advance. A semi-structured format was employed to ensure consistency while allowing flexibility to delve into specific areas of expertise. Interviews were recorded to facilitate note taking, with notes from each interview being written up and used as a source of evidence in the development of the systems map and for the gap analysis.

The process of summarising interview responses and identifying key themes was developed to support a comprehensive analysis. The first step involved combining the interview responses into one spreadsheet so that they could be easily analysed together. The next step involved a thorough review of the interview notes to become familiar with the content. The interview responses were then analysed to identify overarching themes, common patterns, and perspectives that were shared across multiple interviews. Once the key themes were identified, the responses were summarised under these thematic headings. The summaries and themes were reviewed to ensure accuracy and coherence with the original interview notes, and to ensure that the key opinions from the interviews were included.

2.2.3 Literature review

A literature review was conducted to inform the systems map and gap analysis. Note that the full list of documents consulted is provided in Section 7 References. The first step was to review the regulations, policies, and associated guidance documents that underpin the marine licensing system in England. These documents included the Marine and Coastal Access Act 2009 (MaCAA), The Marine Licensing (Application Fees) Regulations 2014, The Marine Licensing (Exempted Activities) Order 2011 (as amended), Marine Plan documents, MMO marine licensing guidance (e.g. on self-service marine licensing (MMO, 2024c), making a marine licence application (MMO, 2024d), activities requiring a licence (MMO, 2024a) and the marine licence timetable (MMO, 2024e)).

Key academic papers and grey literature were also reviewed. These included a review paper on barriers to implementation of NBS by ABPmer and ICF (2021), as well as the ReMeMaRe MLA Review project (MMO, 2024b). The key themes, issues and opportunities identified in these papers formed the basis for determining how NBS are already considered, and where or how NBS could be enabled within the marine licensing service.

The review also included documents on challenges and solutions to the implementation of NBS from across the United Kingdom (e.g. Scotland), Europe and globally. This enabled insights into NBS approaches and solutions within licensing systems outside England.

A combination of key words (e.g. nature-based solutions; marine licensing; licensing; licence; regulation; policy) were also used to conduct a web search using Google Scholar for any other relevant literature.

Additionally, during the literature review, discussions were held with NBS practitioners within ABPmer to identify examples where NBS were supported or hindered by the marine licensing service as well as any partnership working in relation to NBS.

2.2.4 Systems map

According to the Complexity Evaluation Toolkit (Cecan, 2021), a systems map is a "graphical representation of the components in a system and the causal relationships between them". BetterEvaluation provides a similar definition, noting that systems maps are used to depict relationships between people, organisations and other elements of the network being considered (BetterEvaluation, 2025). A systems map for the MMO's marine licensing service was developed in order to provide a visual that illustrates the marine licensing service, and how NBS could be integrated within that service. The systems map is presented in Figure 3 in Section 3.3 (with a zoomable version in Annex 2).

As noted in Section 1.3 above, the systems map was not intended to be a detailed, step-by-step diagram of marine licensing service. Instead, it offers a summary of the marine licensing service, highlighting the key components and their relationships, so that these can then be considered further within the evaluation plan. This focus on the main components (e.g. people/organisations such as applicants) and the links between them differentiates the systems map from the detailed maps produced within the MMO's 'Step-back' Project and MPLP work.

The systems map was produced using information obtained from both the interviews and the literature review, as well as ABPmer's experience of applying for marine licences for a range of marine sectors. To facilitate the development of the systems map, the online whiteboard 'Mural' was used. Components of the licensing service (e.g. MCMS, Marine Licence Public Register, the MMO as the Licensing Authority, and the applicant) were identified, and the components of the system map were then linked with arrows to illustrate interactions between each component.

To enable further development of the map, feedback from the MMO was requested. The study team developed a set of questions to guide feedback. These covered both the components included in the map and the links between them. Responses to these questions (given below) were used to refine the map:

1. Legal and policy framework (grey boxes at top of map) – should the components that drive licensing (e.g. legislation, marine plans and policy) be linked to any other components/parts of the map beyond Band 1, 2 and 3 marine licences?

2. Band 1,2 and 3 marine licences (lefthand side of map) – the Band 2 and 3 marine licences are linked to the MCMS components. The component 'Band 1 self-service licences' has no links. Should the map include any additional components that link to these Band 1 licences, and if so, what?

3. MCMS components (yellow and grey in the middle) – are there any feedback loops that should be added between the components that fall within the MCMS area of the map?

4. Other legislation and assessment requirements – the bottom left of the map identifies various requirements that feed into applications for licences (see pink boxes). Are there any additional requirements that should be mentioned?

5. Consultation (green boxes at the bottom) – currently, components on consultation feed into the consideration of impacts. Should consultation be added anywhere else, for example, in relation to other assessment requirements or legislative frameworks?

6. Components linked to post-determination include e.g. licence variations and transfers (pink boxes to righthand side of map) – third party stakeholders are included here. Should specific organisations be named and linked to specific components/stages within post-determination?

In January 2025, a Steering Group Meeting was held with MMO representatives from the Planning & Change Directorate, Evidence & Evaluation, Strategic Marine Licensing, Marine Planning, and the Marine Licensing Case Team. The aim of the meeting was to review written feedback as a group and collect further views from the MMO on the content and detail of the systems map. Following this meeting, comments were addressed and edited, and the systems map was finalised.

2.2.5 Gap analysis

The gap analysis sought to identify 'gaps' in the marine licensing service – places where NBS could be integrated and enabled, but are not currently. In relation to these gaps, a series of opportunities were identified that could be affected by the MMO, within the marine licensing service, to enable NBS through the licensing of marine developments or to support the implementation of NBS directly. Opportunities were identified from the interviews, literature review, and ABPmer's experience and technical expertise on marine licensing and NBS. Key pieces of literature were ABPmer & ICF (2021) and the ReMeMaRe MLA Review project (MMO, 2024b).

The opportunities were aligned to the MMO Goals 1 and 2 as set out for this study (note that Goal 1 in the MMO's Strategic Plan (MMO, 2023) is broader than that considered here):

1. MMO Goal 1: Ecosystem recovery through NBS in the MMO's marine licensing system[9]; and
2. MMO Goal 2: Manage a responsive and widely owned English marine planning framework that prescribes the strategic priorities for using and managing our seas, integrating terrestrial planning policies across the range of marine sectors.

Each goal has a series of outcomes and impacts associated with it. The opportunities in the gap analysis were considered against the desired outcomes. This will enable the MMO to progress opportunities if they are interested in certain outcomes.

2.3 Phase 2: Evaluation plan

2.3.1 Overview

This section presents information on the approach taken to Phase 2 to develop the evaluation plan. The starting point was the evaluation questions, as presented below in Section 2.3.2, which set the scope for the plan. Several sub-questions were developed to support each of the evaluation questions. From these, the study team identified evaluation indicators and data sources that would enable collation of data against the indicators. The evaluation questions, sub-questions, indicators and data sources are presented in an evaluation matrix in Section 5.3. The matrix is in two parts, with a separate table for each of the MMO's goals (1 and 2). Finally, the study team developed a data collection plan that included the suggested approach to stakeholder engagement.

2.3.2 Evaluation questions

An initial long-list of evaluation questions was drafted against Goals 1 and 2 and shared with the MMO in December 2024. The long-list of evaluation questions was developed both top-down (from the study objectives and the two goals) and bottom-up (from information collected through the interviews and literature review, and from the initial findings from the gap analysis). In addition, the list was reviewed against example evaluation questions provided in the Magenta Book (HM Treasury, 2020).

Discussions were held with the MMO in January and February 2025 on study scope and other initiatives in the licensing field, including the MPLP and the ReMeMaRe MLA Review Project (MMO, 2024b). In light of these discussions, the long list of questions was subsequently revised to form a shortlist of seven main evaluation questions. Edits included:

[9] Note that this is the wording for a simplified version of Goal 1 from the study specifications. As stated in the background, Goal 1 in the MMO's strategic plan, MMO2030 (MMO, 2023), has a wider scope: "Work with partners to restore or recover functioning marine ecosystems, introducing increased levels of protection and improvement to our marine environment".

- Revising the terminology i.e. use of licensing service rather than system;
- Taking account of the additional information on context, for example, adding in a sub-question to ensure the evaluation built on findings from the ReMeMaRe MLA Review Project); and
- Refining the number of questions by removing any thought to be beyond the current scope on NBS in licensing (e.g. questions on legal challenges to licensing and costs/time to develop marine plans).

The shortlist of questions was then shared with the MMO for agreement and taken forwards for use in developing the evaluation plan.

2.3.3 Evaluation indicators and data needs

For each sub-question, the study team identified an indicator or set of indicators that would guide the data collection to enable that sub-question to be answered. Data sources were also set out for each indicator. These included engagement with a range of stakeholders, but also guidance documents, application forms and other supporting documentation relevant to the licensing service.

2.3.4 Data collection plan (including stakeholder engagement plan)

The study team collated the data sources in the evaluation matrix to form a data collection plan. This sets out the types of data expected to be collected, from whom, and when within the timeframe of the evaluation (i.e. at the start, to inform other evaluation activities, during the evaluation, or as part of final data collection).

As noted earlier, the data sources in the evaluation matrix include information from engagement. The study team identified the types of stakeholders from whom opinions and comments would need to be sought for the evaluation. The different stakeholder types were then mapped to the seven main evaluation questions. This enabled us to identify the most appropriate engagement approaches for each group. Where relevant, sampling strategies were also developed.

3. Overview of marine licensing service and NBS

3.1 Overview

This section presents legislative and policy context for the marine licensing service in England (Section 3.2). The systems map is then presented and described in Section 3.3, which sets out how the marine licensing service works in practice. The definitions and types of NBS included within this project are described in Section 3.4.

As noted in Section 2.2, the information presented here is based on the information collated from the interviews and the literature review, as well as the technical expertise on marine licensing and NBS within ABPmer.

3.2 Legislative and policy context for marine licensing

3.2.1 Overview

The Marine and Coastal Access Act (MaCAA) 2009 provides the regulatory process which controls a range of activities in the marine environment in UK waters, including the requirement to obtain a marine licence for certain types of activity. The marine licensing process supports the sustainable use of the marine environment, ensuring activities which require a licence do not harm the environment, impact on human health or interfere with other legitimate uses of the seas.

Marine licences are administered by the appropriate licensing authority, as described in Section 113 of the MaCAA. The Secretary of State is the appropriate licensing authority for the English inshore and offshore regions and the Northern Ireland offshore region (and in respect of certain reserved matters). Most of the Secretary of State's marine licensing functions have been delegated to the MMO (under the Marine Licensing (Delegation of Functions) Order 2011).

Specifically, Part 4 of the Act sets out the marine licensing function, including the requirements for a marine licence. Part 4 is divided into five chapters:

- Chapter 1 – marine licences;
- Chapter 2 – exemptions and special cases;
- Chapter 3 – enforcement;
- Chapter 4 – delegation; and
- Chapter 5 – supplementary information and requirements.

3.2.2 Marine licensing area

The UK marine licensing area is defined in Part 2, Section 42 of the MaCAA, which defines the areas of sea where activities proposed within them would need a marine licence. The MMO is responsible for marine licensing in English inshore and offshore waters and for Northern Ireland offshore waters, as shown in Figure 2 (MMO, 2025a).

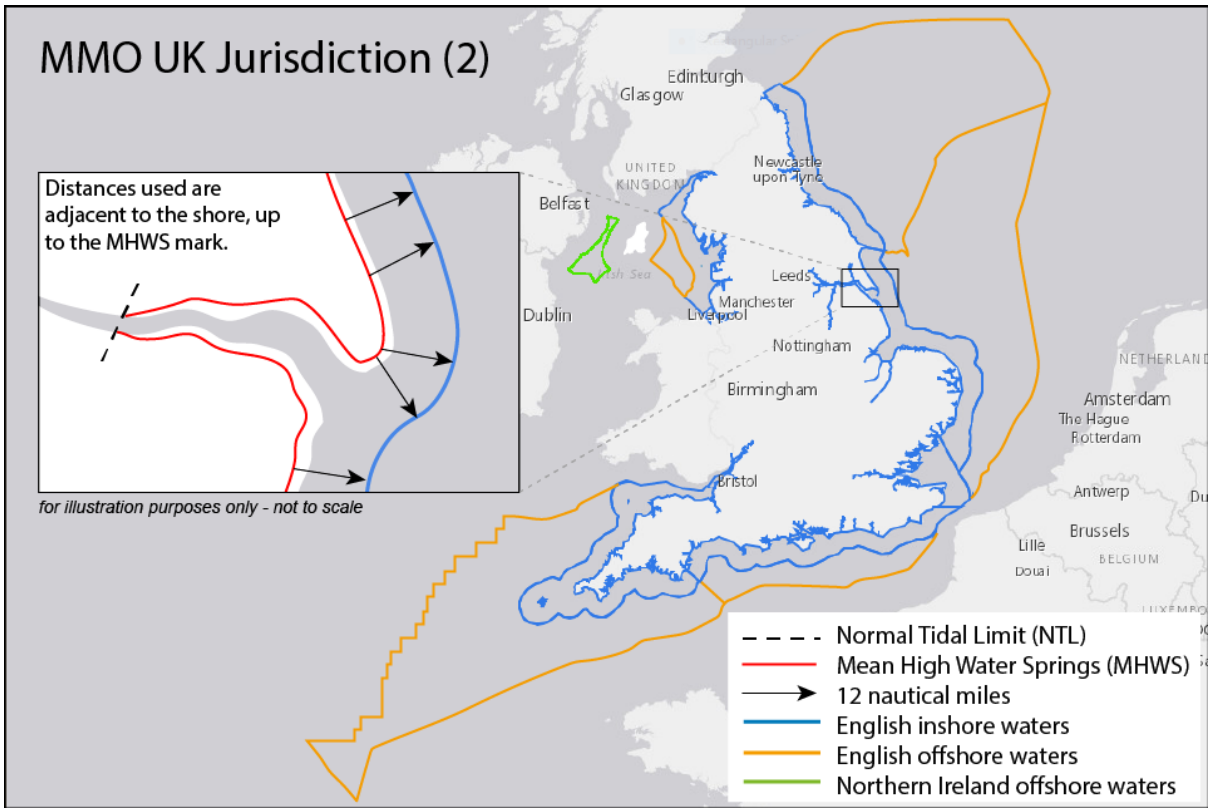
The English inshore area is the area of sea within 12 nautical miles of the English coastline. This is also called the territorial limit. The offshore area is the area of sea

beyond the territorial limit, but which is in the designated English Exclusive Economic Zone (EEZ) and within the UK sector of the continental shelf. This is up to 200 nautical miles from the coast. The definition of English waters excludes the waters of the devolved administration of Northern Ireland, Scotland and Wales.

Northern Ireland offshore waters are also beyond the territorial limit, in the area designated as the Northern Ireland EEZ and within the UK sector of the continental shelf (up to 200 nautical miles from the coast). The definition of Northen Ireland offshore waters excludes the waters of the Devolved Administration of Scotland and Wales, and the administration of England.

Under the MaCAA, the “sea” includes any area submerged at mean high water spring tide, and the waters of every estuary, river or channel, so far as the tide flows at mean high water spring tide. The licensable area also includes waters in any area which is closed, whether permanently or intermittently, by a lock or other artificial means against the regular action of the tide, but seawater is still caused or permitted to flow, whether continuously or from time to time, into and out of that area.

Figure 2: The MMO’s jurisdiction in the UK marine area (MMO, 2025a).



3.2.3 Marine licensable activities

The activities which require a marine licence are described in Part 4, Section 66 of the MaCAA. In summary, a marine licence is required for the following types of activities:

- Any form of dredging (e.g., capital, maintenance and aggregate), whether or not involving the removal of any material from the sea or seabed;

- Construction, alteration or improvement works in/over the sea, or on/under the seabed;
- Deposits of substances or objects in the sea, or on/under the seabed, using a vehicle, vessel, aircraft, marine structure or floating container;
- Removals of any substance or object from the seabed using a vehicle, vessel, aircraft, marine structure or floating container;
- Incineration of any substances or objects;
- Scuttling vessels or floating containers; and
- Deposit or use of explosive substances or articles in the sea or on/under the seabed.

3.2.4 Exempted activities

Some marine licensable activities may be exempt from requiring a marine licence in certain circumstances. Exemptions enable day-to-day activities (for example, anchoring a vessel) and low risk activities to continue without the need for a licence, ensuring compatibility with international and domestic law; they also enable emergency action to be carried out without delay. Prescribing exempted activities ensures the marine licensing process remains efficient and proportionate. It is generally easier, cheaper and quicker to undertake the activity as a marine licence is not required (and therefore the effort, cost and time associated with obtaining a marine licence is not realised).

The MaCAA defines several activities which are exempt from the requirements of a marine licence (Sections 75 to 77) and special provisions in certain cases (Sections 78 to 84). For example, this includes certain dredging activities (Section 75) for which a marine licence is not needed if specified conditions are met.

The provision of these specific exemptions under the MaCAA apply to all UK administrations, albeit some have more relevant spatial implications compared to others (e.g. Section 76 – Dredging in the Scottish Zone).

Chapter 2 of Part 4 of the MaCAA (Exemptions and Special Cases), Section 74(1), allows by Order, for activities to not need a marine licence, or to not need a marine licence if conditions specified in the Order are satisfied. Each UK administration has legislative powers for the making of Orders for exempting marine licensable activities.

In England, The Marine Licensing (Exempted Activities) Order 2011 (as amended) sets out the marine licensing exemptions where the Secretary of State is the appropriate licensing authority. The Order was updated in 2013 (The Marine Licensing (Exempted Activities) (Amendment) Order 2013) and 2019 (The Marine Licensing (Exempted Activities) (Amendment) Order 2019).

Marine policy

Part 3 of the MaCAA sets out the requirements for marine planning. It sets a plan-led system for marine activities, with the over-arching aim of providing for greater coherence in policy and a forward-looking, proactive and spatial planning approach to the management of the marine area, its resources, and the activities and

interactions that take place within it. This, in essence, attempted to bring things into closer alignment with the terrestrial planning system that has been in existence for some 80 years. Part 3 is divided into four chapters:

- Chapter 1 – Marine Policy Statement
- Chapter 2 – marine plans
- Chapter 3 – delegation of functions relating to marine plans
- Chapter 4 – implementation and effect.

The UK Marine Policy Statement (MPS) provides the policy framework for the marine planning system. It provides the context for marine plans. The MPS was published in 2011 and contains a series of high-level marine objectives under five themes. All UK marine plans are organised within this framework.

The MMO is the marine planning authority for the English inshore and English offshore regions. The Marine Planning Team is responsible for the production of marine plans; plans have been produced at a sub-national level and cover the entire marine area in England.
Marine plans put into practice the objectives for the marine environment that are identified in the MPS alongside the National Planning Policy Framework (NPPF) (revised in 2024; see Ministry of Housing, Communities & Local Government, 2024) and the Localism Act 2011.

There are 11 marine plan areas in England. These areas are covered by six marine plans. Each plan provides a policy framework which will be used to help inform decision-making on what activities take place in the marine environment and how the marine environment is developed, protected and improved in the next 20 years (see HM Government (2021) for an example). It is designed to provide a clear, evidence-based approach to inform decision-making by marine users and regulators on where, when or how activities might take place within the marine areas, balancing environmental, economic and social factors.

Each marine plan has a series of general / cross cutting policies covering topics from the environment, access, wellbeing, the economy, historic environment as well as safeguarding, and supporting policies for marine sectors in English waters. The plans are therefore key in enabling the UK's High Level Marine Objectives (as set out in the UK MPS). All authorisation and enforcement decisions must be taken in accordance with the plans.

3.2.5 Fees and banding

Due to the diverse and broad range of activities that require a marine licence, the MMO designate each activity into different bands depending on the activity, scale and complexity of a proposed activity. This is to ensure all applications are treated in a proportionate way.

The bands of marine licence in England comprise Band 1, Band 2 and Band 3, and the activities that are considered eligible for each band are set out in The Marine Licensing (Application Fees) Regulations 2014.

The MMO classes a number of activities as low risk because they are sufficiently consistent in nature and extent. In specific circumstances these activities are not subject to the standard marine licensing process. Instead, they might qualify for a **Band 1 (Self-service) marine licence**. Applying for and obtaining a self-service marine licence is easier, cheaper and quicker, compared to a full marine licence application. Activities which may qualify for a self-service licence include some deposits (including burial at sea), minor removals, maintenance activities, and non-navigational clearance dredging. Self-service marine licensing replaced the previous fast-track marine licence process which required bespoke consideration by the MMO's case officers.

Band 2 marine licence applications apply where the proposed activity is for the sole purpose of small-scale construction, alteration or improvement of works, removal of substances, or routine deposits within the UK marine licensing area.

Any band 2 project type with complex case characteristics is moved to band 3.

A project or plan is defined as a complex case if it is one of the following:

- Estimated to cost more than £1 million or unable to provide a confident cost estimate;
- Part of a project which requires an Environmental Impact Assessment (EIA); and
- Likely, either alone or in combination with other plans or projects, to have a significant effect on a protected site or any process on which any protected feature is dependent.

Band 3 marine licence applications apply where the proposed activity includes:

- Dredging;
- Scuttling any vessel or floating container;
- Deposit or use of explosives;
- Incineration of a substance or object;
- Loading any vehicle, vessel, aircraft, marine structure or floating container in the UK (except Scotland) or the UK marine area, with any substance or object for incineration at sea;
- Deposits (outside of the UK marine area) from a British vessel, British Aircraft or British marine structure (or floating container if controlled from those listed); and
- Deposits (outside of the UK marine area) from a vessel loaded in the UK.

And where complex characteristics are present:

- Deposits within the UK marine Area;
- Removal of substances; and
- Construction.

The MMO charge fees set up in The Marine Licensing (Application Fees) Regulations 2014 to recover the costs for permitting under a cost recovery structure.

The fee charged depends on the marine licence banding, with current fees set at (MMO, 2025b):

- Band 1 self-service marine licence costs a fixed fee of £50;
- Band 2 marine licence costs are charged at an hourly MMO and Centre for Environment, Fisheries and Aquaculture Science (Cefas) rate, with a maximum fee between £1,400 and £2,200; and
- Band 3 marine licence costs are charge at an hourly MMO and Cefas rate, with no maximum fee.

3.2.6 Environmental assessments

Alongside the MaCAA, all parties involved in marine licensing need to be aware of other legal requirements under various pieces of legislation.

Some environmental legislation requires technical assessments to be produced to satisfy these legal requirements. The Marine Works (Environmental Impact Assessment) Regulations 2007 are the most relevant to marine licensing in England, which require an Environmental Impact Assessment (EIA) to be undertaken for certain types of projects to determine whether significant environmental effects are likely to occur.

The Conservation of Habitats and Species Regulations 2017 (and the offshore equivalent) require consideration of likely significant effects on European and Ramsar sites, which requires the production of a Habitats Regulations Assessment. The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 require a Water Framework Directive Compliance Assessment to be completed. Other relevant assessments may include a Marine Conservation Zone Assessment and a Waste Hierarchy Assessment, and others depending on the specifics of the project.

3.3 Marine licensing in practice (systems map)

3.3.1 Overview

There are several components and interactions within the marine licensing process. These are represented in the systems map provided as Figure 3.

Applications for marine licences to the MMO are submitted via the Marine Case Management System (MCMS). The MCMS is the IT system that manages marine licence applications (large grey box in Figure 3). Sitting outside this system are wider components of the marine licensing service.

As described in more detail in Section 3.2, the MaCAA is the primary legislation establishing the marine licensing service. From this, secondary legislation and policy has been developed. The Marine Licensing (Application Fees) Regulations 2014 determine whether a Band 1 (self-service) marine licence is required or whether a Band 2 or Band 3 marine licence is necessary (turquoise boxes in Figure 3).

Broadly, the process for Band 2 and Band 3 marine licences comprises five stages:

- Pre-application;
- Application;
- Assessment and consultation;
- Determination; and
- Post-determination.

The following sections focus on the process and components associated with these stages (shown in the yellow boxes in Figure 3).

It should be noted that the MMO defines six stages within a marine licence application timeline[10], as well as a seventh stage for monitoring once the application is complete (MMO, 2024e). The stages described in this report differ to the stages defined by the MMO, as this study comprises a broader review of the licensing service, including pre-application and post-determination activities, rather than focusing on licensing from an applicant's perspective.

3.3.2 Pre-application

During the pre-application stage (before an application is submitted), potential applicants may contact the MMO to raise a general query regarding an activity they are planning, or to enquire about the marine licensing process. This can help resolve issues prior to submission and potentially reduce the determination period.

Pre- application advice from the MMO may include:

- Confirmation a marine licence is required;
- Guidance on the process; and
- Direction to application forms, fees and guidance.

Where a query is more complex and the applicant needs more information than is available on the website, the enquirer would need to request bespoke pre-application advice, and a charge may apply.

This stage would also involve EIA screening and scoping requests (if applicable), and requests for sediment sample plans in order to characterise the quality of dredge material to inform licensing decisions.

[10] These six stages are: allocation, technical assessment, consultation, review, decision recommendation and approval, and application completion.

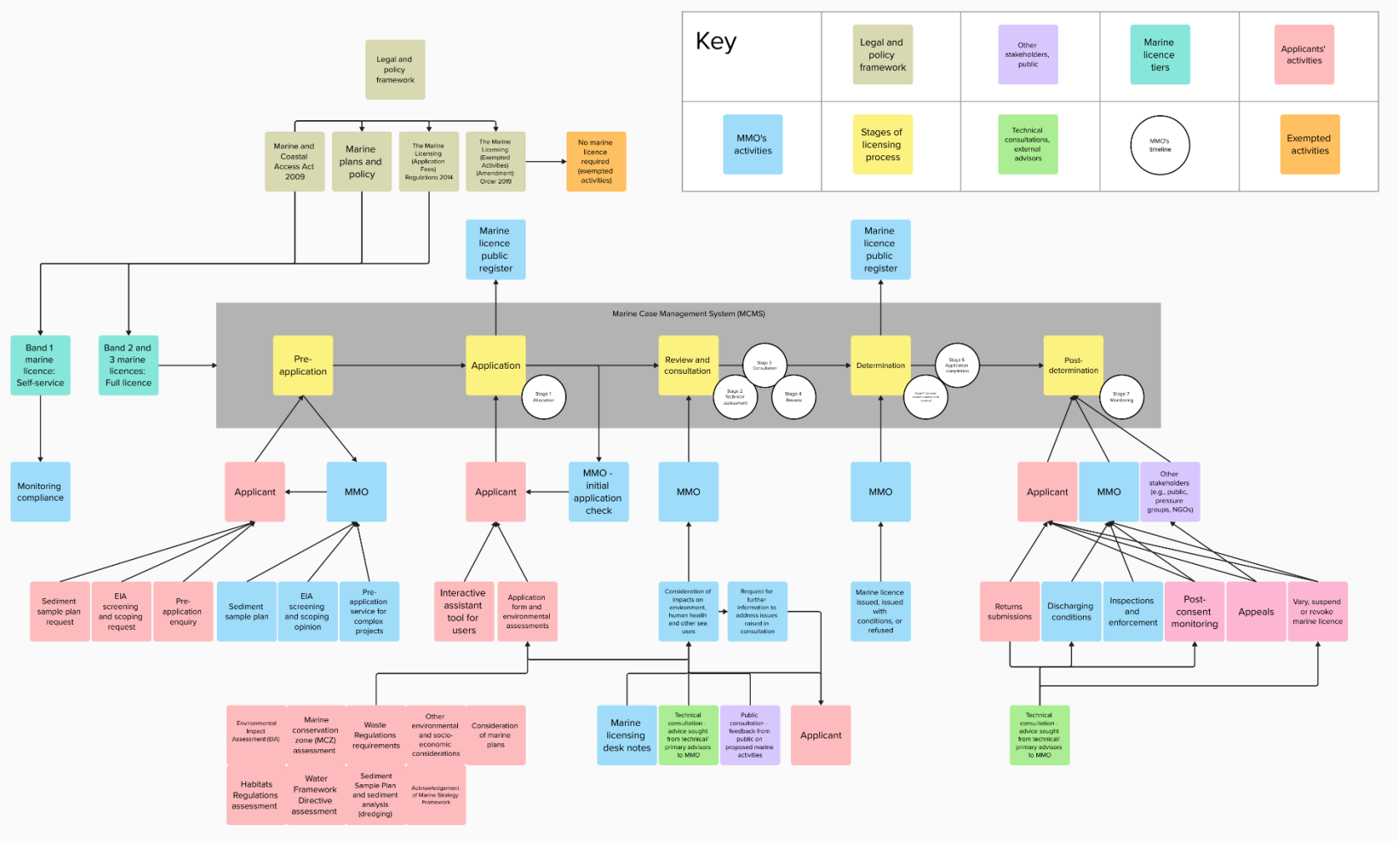


Figure 3: Visual representation of marine licensing in England (systems map).

3.3.3 Application

During the application phase of the marine licensing process, the applicant completes the application forms on the MCMS. Guidance is available as to the type of marine licence an applicant should apply for (MMO, 2024a).

The application forms, hosted on the MCMS, require information on:

- Project background and programme;
- Related consents and applications;
- Supporting environmental assessments to inform decision-making (e.g. EIA, Habitats Regulations Assessment (HRA), Marine Conservation Zone (MCZ) Assessment, and Water Framework Directive (WFD) Compliance Assessment);
- Information on proposed sites and activities, including:
    - Location of proposed activity (including coordinates);
    - Site sensitivities (e.g. protected areas);
    - Description, methodology and programme;
    - Potential impacts, mitigation and residual risks;
- Consideration of marine plan policies; and
- Conditions required on the marine licence.

Once an application is received, the MMO will complete an initial application check and validation process. This comprises a 'Gateway Review 1'. This is administrative in its focus, and ensures the application is completed correctly. Tasks include checking receipt of correct location data, as well as checks to ensure the EIA screening/scoping process has been completed, if necessary, and whether there is sufficient supporting information on marine planning. It also establishes the fee/band or estimate for the application. Once this is completed, a case officer is assigned to the application.

At this stage, the MMO may ask the applicant for further information before the application can be progressed. Application details are also uploaded to the Marine Licensing Public Register.

3.3.4 Review and consultation

The review and consultation stage involves reviewing all supporting documents and assessments to ensure they are appropriate and comply with relevant policy and legislation. The detail of supporting information will depend on the proposed activity being applied for.

Assessments that are typically undertaken include:

- Habitats Regulations Assessment (HRA) under The Conservation of Habitats and Species Regulations 2017 or 'Habitats Regulations' (and the offshore equivalent);
- Water Framework Directive Compliance Assessment; and

- If an EIA is required for the project, an Environmental Statement would need to be produced, or if not a form of Environmental Appraisal.

The MMO undertake a 'Gateway Review 2' at this stage. This is a risk assessment process which builds on the initial Gateway Review 1 assessment. It sets out the MMO's initial view of the application and ensures it is complete to allow consultation. Questions relating to EIA, marine policies and plans, WFD Regulations, and risk to marine receptors are answered in this process. The review also documents the extent of public and direct consultation that will be undertaken.

The Marine Licensing Case Team may consult with technical experts internally and externally (primary advisors to the MMO). Who is consulted depends on the scale, type and location of project, and the receptors that are likely to be affected by the project (for example birds, shipping and navigation, and archaeology). Organisations outside England, such as Natural Resources Wales (NRW) in Wales or the Marine Directorate in Scotland, may also need to be consulted if a project overlaps or creates impacts within their jurisdiction.

Advice can be obtained on the impacts of a proposed project and any ways to minimise potential impacts of a project on the environment, human health, legitimate users of the sea and other relevant matters. During the consultation period, consultees may request further information on a particular element of the proposed project or further evidence on the impacts, which must be provided by the applicant.

Consultees are allowed 28 days to provide a response or comment on Band 2/3 non-EIA applications and 42 days for Band 3 EIA applications.

To ensure that all affected parties are given an opportunity to comment, for Band 2 and Band 3 applications, applicants must place a public notice of their proposal in a local newspaper or maritime publication that has a wide circulation in the area of the works in accordance with Section 68 (1) of MaCAA. The timescales for public representations or objections match the ones allowed for statutory consultees (28 days for Band 2/3 non-EIA applications, and 42 days for Band 3 EIA applications). No public consultation is required for Band 1 applications.

3.3.5 Determination

The penultimate stage of the marine licensing process is the determination of the licence. Having considered the consultation responses and all relevant assessments, the Marine Licensing Case Team decide whether to grant or refuse the marine licence application. In making those decisions the Marine Licensing Case Team must have regard to the need to protect the environment, human health and prevent interference with other legitimate uses of the sea.

The Marine Licensing Case Team, in line with the precautionary principle, take decisions based on the best available evidence and applying a level of precaution proportional to the level of uncertainty and environmental risk associated with the proposal.

A licence can either be issued, issued with conditions, or refused. Activity specific conditions to mitigate the risk to the environment, human health or legitimate users of the sea will also be included.

A 'Gateway Review 3' is undertaken by the case officer at this stage (i.e., after consultation, etc.), after a determination has been made to issue a licence and checked and all additional assessments have been completed. The review provides an audit trail of all the decision-making in the marine licence application process. The decision document should contain a clear rationale behind the determination decision, as well as administrative checks like payment details and time spent on the case.

At this stage, all relevant documents, such as finalised environmental assessments, consultee responses, and the decision whether to grant or refuse a marine licence, are uploaded to the marine licence public register.

3.3.6 Post-determination

The final stage of the marine licensing process is the post-determination stage.

Some marine licences require post determination work defined by the conditions set out within a marine licence. The range and scale of post determination work varies and is dependent on the size and type of the proposal. Typical tasks include:

- Submission of returns (i.e. information) by the applicant in order to discharge conditions;
- Discharging of conditions by the MMO;
- Inspection and enforcement activities by the MMO as required;
- Post-consent monitoring (including return submission of results); and
- Variations, suspensions and revocations of marine licences.

A less common occurrence is where applicants or licence holders disagree with a licensing decision; they have the right to appeal against that decision. Similarly, applicants or any other party may challenge the lawfulness of the decisions made by the MMO through the legal system. This is known as judicial review.

Depending on the specific conditions of the marine licence, technical/primary advisors to the MMO may have a role post-determination.

3.4 Nature-based solutions

There are various definitions for NBS, s noted in Section 1.1.
Ultimately, NBS is an umbrella term for approaches that enhance and/or work with nature to address socio-environmental challenges. Such actions include creating or restoring habitats and features, as well as management actions to protect them.

The ABPmer & ICF (2021) report established a database of NBS applicable to UK waters. These are examples of NBS that could be considered within the scope of this study, including:

- Saltmarsh and mudflat restoration (including managed realignment, beneficial use/soft sediment recharge, manipulation of natural processes);
- Seagrass meadow restoration / creation;
- Kelp forest restoration / creation (including transplanting and area management);
- Shellfish bed restoration / creation (including shellfish translocation, area management and substrate introduction);
- Beach replenishment (including sand engine, dune management and beach nourishment);
- Bird habitat creation (including bird nesting habitat and bird platforms);
- Fish stocking; and
- Pressure reduction measures (management measures within Marine Protected Areas (MPAs)), fisheries management, area management and wardening).

A recent report by Garbutt *et al.* (2024) summarised the ecosystem goods and benefits derived from the key seascape habitats found in the UK: mudflat, saltmarsh, oyster reef, seagrass meadows and kelp forest. This included a summary graphic which illustrates the relationship between structural connectivity, functional connectivity, mechanisms, and ecosystem service delivery in a healthy seascape displayed in Figure 4.

The graphic illustrates that the habitats of a healthy seascape have the potential to provide a myriad of goods and services to society. Providing a detailed review of the ecosystem services and benefits provided by NBS is beyond the scope of this report, but it is considered that, out of the ecosystem service delivery examples shown in the image, key ecosystem service benefits which arise are the following: sea defence, clean water and sediments, healthy climate, wild food and recreation and tourism based around nature watching.

Figure 4: Graphic illustrating the relationship between structural connectivity, functional connectivity, mechanisms and ecosystem service delivery in a healthy seascape. Source: extracted from Garbutt et al, 2024.

4. Gap analysis and opportunities for NBS

4.1 Overview

This section provides a summary of the barriers to implementing NBS through marine licensing (Section 4.2), as well as the gaps that exist within the licensing service in England that potentially hinder the implementation of NBS (Section 4.3). To address this, a list of opportunities to enable NBS through licensing of marine developments or to support the implementation of NBS directly are presented (Section 4.3). These opportunities have then been mapped to the desired outcomes from MMO Goals 1 and 2 (Section 4.4). This enables the MMO to see which outcomes could be enabled through progressing the various opportunities.

4.2 Barriers to implementation of NBS through marine licensing

Barriers to NBS were identified from the literature review and interviews conducted with MMO personnel. A key paper, ABPmer and ICF (2021), identified the main barriers to the implementation of NBS as raised by 121 survey respondents[11], to be relating to funding or high costs of NBS as well as perceived limitations with regard to the current licensing and regulatory processes, and evidence gaps. Specifically, 40% of survey respondents perceived the current licensing and regulatory process as a barrier to increased implementation of NBS, with some describing it as bureaucratic, time consuming, risk averse and often lacking in experienced personnel. Other common barriers raised by survey respondents included a perceived lack of political will/ governance/ leadership as well as lack of joined-up/ holistic/ strategic thinking or planning. Another barrier raised was a perceived lack of (or competition for) space (including due to existing designations and ongoing activities), both on land (for managed realignment), and in the marine environment.

The ReMeMaRe MLA Review project (MMO, 2024b) suggested that issues associated with the marine licensing service that are commonly cited as blockers to NBS are not unique to NBS projects. The identified blockers included:

- cost;
- timescales;
- high quality standards of MMO and primary advisors resulting in requests for further information from the applicant;
- MMO case team capacity (e.g., delays processing due to case team availability); and
- procedures and assessments (e.g., EIA, HRA, MCZ Assessments).

[11] A mixture of mainly government bodies, consultancies, conservation non-governmental organisations, academia as well as costal partnerships, local authorities, developers and private individuals.

4.3 Gaps and opportunities for NBS within marine licensing

4.3.1 Overview

The following subsections discuss opportunities that could be taken up in response to identified gaps to enable the implementation of NBS through the marine licensing service. An extract from the systems map (see Section 3.3) is presented for each opportunity to illustrate where the opportunity sits within the licensing service. Note that the ongoing MPLP may mean that some of these opportunities become more or less relevant as the existing licensing service is reviewed and changed.

4.3.2 Regulatory regime and application procedures

Opportunity 1: Introduce marine licence exemptions for the delivery of small scale NBS

Potential gap: Exempted activities do not currently cover NBS projects.

Including certain NBS projects as exempted activities within the marine licensing framework would enable their delivery by negating the need to acquire a marine licence. This approach would address some of the barriers identified in Section 4.2 relating to the cost, time and complexity associated with marine licence applications.

As highlighted in the extract of the systems map shown in Figure 5, exempted activities are controlled under the MaCCA (specifically Part 4, Chapter 2) and under the Marine Licensing (Exempted Activities) Order (under powers in Section 74 of the MaCCA).

To implement this opportunity, the Order would need to be amended to include certain NBS related projects as an exempted activity. This would require a legal process, led by the policy team of Defra and of the MMO, with ministerial involvement and a consultation exercise. It would then need to be laid before Parliament prior to becoming enacted. For an NBS project to be included as an exemption, it would need to be considered low risk (to the environment, human health, and navigation), and as such it is likely only small-scale NBS could be included in this opportunity.

As an example, the Welsh Government are currently proposing to update the list of activities exempt from needing a marine licence in Wales. The proposals include retaining, amending and removing certain existing exemptions, as well as introducing new exemptions. The consultation for these changes ended on 14 January 2025. One new exemption proposal is for any ‘deposit or removal activity carried on using a vehicle or vessel for the purposes of establishing or restoring a seagrass meadow’. The consultation document considers this activity low risk, subject to the necessary conditions of the exemption being met.

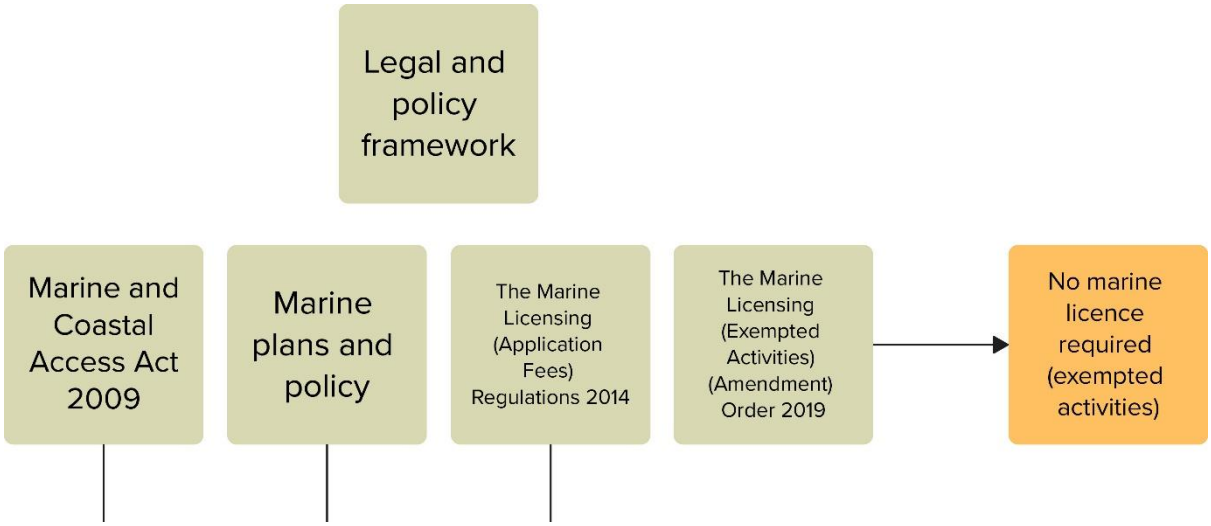


Figure 5: Extract of systems map relevant to exempted activities and application fees.

Opportunity 2: Reduce application costs for marine licence applications for NBS

Potential gap: Marine licence application fees can impact the implementation of NBS in coastal and marine environments and have been cited to act as a barrier to implementation. Larger and more complex projects sit within higher marine licence fee bands (i.e., Band 3). There is no cap on the fee for Band 3 marine licences, and therefore where a significant amount of time is taken for review and determination, the associated fee can be very high.

Generally, projects requiring an Appropriate Assessment under the Habitats Regulations are placed in a higher licensing fee band as it is considered a complex case. This could have the unintended consequence of inhibiting NBS projects coming forward in Marine Protected Areas (MPAs) given the higher applications fees.

The introduction of a capped fee band for marine licence applications related to NBS would limit costs for these projects. Capping the licence fee would also remove the risk of revised fee estimates during the application process (due to extra time spent by the MMO and its advisors in determining the application), allowing applicants to be fully informed of costs ahead of applying for a marine licence.

The Marine Licensing (Application Fees) Regulations 2014 define the fee bands and set out the fee structure for applications for marine licences under Part 4 of the MaCCA. This is shown in the extract of the systems map shown in Figure 5 above.

The MMO 'Fees and Charges' policy and associated procedures are applied to all plans/projects, no matter the project objectives, the applicant, or funding. Marine Licensing fees and charges legislation is a matter for Defra to consider and would, as for changes to exempted activities (described above), require a legal process to be

followed with minister involvement and a consultation exercise. Defra would need to consider the implications for this on recovering MMO costs.

Opportunity 3: Include small scale NBS in self-service activities for self-service marine licensing

Potential gap: With a few exceptions, self-service activities do not currently cover NBS projects. Beach maintenance activities, such as beach re-profiling, beach recycling and replacing windblown sand are included but all other beach maintenance activities are currently not suitable for self-service licensing. For self-service licensing to be applied, activities must be considered to be low risk.

It is generally easier, cheaper and quicker to undertake activities suitable for Band 1 self-service marine licensing compared to a Band 2 or 3 activity as a full marine licence is not required (and therefore the effort, cost and time associated with obtaining a marine licence is not realised). These benefits could be realised for NBS projects if the MMO classified certain NBS projects as self-service activities.

As noted in Section 3.2, the MMO classes a number of activities as low risk because they are sufficiently consistent in nature and extent. In specific circumstances these activities are not subject to the standard marine licensing process. Instead, they might qualify for a self-service marine licence. This is represented in the extract of the systems map shown in Figure 6.

The MMO has the power to classify certain NBS as self-service activities. However, for an activity to be eligible for Band 1 self-service marine licensing, it must meet a set of basic criteria relating to the duration of the works (< 12 months), the scale of the works (not part of a larger project requiring EIA), and its location (< 10 square miles in area). The presence of site sensitive factors (e.g., heritage assets, MPAs, areas used for military of defence purposes, navigational routes, or other existing uses of the sea) may also render the activity not suitable for self-service marine licensing. NBS projects can be broad in their scope, and it could therefore be difficult to define them in such a way to categorise them as 'low risk' and suitable for self-service licensing.

Some NBS, specifically beach maintenance activities, such as beach re-profiling, beach recycling and replacing windblown sand are currently included as self-service activities.

It should be noted that there is a potential risk that by including other (non-NBS) activities within self-service marine licensing, opportunities to enable NBS (as discussed in the other opportunities identified) could be missed.

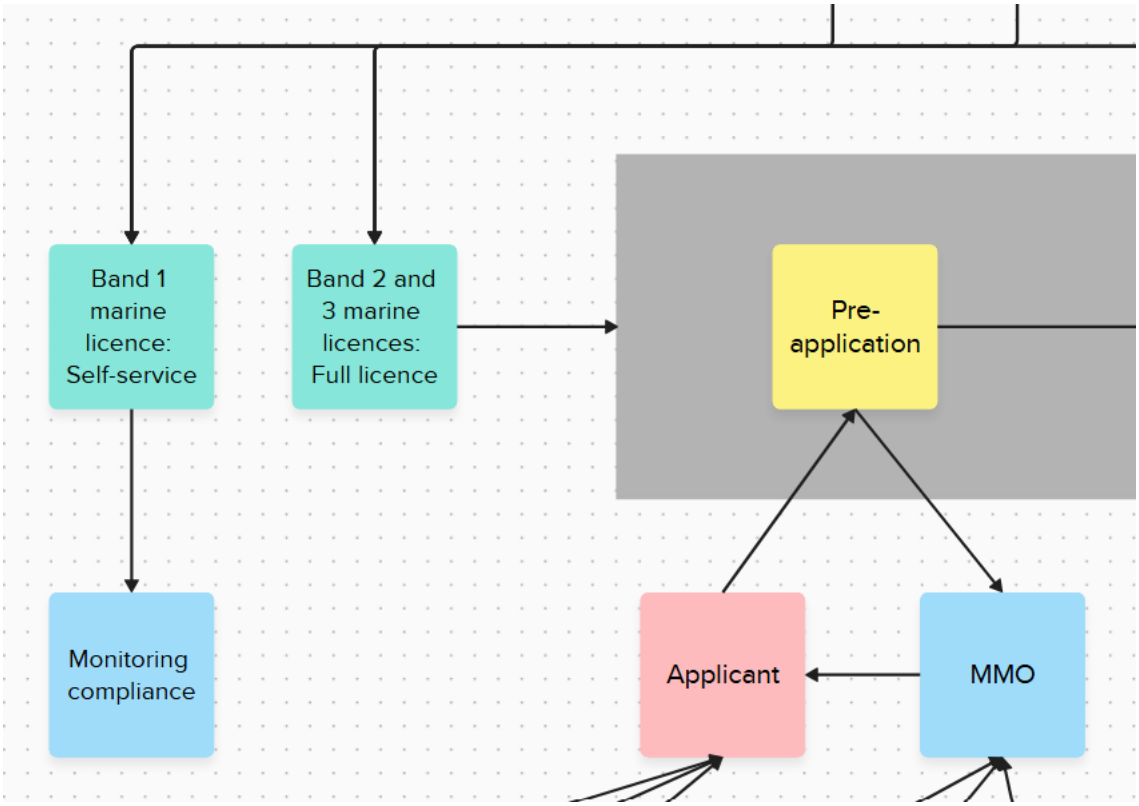


Figure 6: Extract of systems map relevant to self-service marine licensing.

Opportunity 4: *Adapt assessment requirements for NBS projects*

Potential gap: The perceived complexity of the marine licensing process, and the associated assessment requirements, may add to the time, cost, and difficulty in obtaining a marine licence.

As noted in Sections 3.2 and 3.3 and represented in Figure 7, there are a number of assessment requirements (including a marine plan policy assessment within 'consideration of marine plans') that an applicant must complete to obtain a marine licence. These requirements further need to be reviewed by the MMO's primary advisors (e.g., Natural England), and in some instances the MMO needs to complete its own assessments under certain legislation (e.g., as a competent authority under the Habitats Regulations, the MMO would need to complete an HRA). This review process can add to the complexity of applications, as well as time and cost. There may be scope to adapt and simplify assessment requirements within the marine licence process for NBS projects to enable their delivery.

An example of this is to review and improve both MMO and Statutory Nature Conservation Body (SNCB) procedures relating to HRA, specifically whether an NBS project should be considered 'directly connected with, or necessary to the management of a National Site Network (NSN) site'. In these circumstances, less time (and therefore incurred costs) would be required to comply with Habitats Regulations procedures as an Appropriate Assessment would not be necessary.

To alter assessment procedures for NBS, an agreement from the MMO's primary advisors (such as Natural England) will be required. Any change in approach would need to consider implications in the context of the Habitats Regulations. This could apply to NBS projects aimed at restoring or creating habitat features designated within a NSN site; this opportunity may not be possible where this is not the case.

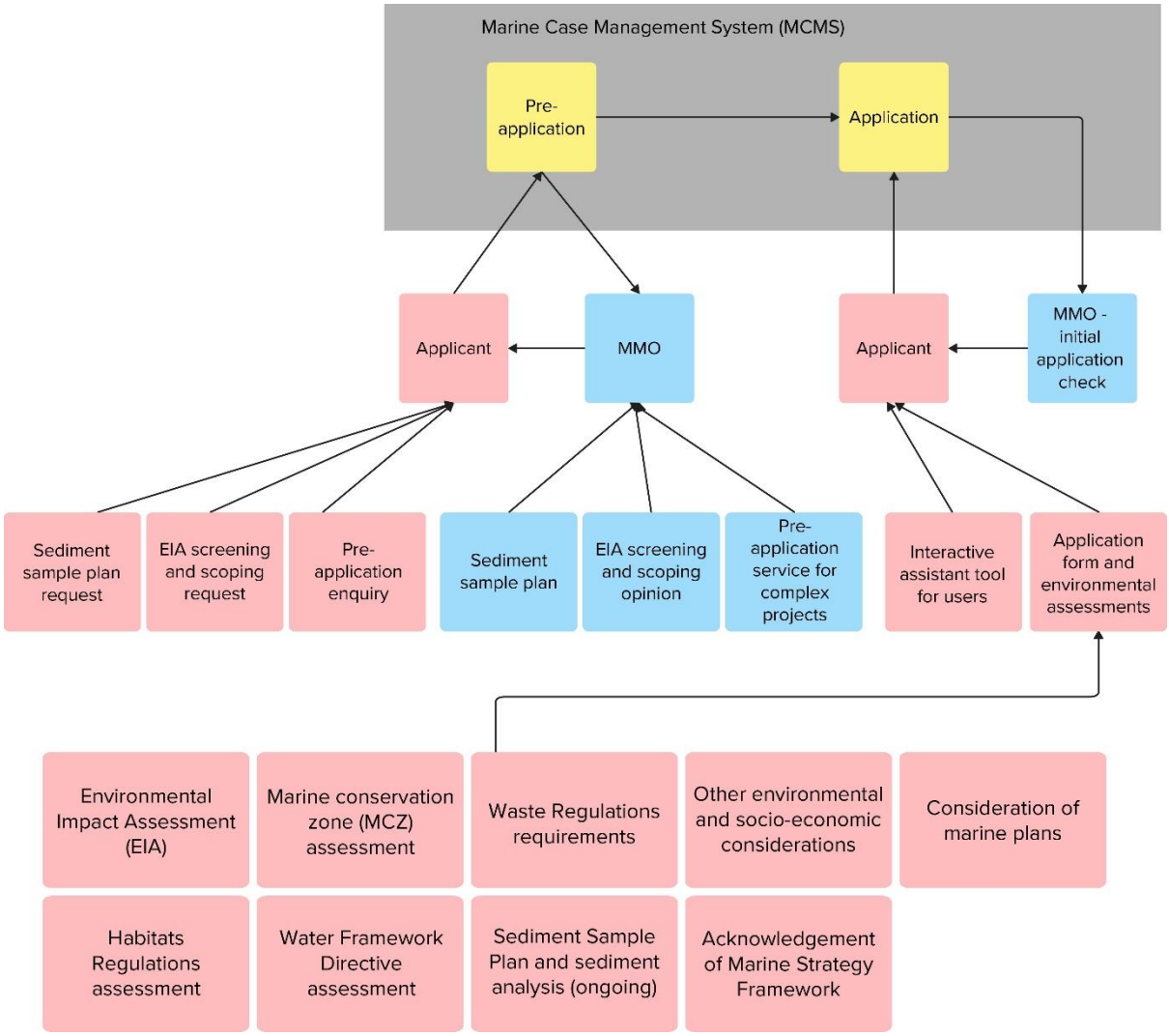


Figure 7: Extract of systems map relevant to assessment requirements.

Opportunity 5: Integrate NBS considerations as part of the marine licence application / determination process (e.g. NBS to be considered as part of the review of alternatives, link Marine Net Gain requirements)

Potential gap: The marine licence application or determination process does not currently include specific consideration of NBS.

There is an opportunity to build NBS-related questions or modules into the marine licence application process. For non-NBS projects, this would encourage applicants

to consider NBS as alternative designs or how they could be incorporated as part of wider development proposals. For applications specifically related to NBS projects, such questions in marine licence applications would have a positive bearing on decision-making by the MMO and its advisors.

NBS considerations could also be integrated within the MCMS Gateway Review process that MMO case officers complete to ensure consistency and defensibility in licensing decisions. Prompts or reminders for case officers to consider NBS or mitigation hierarchies[12] could be embedded in the gateway questions to support more consistent (and favourable) positions on NBS.

Figure 8 shows the areas in the marine licensing service where NBS questions of modules could be added. The current marine licence application form advises the applicant that a strategic appraisal is completed. Issues that should be considered by applicants, as stated in the application form, include:

- Identification of any conflicts between the project and the relevant marine plan(s);
- Identification of alignment of the project with the Marine Policy Statement and any relevant National Policy Statement(s);
- Identification of the environmental, social and economic drivers for a project that have been identified through existing feasibility studies or discussions with other public bodies (e.g. Local Authorities or Local Economic Partnerships);
- Identification of any potential issues that may arise due to UK law (e.g. Water Environment (Water Framework Directive) (England and Wales) Regulations 2017, Marine Strategy Regulations 2010, Conservation of Habitats & Species Regulations 2017), and how these can potentially be avoided, or mitigated, at the strategic level;
- Identification of any priority issues that may need addressing with regard to cumulative effects; and
- Options appraisal undertaken by the applicant, and the social, economic and environmental reasoning behind why the preferred option has been chosen.

A series of specific questions are then asked of the applicant relating to EIA, HRA, MCZ Assessment, Site of Special Scientific Interest (SSSIs) and WFD Compliance Assessments. Information on potential impacts and proposed mitigation associated with each activity are also requested as part of the application form. No specific consideration of NBS is asked for in the application form.

Gateway questions are completed by the MMO at application stage (Gateway Review 1 and Gateway Review 2), and also during the determination stage (Gateway Review 3). Again, NBS is not specifically considered in these reviews.

12 A mitigation hierarchy is a systematic approach used to minimise adverse effects of a project or scheme on the environment and people, as summarised by IEMA (2024). It is a series of steps or principles to guide decision-making and prioritise activity. Whilst different approaches can be taken, the hierarchy generally comprises four stages, with the most desirable first: avoid, prevent, reduce and, finally, offset. An additional positive step running alongside the mitigation hierarchy of 'enhance' is also sometimes employed.

MCMS is currently undergoing review as part of the MPLP project. It is possible to introduce questions to the application form as part of that review to encourage applicants to consider NBS as part of marine development projects. One example may be to ask the applicant how they consider NBS as part of their review of alternative options for their proposals. Gateway questions for the MMO could also be adjusted to embed NBS considerations in the decision-making process. The application form and gateway questions may also need to adapt to future changes to policy and legislation related to Marine Net Gain requirements.

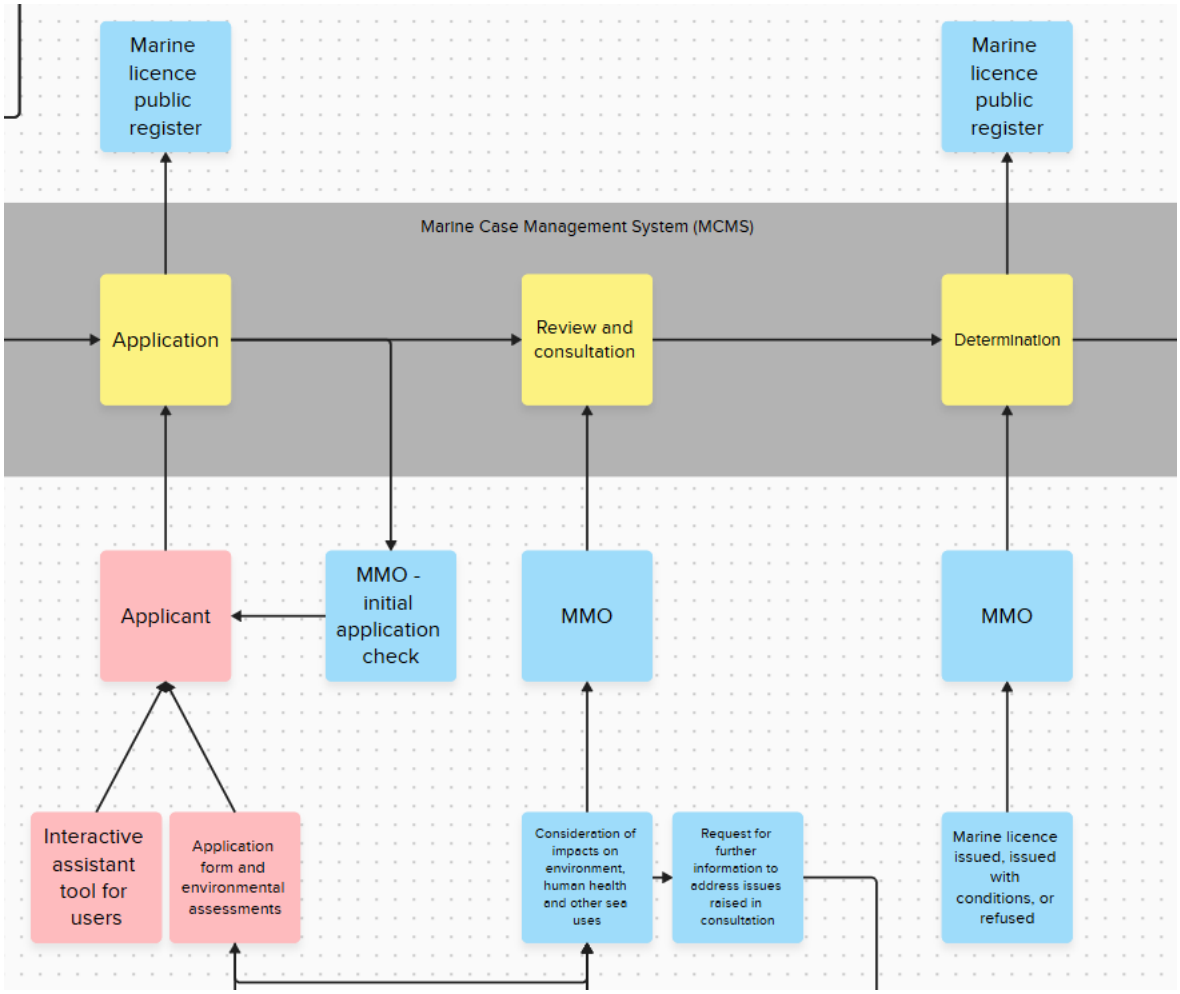


Figure 8: Extract of systems map relevant to assessment requirements.

Opportunity 6: Create internal NBS coordinator/champion posts across Defra group to ensure continuity of knowledge base and potential management roles (e.g., BUDS site management)

Potential gap: Personnel within the Marine Licensing Case Team at the MMO lead on certain marine sectors (e.g., ports and marinas), often referred to as 'champions'. Their roles include liaison with stakeholders and leading on marine licence applications within the sector to offer technical knowledge and expertise. However, there is no dedicated lead on NBS.

An NBS coordinator or champion post within the MMO would contribute towards an improved understanding of NBS projects and marine licensing requirements. This would also help to maintain a knowledge base on NBS within the MMO.

This opportunity/role would span across the entire marine licensing process, from pre-application to post-determination.

As explained in one of the interviews, the MMO heavily depends on external bodies like Natural England and Cefas for scientific advice on NBS. This suggests a potential gap in internal capacity to independently assess or promote NBS-related evidence or best practice.

One possible role may be to manage and monitor data for beneficial use of dredge sediment (BUDS) disposal sites in coastal waters. Currently, for offshore disposal sites, Cefas monitor volumes of disposed material, dredged areas, calculated levels of contaminants in the disposal material and licence details (using data returned against marine licences). The MMO, or another body within the Defra group, could administer this role for BUDS projects therefore promoting their use as a viable alternative to offshore disposal sites for dredging projects.

4.3.3 Generating and using evidence

Opportunity 7: Facilitate the greater acceptance of uncertainty / risks in decision-making for NBS (e.g., adaptive management, trial projects, particularly with regard to novel NBS)

Potential gap: One of the common challenges for the implementation of NBS is the uncertainty about the value delivered by NBS, and the potential impacts on existing habitats and species, as well as people. In determining a marine licence application, the MMO generally requires certainty (i.e., evidence) on impacts of a development on which to base robust and defensible decisions. This is especially the case in the marine environment because coastal habitats are often designated as an NSN site; a high degree of certainty is often needed that there would be no adverse effect under the Habitats Regulations and associated case law. However, certainty of effects can be difficult to achieve for NBS due to limited case examples and evidence, and also the fact the marine environment is dynamic, inter-connected and complex which is difficult to predict.

Given the obvious benefits NBS can bring, there is an opportunity to promote a pragmatic approach to NBS and allow greater acceptance of uncertainty and risk in MMO decision-making. This would allow the benefits of NBS to be realised more easily, as well as further the understanding of NBS that can be applied to future projects.

This opportunity would focus on the review and consultation and determination stages of the systems map (Figure 9).

Greater application of adaptive management principles is one method to resolve residual uncertainty of effects and provide necessary reassurance to regulators. It promotes flexible decision-making where management actions can be adjusted once outcomes become better understood. Allowing for a greater reliance on adaptive solutions could foreshorten licensing processes and lead to more manageable evidence requirements. This is particularly the case where the environmental risks associated with scientific uncertainty are largely beneficial, or small and reversible. This position could also be adopted where applications are made for trial or pilot NBS projects, in order to facilitate the benefits of increasing the evidence base for NBS.

It may be possible to make use of marine licence variations, under Section 72 of the MaCAA, to address any further adaptive management measures that are identified as being required following monitoring but are outside the existing marine licence activities. For example, for a beneficial use of dredge sediment site, a variation could be applied for to allow additional dredge material to be deposited following monitoring of environmental impacts. This would provide a mechanism for the marine licensing service to accommodate new evidence. Generally, this would only be possible within the term of a marine licence, and any variation to a marine licence must not add new activities and the change must be reasonable. However, for NBS projects, the MMO could allow more flexibility to help streamline variations for adaptive management.

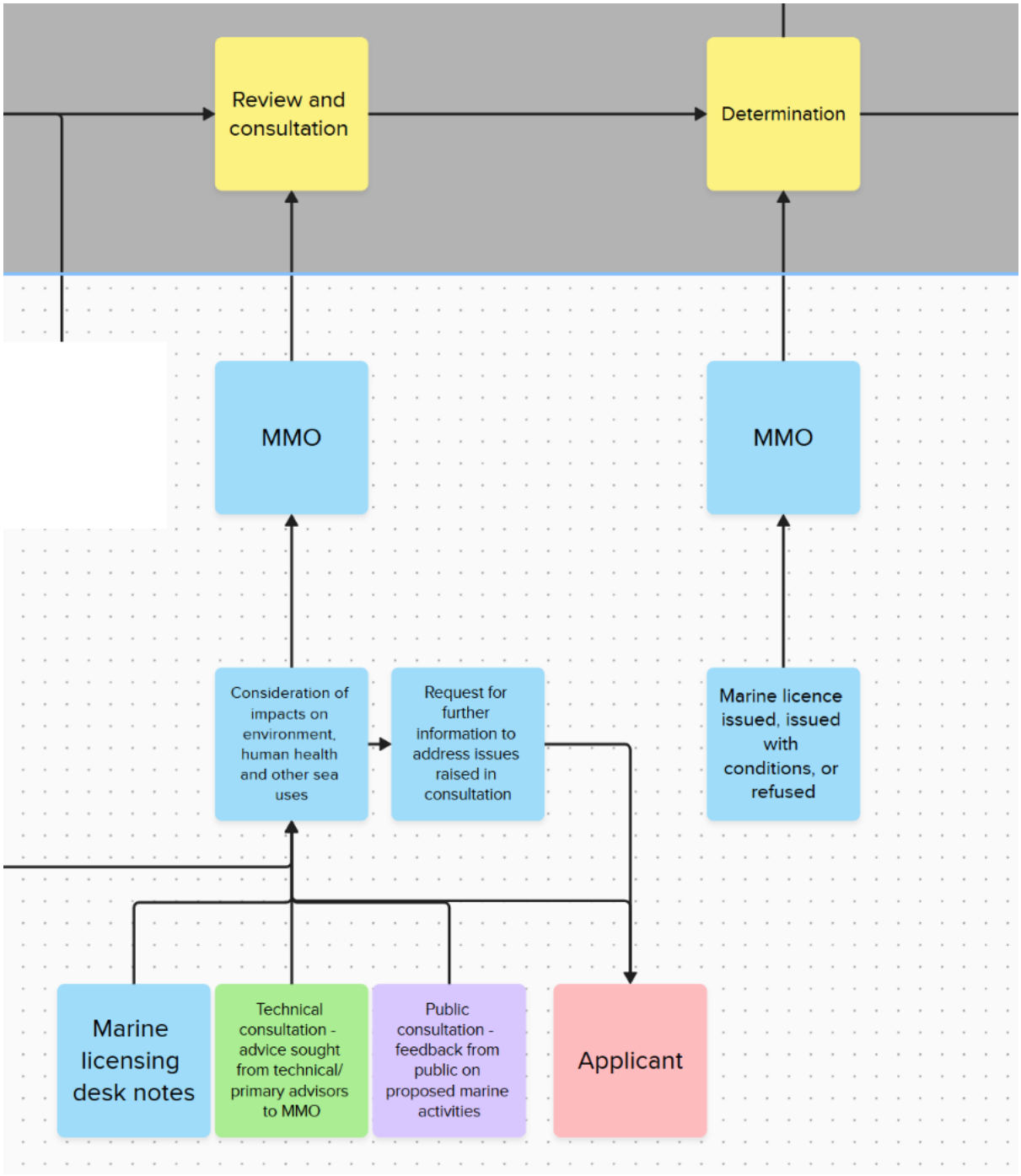


Figure 9: Extract of systems map relevant to decision-making.

Opportunity 8: Ensure mechanisms are in place to learn lessons from implemented NBS (UK and elsewhere) and maintain and disseminate this evidence base

Potential gap: The current MCMS does not allow easy extraction or analysis of data on the presence, quality or outcomes of NBS. This makes it difficult to track or evaluate how NBS is currently being implemented across cases and hinders opportunities for learning, reporting, and to implement adaptive management measures.

Figure 10 illustrates the activities involved in post-determination, which include post-consent monitoring. Developing mechanisms for post-consent monitoring and maintaining an evidence base to capture lessons learnt will help inform future decision-making for NBS.

Currently, there is no structured feedback loop from post-consent monitoring to inform future decision-making. Such feedback could come in the form of more formal requirements such as conditions that require the provision of monitoring data to the MMO, and the maintenance of a database which could be drawn on for future applications. A good example of this is projects which have a seabed lease from the Crown Estate; these projects have requirements in place to upload their monitoring data to the Marine Data Exchange (MDE). However, as described by a previous MMO report (MMO, 2017) on marine licensing conditions, any conditions for monitoring should be hypothesis driven and the rationale for monitoring should be understood and communicated. It may be prudent to focus any monitoring on existing NBS evidence gaps. The use of a standardised approach for developers to report monitoring data to the MMO could help ensure data is easily available and is provided in a useable format (i.e. it can be stored in a database and reused). MMO provides guidance on standardised approaches to post-consent monitoring for offshore wind farms but the standards are adopted on a voluntary basis. This could be built on for NBS.

The ongoing IT overhaul (part of MPLP) offers an opportunity to embed NBS tracking and monitoring capabilities within MCMS to improve the understanding of the impacts of NBS. This could include improved data handling at the point of data entry in MCMS (including both applications and post consent) to facilitate greater search functionality and data retrieval (MMO, 2017). Such an approach could include map-based searches and the use of key words and filtering. Wider opportunities also exist to link to other related data management systems. This includes those hosted by the MMO (such as the Explore Marine Plans digital service) or more widely such as the Marine Environmental Data and Information Network (MEDIN) or the MDE.

Other useful mechanisms to learn lessons from existing projects may include forums and workshops with stakeholders to share knowledge on NBS design, construction and environmental outcomes. Internal knowledge sharing on NBS within the MMO would also be of benefit.

Key mechanisms already in place include the various projects under the ReMeMaRe initiative. One example includes a new online national platform which is being

developed to map, audit and manage the implementation of projects that create and restore estuarine, coastal and marine habitats in the UK (the Marine Enhancement Directory). Another restoration database that is already in existence is ABPmer's Online Marine Registry (OMReg) which offers a valuable resource to view, and download completed schemes, case studies, white papers and conference outputs. ReMeMaRe also hosts an annual conference to promote knowledge sharing and create impetus for NBS projects.

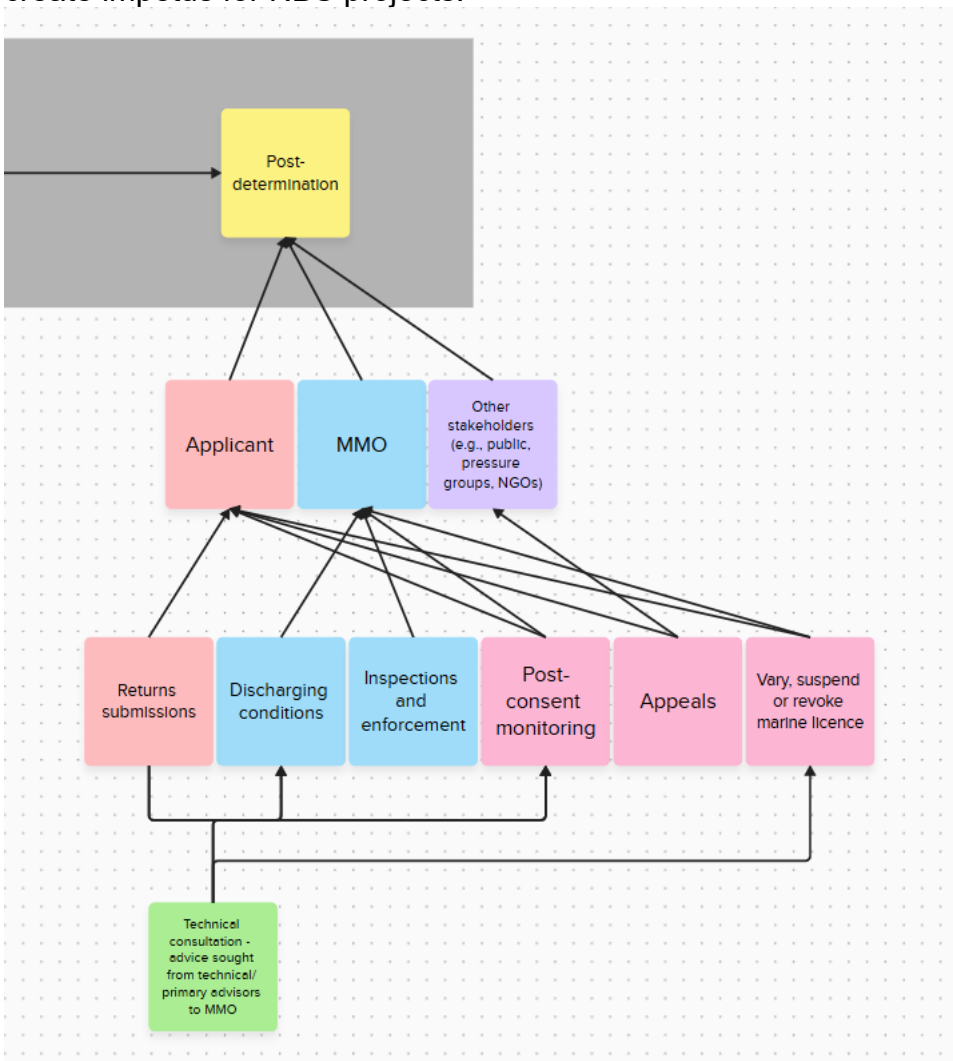


Figure 10: Extract of systems map relevant to post-consent monitoring.

4.3.4 Policy implementation

Opportunity 9: Reinforce marine policy implementation to support NBS integration

Potential gap: Existing marine plan policies that support NBS are not always given sufficient operational weight in licensing decisions, leading to missed opportunities for policy-aligned environmental enhancement.

A potential opportunity lies in further strengthening the implementation of marine plans and policies during marine licensing, particularly those that support NBS. While marine licensing already considers all relevant marine plan policies consistently -

evidenced through published decisions on the MMO public register - there remains a perception that decision-making tends to focus on mitigating adverse effects rather than encouraging positive environmental outcomes. This raises the question of whether improvements are needed not in licensing practice, but in the clarity and strength of the marine plan policies themselves. For example, while the BIO and CC policies[13] could be interpreted as supporting NBS, they do not explicitly require proposals to include NBS or justify their absence. Strengthening policy wording, and clarifying which policies carry greater weight through terms like "must" or "should," falls within the remit of marine planning, not licensing. However, the MMO could enhance transparency and consistency in how these policies are interpreted at the licensing stage - particularly where NBS is relevant - by offering examples or case studies that demonstrate how NBS-related considerations have informed previous decisions. To support this, the MMO could adopt a more structured and transparent approach to referencing relevant policies during case review, without altering the legal framework. This could help applicants better understand expectations, encourage early engagement with NBS options, and demonstrate how licensing decisions support wider environmental goals such as Good Environmental Status (GES) and net zero. The opportunity is highlighted in the extract of the systems map shown in Figure 11 and is related to the ‘Legal and policy framework’, and more specifically, to marine plans and how they feed into the licensing process.

This policy-based approach could be supported by targeted guidance and advice for applicants and staff, which could be delivered through the MPLP. Clearer connections between marine plan policies and licensing expectations - delivered through updated guidance materials, pre-application advice, and internal training - could promote understanding of how marine planning supports NBS.
While initiatives such as the ReMeMaRe project, which identifies priority areas for seagrass, salt marsh, and reef restoration, are important examples of policy-aligned action, it is important to recognise that marine plans should align with overarching government policy, and marine licensing should focus on ensuring compliance with those plans rather than giving additional weight to individual policies based on shifting priorities. Within licensing, the emphasis should therefore remain on consistent interpretation and conformance with marine plan policies relevant to NBS.

By reinforcing the role of marine policies in day-to-day licensing decisions, and by linking those decisions clearly to biodiversity and climate objectives, the MMO could operationalise NBS more effectively without the need for regulatory reform. Care must be taken to maintain a balanced approach and avoid perceptions of bias - particularly as giving greater weight to policies that support NBS may be seen as compromising neutrality if not clearly grounded in overarching government priorities. Nonetheless, more assertive and consistent use of marine policies that already support NBS could help applicants better anticipate expectations, improve application quality, and support ecosystem recovery through licensing.

[13] BIO and CC policies are those linked to biodiversity and climate change respectively.

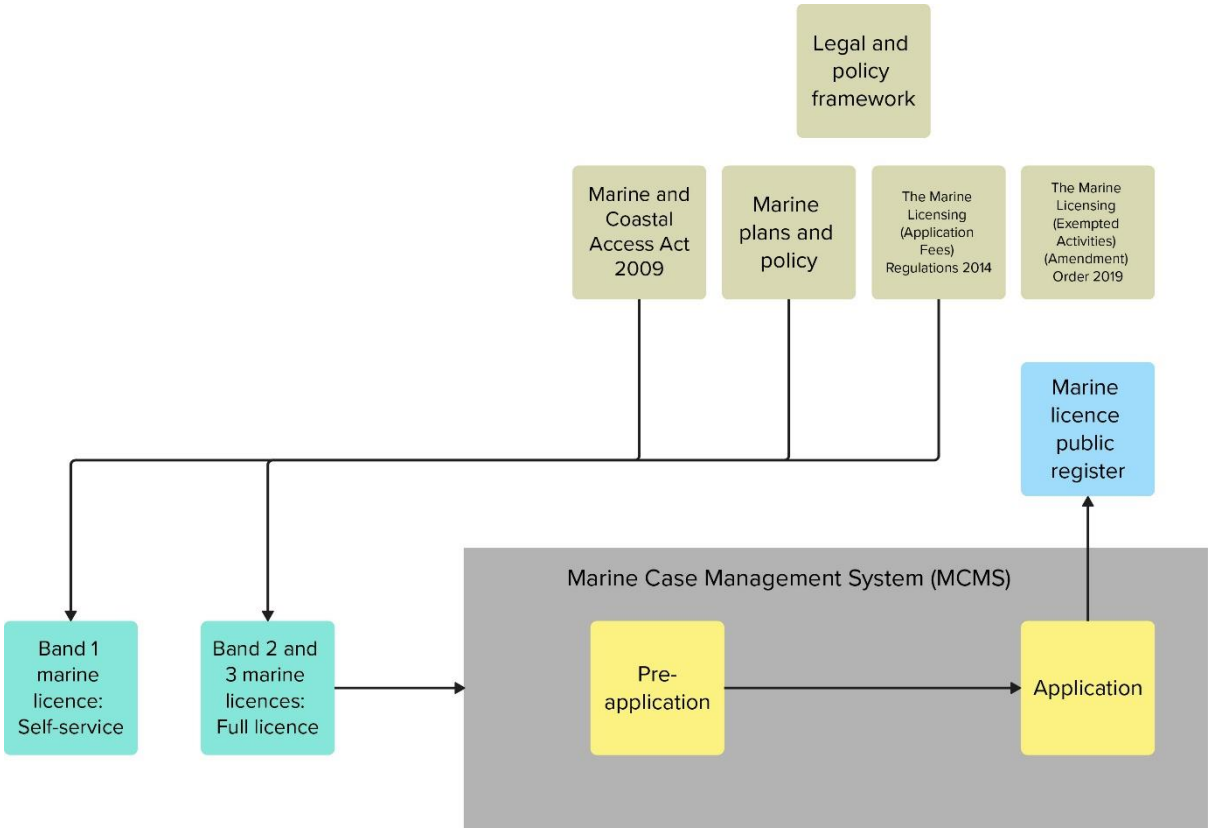


Figure 11: Extract of systems map relevant to strengthening marine policy implementation to support NBS integration.

4.3.5 Guidance and training

Opportunity 10: *Provide guidance to applicants to improve marine licence applications*

Potential gap: Applicants lack clear, accessible guidance on how and when to integrate NBS into marine licence applications.

Improving the clarity and accessibility of guidance for applicants presents a key opportunity to enhance the integration of NBS into the marine licensing process. At present, developers are unclear when and how NBS should be considered, particularly if their projects are not directly focused on restoration or environmental enhancement. This can create inconsistency in application quality and a tendency to overlook NBS unless they are explicitly required. By offering clearer, user-friendly guidance that links marine plan policies to licensing expectations, the MMO can reduce uncertainty, enable more consistent uptake of NBS, and improve the overall quality of marine licence applications. However, it is recognised that delivering this guidance effectively would require a clear policy steer establishing NBS integration as a priority, along with the identification and communication of approved options, such as through marine net gain (MNG), to ensure consistent interpretation and application across projects.

To implement this opportunity, guidance materials should be developed that clearly set out when NBS are encouraged, how they contribute to relevant marine plan policies (e.g. biodiversity and climate resilience), and what constitutes a strong NBS-related submission. These materials could include sector-independent checklists, step-by-step walkthroughs of expectations at each licensing stage, and FAQs to clarify technical or regulatory requirements. Embedding NBS prompts and explanations within application forms themselves would further reinforce these expectations and guide applicants through the process in a structured way. For example, questions could ask whether the project avoids or mitigates impacts using NBS, or how it contributes to ecosystem restoration. As highlighted in the extract of the systems map shown in Figure 12, this opportunity could be implemented in the segments of the licensing service where applicants directly interact with the MMO at pre-application and application stages, as well as at application stage considering marine plans.

The guidance would also benefit from the inclusion of real-world case studies that demonstrate successful NBS integration into marine licensing. These examples could help applicants visualise practical applications of NBS, particularly for sectors less familiar with ecological or restoration-based approaches. In parallel, internal training for MMO case officers should accompany external guidance to ensure consistent messaging and decision-making across the system.

It is important to ensure that this improved guidance is framed as supportive rather than prescriptive. As noted in stakeholder interviews, over-prioritising NBS risks being perceived as sectoral favouritism, which could undermine the MMO’s relationships with other marine industries. Guidance should therefore make clear that while NBS are an effective way to meet many policy requirements, their use must be proportionate, evidence-based, and appropriate to the nature and scale of the proposed activity.

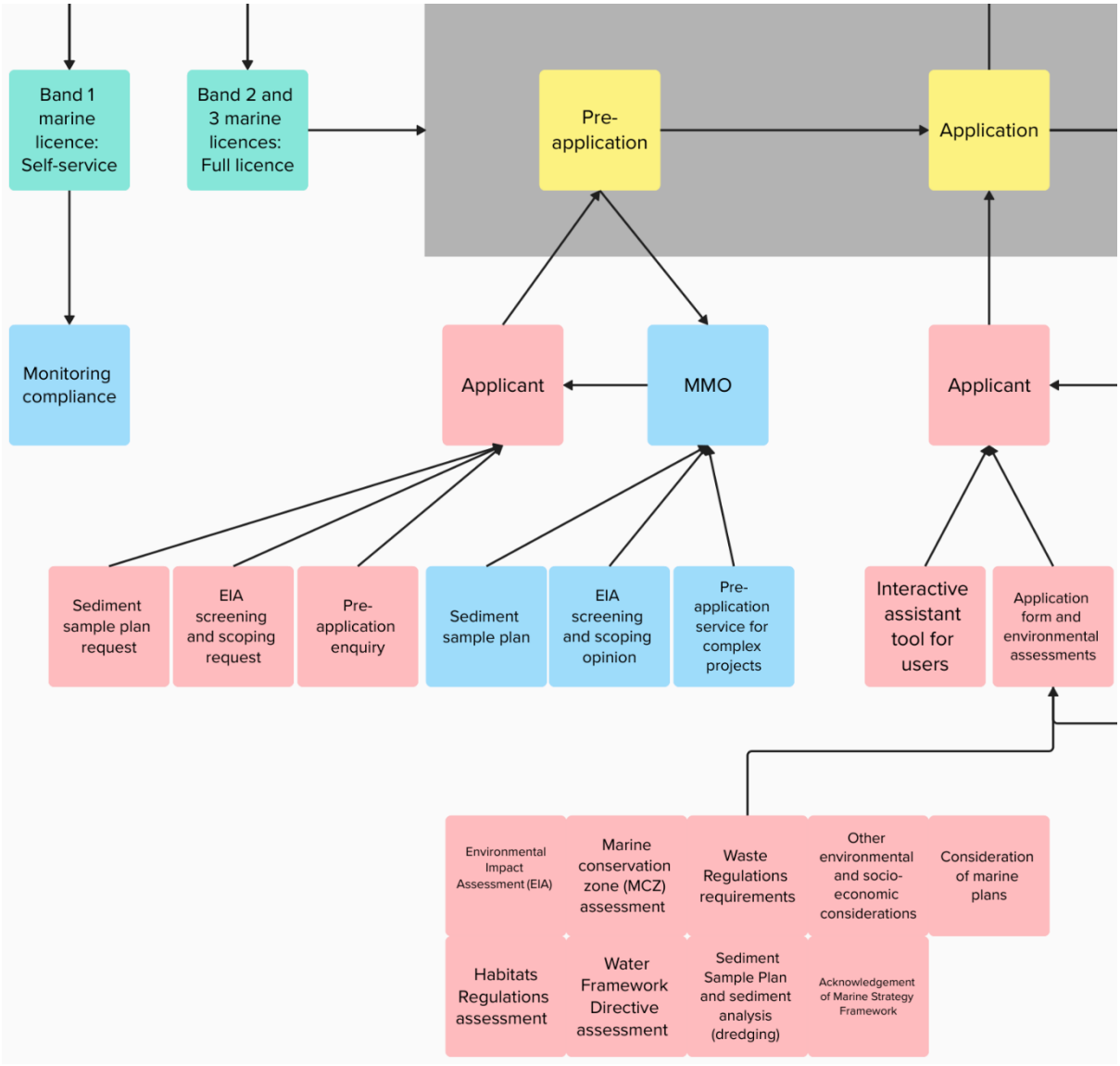


Figure 12: Extract of systems map relevant to guidance to applicants to improve marine licence applications.

Opportunity 11: *Emphasise NBS through pre-application and online guidance*

Potential gap: NBS are not consistently introduced during early engagement, limiting their consideration in project design and licence preparation.

Strengthening the visibility of NBS through pre-application services and online guidance offers a practical opportunity to support applicants in considering NBS early in the marine licensing process. Many developers, particularly those unfamiliar with restoration or environmental enhancement, are more likely to engage with NBS if they are introduced during the early stages of project planning. By embedding references to NBS within the MMO's pre-application discussions and licensing webpages, the organisation can prompt applicants to explore NBS options before

formal submission - when design flexibility and openness to alternatives are typically greater.

This opportunity can be implemented through modest enhancements to existing MMO services. The MMO's website already hosts a wide range of licensing guidance, and this content could be tailored to emphasise the benefits and expectations around NBS. Simple additions - such as sections explaining what NBS are, how they relate to marine plan policies, and when they might be relevant - would help normalise their consideration. Likewise, the MMO's pre-application service could include standard prompts or questions around whether applicants have explored NBS, particularly where their proposals intersect with habitats or policies that favour ecological enhancement. As highlighted in the extract of the systems map shown in Figure 13, this opportunity could be implemented in the pre-application phase of the licensing process.

Incorporating NBS messaging into these early touchpoints would also align with how the licensing system is designed to function, ensuring proposals are consistent with marine plan policies from the outset. For example, a project proposing coastal infrastructure could be asked in the pre-application stage whether it has considered saltmarsh or seagrass elements to mitigate impacts or deliver biodiversity gain. This not only improves application quality but could also reduce delays by clarifying expectations early in the process.

As with other guidance interventions, it is important that messaging around NBS remains balanced and proportionate. Stakeholder feedback has highlighted the need for the MMO to avoid the appearance of favouring one type of solution over others, particularly where NBS may not be suitable. Pre-application and online guidance should therefore emphasise that while NBS could offer clear benefits, they are one of several tools available to meet marine plan policy objectives, and their use should be justified in relation to project context and environmental needs.

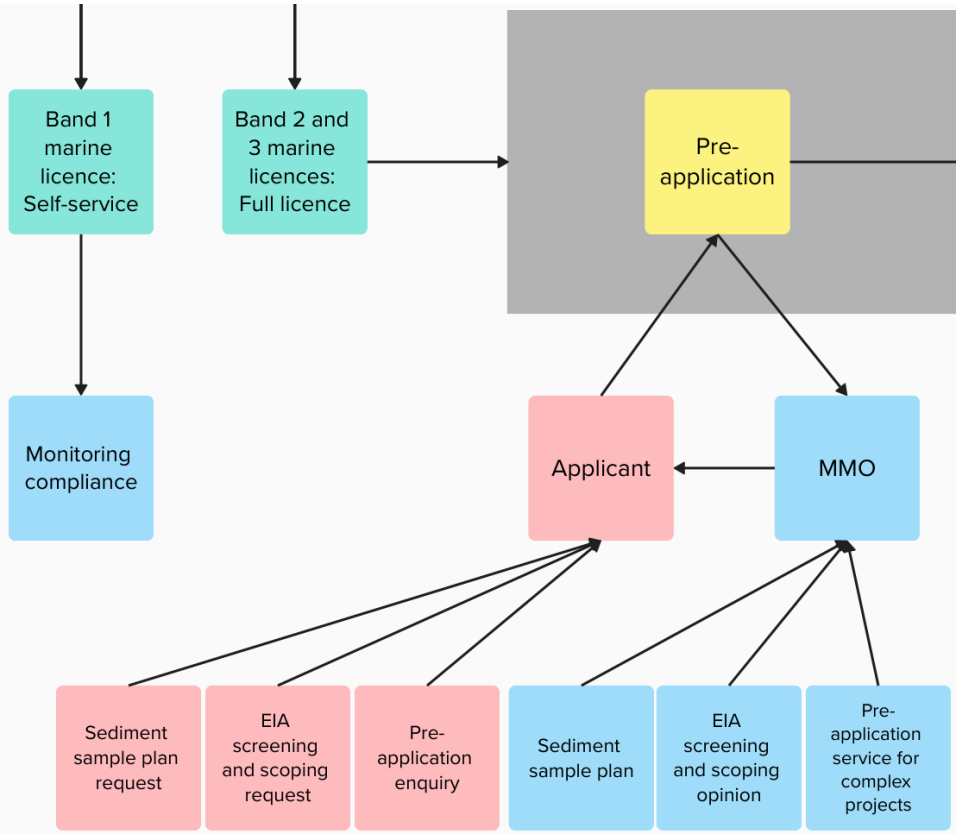


Figure 13: Extract of systems map relevant to pre-application stage.

Opportunity 12: *Strengthen internal guidance and training on NBS for MMO staff*

Potential gap: MMO staff have limited internal guidance and training on how to assess or support NBS in marine licensing.

There is a significant opportunity to build internal capacity for handling NBS within the marine licensing process by providing structured guidance and systematic training for MMO case officers and managers. Currently, many staff are more familiar with established regulatory systems and workflows, and there is limited in-house guidance on how to identify, evaluate, or advise on NBS in applications. Strengthening internal knowledge and confidence would improve the consistency and defensibility of licensing decisions, ensure marine plan policies are interpreted effectively, and support the mainstreaming of NBS across routine casework.

To deliver this opportunity, the MMO could build on its existing training structures - such as the six-week induction training for new starters (EO to SEO level), which already includes scenarios and instruction on MCMS - by incorporating NBS-specific content into these modules. In addition, NBS could be embedded into ongoing benchmarking sessions, which currently cover topics like EIAs, HRAs and MPPAs, to ensure regular touchpoints for refreshing and deepening staff understanding, even if these sessions are not held annually. This would help normalise NBS considerations within routine decision-making and enhance confidence across the licensing team.

The training resources should include practical tools such as worked examples, FAQs, decision trees, and checklists that explain when and how NBS can be considered under existing policy frameworks. Building on existing resources like the ReMeMaRe desk note, training could use familiar systems - such as the Habitats Regulations process - as a conceptual anchor to help staff relate new expectations around NBS to established practices. Training should be systematic, rather than ad hoc, and embedded within standard induction and professional development pathways for all relevant staff.

In addition to standalone training, the MCMS itself offers a valuable platform for reinforcing NBS consideration. Its 'gateway question' system ensures decisions are auditable and consistent and could be expanded to include prompts for officers to check whether NBS options have been considered, especially in cases involving habitat impacts or climate-relevant infrastructure. These prompts would act as just-in-time learning tools, reinforcing formal training and supporting case-by-case application of guidance.

Addressing the current gaps in internal knowledge would reduce reliance on external bodies for technical advice and help the MMO play a more proactive role in encouraging high-quality, environmentally beneficial proposals. It would also support broader institutional goals around climate adaptation, ecosystem recovery, and GES, by ensuring NBS are not just recognised in policy, but effectively operationalised in licensing practice.

This opportunity is relevant for the entire marine licensing process, from pre-application to post-determination.

4.4 Alignment of opportunities with goals

4.4.1 MMO Goal 1 (ecosystem recovery)[14]

Table 1 links the opportunities identified above to the outcomes from the MMO's Goal 1 in MMO2030 (MMO, 2023). It briefly discusses how the opportunities could contribute towards the outcomes. Table 1 also flags possible limitations associated with these opportunities.

[14] Note that this is the wording for a simplified version of Goal 1 from the study specifications. As stated in the background, Goal 1 in the MMO's strategic plan, MMO2030 (MMO, 2023), has a wider scope: "Work with partners to restore or recover functioning marine ecosystems, introducing increased levels of protection and improvement to our marine environment".

Table 1: Opportunities linked to outcomes for Goal 1. Outcomes have been sourced from MMO (2023).

Outcome	Opportunity (O)	Limitations	Details
Significantly improved levels of protection of marine wildlife and habitats through influencing and managing human behaviours	O1: Introduce marine licence exemptions for the delivery of small scale NBS O2: Reduce application costs for marine licence applications for NBS	• Legislative change required via Defra and Parliament • Risks to fee recovery model and financial sustainability	A range of opportunities identified in this report can support the MMO's Strategy, Goal 1 outcome of significantly improving protection for marine wildlife and habitats by influencing and managing human behaviours. Several of these focus on removing procedural and financial barriers to the delivery of NBS, such as introducing marine licence exemptions, reducing application costs, and enabling small-scale NBS projects to qualify for self-service licensing. These changes could make it easier and more attractive for applicants to pursue environmentally beneficial projects. Other opportunities seek to streamline assessment processes and integrate NBS more visibly into application and decision-making stages, ensuring they are considered as part of alternatives
	O3: Include small scale NBS in self-service activities for self-service marine licensing	• Strict eligibility criteria limit what qualifies as self-service • Broad scope of NBS makes consistent classification difficult • Risk of reduced oversight for potentially impactful projects	
	O4: Adapt assessment requirements for NBS projects	• Dependent on agreement from SNCBs (e.g. Natural England) • May conflict with legal obligations under Habitats Regulations • Not applicable to all types of NBS projects	
	O5: Integrate NBS considerations as part of the marine licence application / determination process (e.g. NBS to be	• Requires updates to MCMS and application forms • Needs alignment with evolving policies like Marine Net Gain	

Outcome	Opportunity (O)	Limitations	Details
	considered as part of the review of alternatives, link Marine Net Gain requirements)	• Risk of inconsistent uptake without accompanying training	assessments and aligned with Marine Net Gain ambitions. Supporting this, proposals such as creating NBS coordinator roles and increasing tolerance for uncertainty (e.g., through trial projects or adaptive management) would build institutional confidence in approving and managing novel NBS interventions. Improved internal capability is also essential. Strengthening guidance and training for MMO staff, supported by mechanisms to capture and share lessons from existing NBS projects (such as BUDS and ReMeMaRe), would help embed NBS more systematically within licensing practice. Externally, clearer guidance and pre-application advice could steer applicants towards policy-aligned outcomes, making it easier to design proposals that support biodiversity and climate objectives.
	O6: Create internal NBS coordinator/champion posts across Defra group to ensure continuity of knowledge base and potential management roles (e.g., BUDS site management)	• Depends on available resourcing and structural change • Relies on collaboration across Defra group • May not address existing reliance on external scientific advice	
	O7: Facilitate the greater acceptance of uncertainty / risks in decision-making for NBS (e.g., adaptive management, trial projects, particularly with regard to novel NBS	• Legal requirement for certainty limits regulatory flexibility • Potential conflicts with HRA standards and case law • Adaptive management not always feasible under current licence terms	
	O8: Ensure mechanisms are in place to learn lessons from implemented NBS (UK and elsewhere) and maintain and disseminate this evidence base	• MCMS lacks NBS-specific tracking or analytical functionality • No standardised process for post-consent data collection or sharing • Requires system upgrades and formal feedback loops	
	O9: Reinforce marine policy implementation to support NBS integration	• Licensing must remain neutral, not favour specific policies	

Outcome	Opportunity (O)	Limitations	Details
		• Marine plans may lack strong wording (e.g. “shall”, "must") for NBS • Changes in interpretation risk perceptions of bias	Collectively, these opportunities could drive behavioural change across the licensing system - encouraging regulators, applicants, and wider stakeholders to adopt more proactive, restorative approaches to marine management and contribute to ecosystem recovery.
	O10: Provide guidance to applicants to improve marine licence applications	• Needs a clear policy mandate prioritising NBS • Must avoid perceptions of prescriptiveness or bias • Risk of guidance being ignored without internal consistency	
	O11: Emphasise NBS through pre-application and online guidance	• Risk of over-promoting NBS where unsuitable • Requires careful framing to maintain neutrality • Effectiveness depends on early applicant engagement	
	O12: Strengthen internal guidance and training on NBS for MMO staff	• Must integrate systematically into existing MMO training • Relies on consistent delivery and updates over time • Requires staff capacity and time to engage with training	

Outcome	Opportunity (O)	Limitations	Details
Compliance with the conditions of our marine licensing framework	O8: Ensure mechanisms are in place to learn lessons from implemented NBS (UK and elsewhere) and maintain and disseminate this evidence base	• MCMS lacks NBS-specific tracking or analytical functionality • No standardised process for post-consent data collection or sharing • Requires system upgrades and formal feedback loops	The opportunities outlined here could help strengthen compliance with the conditions of the marine licensing framework by promoting clearer understanding, more consistent implementation, and informed decision-making. Improving guidance for applicants, both in terms of policy interpretation and practical application, could reduce ambiguity, leading to better-quality submissions and increased alignment with licence conditions. Reinforcing the role of marine plans and policies within licensing decisions ensures that expectations are clearly set and consistently applied, providing a more transparent regulatory framework. Additionally, establishing mechanisms to capture and share lessons from implemented NBS, both within the UK and internationally, will help build a robust, evidence-based foundation for future decision-making. This, in turn,
	O9: Reinforce marine policy implementation to support NBS integration	• Licensing must remain neutral, not favour specific policies • Marine plans may lack strong wording (e.g. "must") for NBS • Changes in interpretation risk perceptions of bias	
	O10: Provide guidance to applicants to improve marine licence applications	• Needs a clear policy mandate prioritising NBS • Must avoid perceptions of prescriptiveness or bias • Risk of guidance being ignored without internal consistency	

Outcome	Opportunity (O)	Limitations	Details
			supports compliance by enabling both regulators and applicants to learn from precedent, avoid known pitfalls, and align project delivery with policy objectives and licensing requirements. Together, these actions could enable a more predictable and accountable system, improving overall compliance across the marine licensing process.
Compliance with regulatory frameworks	O10: Provide guidance to applicants to improve marine licence applications	• Needs a clear policy mandate prioritising NBS • Must avoid perceptions of prescriptiveness or bias • Risk of guidance being ignored without internal consistency	Providing clearer guidance to applicants on how to prepare marine licence applications could support stronger compliance with regulatory frameworks by improving understanding of what is required under current policy and legislation. By clarifying how NBS align with marine plan policies and licensing expectations, applicants are better equipped to design compliant proposals from the outset. This reduces the risk of delays, omissions, or non-conformities during the licensing process, contributing

Outcome	Opportunity (O)	Limitations	Details
			to a more efficient and effective regulatory system.
Understanding / agreement of the recovery and protection methods that drive increased biodiversity in our seas.	O1: Introduce marine licence exemptions for the delivery of small scale NBS	• Requires complex legal and ministerial process • Limited to low-risk activities, restricting broader applicability • Risk of inconsistent classification of NBS as "low-risk"	The opportunities identified in this report support greater understanding and agreement on effective recovery and protection methods, such as NBS, that can drive increased biodiversity in the marine environment. Removing practical and financial barriers to NBS delivery (e.g. through exemptions and self-service licensing) allows more projects to proceed, creating real-world examples that demonstrate what works. Complementing this, adapting assessment processes and embedding NBS in application and determination stages helps integrate these methods within existing regulatory frameworks. Improving the evidence base, through mechanisms to learn from implemented NBS and increased acceptance of adaptive, risk-tolerant approaches, enables more informed, confident use of recovery techniques. Internally,
	O2: Reduce application costs for marine licence applications for NBS	• Legislative change required via Defra and Parliament • Risks to fee recovery model and financial sustainability • Higher-band projects in MPAs may still be disadvantaged	
	O3: Include small scale NBS in self-service activities for self-service marine licensing	• Strict eligibility criteria limit what qualifies as self-service • Broad scope of NBS makes consistent classification difficult • Risk of reduced oversight for potentially impactful projects	
	O4: Adapt assessment requirements for NBS projects	• Dependent on agreement from SNCBs (e.g. Natural England)	

Outcome	Opportunity (O)	Limitations	Details
		• May conflict with legal obligations under Habitats Regulations • Not applicable to all types of NBS projects	initiatives such as creating NBS coordinator roles and enhancing staff training ensure knowledge is retained and applied consistently across the system. Externally, improved guidance and early-stage support for applicants promotes broader awareness of how NBS can meet biodiversity objectives. Together, these opportunities could foster shared understanding and trust in the tools and approaches most likely to deliver ecosystem recovery.
	O5: Integrate NBS considerations as part of the marine licence application / determination process (e.g. NBS to be considered as part of the review of alternatives, link Marine Net Gain requirements)	• Requires updates to MCMS and application forms • Needs alignment with evolving policies like Marine Net Gain • Risk of inconsistent uptake without accompanying training	
	O6: Create internal NBS coordinator/champion posts across Defra group to ensure continuity of knowledge base and potential management roles (e.g., BUDS site management)	• Depends on available resourcing and structural change • Relies on collaboration across Defra group • May not address existing reliance on external scientific advice	
	O7: Facilitate the greater acceptance of uncertainty / risks in decision making for NBS (e.g., adaptive management, trial projects, particularly with regard to novel NBS	• Legal requirement for certainty limits regulatory flexibility • Potential conflicts with HRA standards and case law • Adaptive management not al-ways feasible un-	

Outcome	Opportunity (O)	Limitations	Details
		der current license terms	
	O8: Ensure mechanisms are in place to learn lessons from implemented NBS (UK and elsewhere) and maintain and disseminate this evidence base	• MCMS lacks NBS-specific tracking or analytical functionality • No standardised process for post-consent data collection or sharing • Requires system upgrades and formal feedback loops	
	O9: Reinforce marine policy implementation to support NBS integration	• Licensing must remain neutral, not favour specific policies • Marine plans may lack strong wording (e.g. "must") for NBS • Changes in interpretation risk perceptions of bias	
	O10: Provide guidance to applicants to improve marine licence applications	• Needs a clear policy mandate prioritising NBS • Must avoid perceptions of prescriptiveness or bias • Risk of guidance being ignored without internal consistency	

Outcome	Opportunity (O)	Limitations	Details
	O11: Emphasise NBS through pre-application and online guidance	• Risk of over-promoting NBS where unsuitable • Requires careful framing to maintain neutrality • Effectiveness depends on early applicant engagement	
	O12: Strengthen internal guidance and training on NBS for MMO staff	• Must integrate systematically into existing MMO training • Relies on consistent delivery and updates over time • Requires staff capacity and time to engage with training	

4.4.2 MMO Goal 2 (management of marine planning framework)

Table 2 maps the opportunities identified to the desired outcomes from Goal 2 of MMO2030 (MMO, 2023). It also briefly discusses how the opportunities could aid achievement of the outcomes as well as highlighting possible limitations.

Table 2: Opportunities linked to outcomes for Goal 2. Outcomes have been sourced from MMO (2023).

Outcome	Opportunity (O)	Limitations	Details
Marine plans are the focal point for a joined up, integrated planning framework that manages the marine space	O9: Reinforce marine policy implementation to support NBS integration	• Licensing must remain neutral, not favour specific policies • Marine plans may lack strong wording (e.g. "must") for NBS • Changes in interpretation risk perceptions of bias	Reinforcing the implementation of marine policies that support NBS could help ensure that marine plans serve as the central mechanism for integrated, joined-up management of the marine space. By assigning greater operational weight to NBS-relevant policies in licensing decisions and strengthening the link between policy intent and regulatory delivery, the MMO could embed marine plans more visibly and consistently within day-to-day decision-making.
Marine planning enables the right activities to happen in the right place, at the right time and in the right way, in the marine and coastal space and places sustainability of development at the centre of all decisions	O9: Reinforce marine policy implementation to support NBS integration	• Licensing must remain neutral, not favour specific policies • Marine plans may lack strong wording (e.g. "must") for NBS • Changes in interpretation risk perceptions of bias	Reinforcing the implementation of marine policies that support NBS helps ensure that marine planning directs the right activities to the right places in a timely and sustainable way. By more consistently applying NBS-relevant policies within licensing decisions, the MMO could promote environmentally beneficial projects that align with spatial priorities and support ecosystem recovery. This strengthens the role of marine planning in delivering balanced
	O12: Strengthen internal guidance and training on NBS	• Must integrate systematically into existing MMO training • Relies on consistent delivery and updates over time	

Outcome	Opportunity (O)	Limitations	Details
		• Requires staff capacity and time to engage with training	outcomes across economic, social, and environmental objectives.
Anticipating and enabling investment in marine and coastal developments (including offshore wind) with confidence	O2: Reduce application costs for marine licence applications for NBS	• Legislative change required via Defra and Parliament • Risks to fee recovery model and financial sustainability • Higher-band projects in MPAs may still be disadvantaged	The identified opportunities support a more enabling and investment-ready marine planning framework by reducing regulatory uncertainty and improving the clarity and efficiency of the licensing process. Lowering application costs and adapting assessment requirements for NBS projects could make environmentally sustainable developments more financially and procedurally viable. Greater acceptance of uncertainty, through adaptive management and trial approaches, could encourage innovation, particularly for novel NBS and emerging sectors like offshore wind. In parallel, improved guidance and the active sharing of lessons from implemented NBS projects could help build investor confidence by clarifying expectations and demonstrating what works in practice. Overall, these
	O4: Adapt assessment requirements for NBS projects	• Dependent on agreement from SNCBs (e.g. Natural England) • May conflict with legal obligations under Habitats Regulations • Not applicable to all types of NBS projects	
	O7: Facilitate the greater acceptance of uncertainty / risks in decision-making for NBS (e.g., adaptive management, trial projects, particularly with regard to novel NBS	• Legal requirement for certainty limits regulatory flexibility • Potential conflicts with HRA standards and case law • Adaptive management not always feasible under current licence terms	

Outcome	Opportunity (O)	Limitations	Details
	O8: Ensure mechanisms are in place to learn lessons from implemented NBS (UK and elsewhere) and maintain and disseminate this evidence base	• MCMS lacks NBS-specific tracking or analytical functionality • No standardised process for post-consent data collection or sharing • Requires system upgrades and formal feedback loops	opportunities could result in a more predictable and supportive environment for sustainable marine and coastal investment.
	O10: Provide guidance to applicants to improve marine licence applications	• Needs a clear policy mandate prioritising NBS • Must avoid perceptions of prescriptiveness or bias • Risk of guidance being ignored without internal consistency	
Quicker decisions allow sustainable development in the marine space to progress more rapidly	• Introduce marine licence exemptions for the delivery of small scale NBS • Reduce application costs for marine licence applications for NBS • Include small scale NBS in self-service activities for self-service marine licensing • Adapt assessment requirements for NBS projects • Facilitate the greater acceptance of uncertainty / risks in decision-making for		These opportunities collectively support faster, more efficient decision-making in the marine licensing process, helping sustainable development progress at pace. Introducing licence exemptions, expanding self-service options, and reducing application costs for small-scale NBS projects could shorten timelines and ease administrative burden. Adapting assessment requirements and embracing greater flexibility in decision-making, particularly for novel or low-risk NBS, could also

Outcome	Opportunity (O)	Limitations	Details
	NBS (e.g., adaptive management, trial projects, particularly with regard to novel NBS • Provide guidance to applicants to improve marine licence applications • Strengthen internal guidance and training on NBS for MMO staff		streamline case handling. Clearer guidance for applicants and strengthened internal training for MMO staff could further improve the quality and consistency of submissions and decisions, reducing delays and enabling quicker progression of sustainable marine activities.
Quicker decisions allow sustainable development in the marine space to progress more rapidly	O1: Introduce marine licence exemptions for the delivery of small scale NBS	• Requires complex legal and ministerial process • Limited to low-risk activities, restricting broader applicability • Risk of inconsistent classification of NBS as "low-risk"	These opportunities collectively support faster, more efficient decision-making in the marine licensing process, helping sustainable development progress at pace. Introducing licence exemptions, expanding self-service options, and reducing application costs for small-scale NBS projects could shorten timelines and ease administrative burden. Adapting assessment requirements and embracing greater flexibility in decision-making, particularly for novel or low-risk NBS, could also streamline case handling. Clearer guidance for applicants and strengthened internal training for MMO staff could further improve
	O2: Reduce application costs for marine licence applications for NBS	• Legislative change required via Defra and Parliament • Risks to fee recovery model and financial sustainability • Higher-band projects in MPAs may still be disadvantaged	
	O3: Include small scale NBS in self-service activities for self-service marine licensing	• Strict eligibility criteria limit what qualifies as self-service	

Outcome	Opportunity (O)	Limitations	Details
		• Broad scope of NBS makes consistent classification difficult • Risk of reduced oversight for potentially impactful projects	the quality and consistency of submissions and decisions, reducing delays and enabling quicker progression of sustainable marine activities.
	O4: Adapt assessment requirements for NBS projects	• Dependent on agreement from SNCBs (e.g. Natural England) • May conflict with legal obligations under Habitats Regulations • Not applicable to all types of NBS projects	
	O7: Facilitate the greater acceptance of uncertainty / risks in decision-making for NBS (e.g., adaptive management, trial projects, particularly with regard to novel NBS	• Legal requirement for certainty limits regulatory flexibility • Potential conflicts with HRA standards and case law • Adaptive management not always feasible under current licence terms	
	O10: Provide guidance to applicants to improve marine licence applications	• Needs a clear policy mandate prioritising NBS • Must avoid perceptions of prescriptiveness or bias • Risk of guidance being ignored without internal consistency	

Outcome	Opportunity (O)	Limitations	Details
	O12: Strengthen internal guidance and training on NBS for MMO staff	• Must integrate systematically into existing MMO training • Relies on consistent delivery and updates over time • Requires staff capacity and time to engage with training	

5. Evaluation plan

5.1 Overview

This section presents the evaluation plan developed as part of Phase 2. The study team drew on the findings from scoping in Phase 1, including the systems map discussed in Section 3.3, to set out a comprehensive evaluation plan for NBS and the marine licensing service. The plan has been developed against Goals 1 and 2 of the MMO' strategy (MMO, 2023) to ensure that the findings of any future evaluation are directly relevant to the MMO's desired outcomes and goals. Implementation of the plan would also enable more in-depth investigation of the opportunities and associated limitations/barriers from the gap analysis reported in Section 4.

The plan includes the evaluation questions, sub-questions, indicators and data sources, and a data collection plan. The data collection plan brings together the data sources identified in the evaluation matrix and also incorporates the engagement plan.

5.2 Evaluation questions

5.2.1 Evaluation questions for Goal 1

Goal 1 for this study is: ecosystem recovery through NBS in the MMO's marine licensing system[15]. Note that the wider Goal 1 from MMO2030 is: Work with partners to restore or recover functioning marine ecosystems, introducing increased levels of protection and improvement to our marine environment).

The evaluation questions for this goal are as follows:

1. How is the marine licensing service currently working in terms of enabling NBS, and what are the barriers to improving the service so it better enables NBS?
    a. What activities are enabled by the current licensing service?
    b. What activities are impeded by the current licensing service?
    c. How does partnership working under the existing licensing service protect and improve the marine environment?
    d. To what extent do licence variations, conditions or post-consent monitoring affect consideration of NBS?

2. To what extent, and how, does the marine licensing service need to change to better enable inclusion of NBS?
    a. What are the existing opportunities where NBS could be enabled?
    b. What does a licensing service that better enables NBS look like?
    c. How long would it take to make these changes and what would the process involve (e.g. co-design, testing)?

[15] Note that this is the wording for a simplified version of Goal 1 from the study specifications. As stated in the background, Goal 1 in the MMO's strategic plan, MMO2030 (MMO, 2023), has a wider scope: "Work with partners to restore or recover functioning marine ecosystems, introducing increased levels of protection and improvement to our marine environment".

d. What guidance and training would be needed for MMO staff, including case officers, and potential licence applicants?
e. To what extent could these changes affect adherence to procedure, process consistency and so certainty and fairness for applicants around licensing outcomes?
f. To what extent could the dynamic and evolving nature of NBS be built into the marine licensing service?
g. To what extent could these changes affect partnership working, especially in relation to protection and improvement of the marine environment?

3. To what extent could these changes be undertaken within the current legislative regime?
   a. What changes could the MMO make within the current legislative regime?
   b. Would legislative change help enable inclusion of NBS within the marine licensing service?
   c. If so, what needs to change, why, when and how?

4. How would inclusion of NBS in the marine licensing service affect costs, complexity of applications or the time taken to apply for or consent a licence?
   a. Could this affect whether applications are made for a licence, overall or for specific types of project, licence variations, licence conditions, or post-consent monitoring, or for specific ecosystems?
   b. Who would be affected, how and how much?

5.2.2 Evaluation questions for Goal 2

Goal 2 is: manage a responsive and widely owned English marine planning framework that prescribes the strategic priorities for using and managing our seas, integrating terrestrial planning policies across the range of marine sectors.

The evaluation questions for this goal are as follows:

5. How is the marine planning framework performing in terms of enabling NBS, and what are the barriers to improving the framework so it better enables NBS?
   a. How and where could policies within marine plans promote NBS?
   b. How and when is NBS taken into account?

6. To what extent, and how, does the marine planning framework need to change to enable inclusion of NBS?
   a. What does a marine planning framework that better enables NBS look like?
   b. To what extent could these changes affect partnership working, especially in relation to protection and improvement of the marine environment?

7. To what extent can these changes be undertaken within the current policy regime?
    a. Would policy change help enable consideration of NBS?
    b. If so, what needs to change, why, when and how?
    c. How would these policy changes affect the marine licensing service?

5.3 Evaluation indicators and data sources

Table 3 and Table 4 set out the evaluation indicators and data sources for each evaluation question (EQ) for Goals 1 and 2. Taken together, the tables form the evaluation matrix.

Note that within the indicators, two ways of integrating NBS activity are considered, namely: 1) the direct implementation of NBS (e.g. marine licensing for restoring a seagrass bed); and 2) NBS activities that are promoted through the licensing of marine developments.

Table 3: EQs, sub-questions, indicators and data sources for questions linked to Goal 1. Goal 1 for this study is: Ecosystem recovery through NBS in the MMO's marine licensing system[16]. The wider Goal 1 from MMO2030 is: Work with partners to restore or recover functioning marine ecosystems, introducing increased levels of protection and improvement to our marine environment.

EQ	Sub-question	Indicator	Data source
EQ1. How is the marine licensing service currently working in terms of enabling NBS, and what are the barriers to improving the service so it better enables NBS?	a. What activities are enabled by the current licensing service?	• Annual number of successful licence applications for NBS activities (and share in total number of successful applications) • Annual number of successful licences for other activities with (add-on) NBS component (and share in total number of successful applications) • Scope of NBS activities from successful applications by type • Information related to NBS available in guidance • Feedback from applicants, MMO case officers and wider stakeholders on factors that enable NBS in licensing	• Marine Licence Public Register • Licence application data • Application guidance • Engagement with MMO, applicants and wider stakeholders (e.g. environmental NGOs)
	b. What activities are impeded by the current licensing service?	• Annual number of unsuccessful licence applications for NBS activities (and share in total	• Marine Licence Public Register • Licence application data • Engagement with MMO, applicants

[16] Note that this is the wording for a simplified version of Goal 1 from the study specifications. As stated in the background, Goal 1 in the MMO's strategic plan, MMO2030 (MMO, 2023), has a wider scope: "Work with partners to restore or recover functioning marine ecosystems, introducing increased levels of protection and improvement to our marine environment".

EQ	Sub-question	Indicator	Data source
		number of unsuccessful applications) • Annual number of unsuccessful licences for other activities with (add-on) NBS component (and share in total number of unsuccessful applications) • Scope of NBS activities from unsuccessful applications by type • Feedback from unsuccessful applicants and MMO case officers on factors that hinder NBS in licensing	
	c. How does partnership working under the existing licensing service protect and improve the marine environment?	• Feedback from applicants on their awareness of potential for NBS through engagement with MMO • Feedback from NBS applicants on availability and provision of guidance and support from MMO and external partners • Feedback from MMO on availability and provision of support to MMO and applicants by external partners • Availability and provision of guidance by MMO and technical advisors within licensing documentation	• Licence application data • Application guidance • Engagement with MMO, applicants, technical advisors (e.g. Natural England)

EQ	Sub-question	Indicator	Data source
	d. To what extent do licence variations, conditions or post-consent monitoring affect consideration of NBS?	• Number of applications that change approach to NBS at post-determination stage • Scope of any changes • Feedback from MMO and applicants on way in which variations, conditions or post-consent monitoring influence or are affected by NBS activities	• Licence application data • Data on licences/activities taking place at post determination stage • Engagement with MMO, applicants
EQ2. To what extent, and how, does the marine licensing service need to change to better enable inclusion of NBS?	a. What are the existing opportunities where NBS could be enabled?	• Opportunities for add-on NBS (i.e. promotion of NBS through licensing of marine developments) identified from analysis of successful applications with and without NBS • Feedback from MMO and applicants on opportunities for provision of information and guidance at different stages of application process • Feedback from wider stakeholders on NBS opportunities in licensing	• Licence application data • Engagement with MMO, applicants and wider stakeholders (e.g. environmental NGOs)

EQ	Sub-question	Indicator	Data source
	b. What does a licensing service that better enables NBS look like?	• Feedback from MMO and applicants on licensing service characteristics that enable/hinder NBS • Service characteristics that enable/hinder NBS as identified by other reports and documents (dimensions could include information/ guidance, capacity/skills, application process)	• Engagement with MMO (including those working on the MPLP), applicants • Existing guidance and documentation on licensing service and NBS (e.g. ReMeMaRe MLA Review report)
	c. How long would it take to make these changes and what would the process involve (e.g. co-design, testing)?	• Feedback from MMO on way in which changes could be incorporated and time/resources needed for this • Feedback on implementation approach from other stakeholders	• Engagement with MMO (including e.g. those reviewing the MCMS) • Engagement with applicants, technical advisors, wider stakeholders (dependent on changes suggested for EQ2b)
	d. What guidance and training would be needed for MMO staff, including case officers, and potential licence applicants?	• Feedback from MMO staff and applicants on gaps in knowledge and other support needed (e.g. capacity, access to materials) • Feedback from applicants on additional guidance or support needed to deal with changes	• Application guidance • Engagement with MMO (including case officers) and applicants

EQ	Sub-question	Indicator	Data source
	e. To what extent could these changes affect adherence to procedure, process consistency and so certainty and fairness for applicants around licensing outcomes?	• Extent to which current procedures and processes would need changing based on mapping of proposed changes against current licensing service • Feedback from MMO on how proposed changes could affect procedure and process consistency • Feedback from applicants on perceived effect of proposed changes on certainty and fairness	• Application guidance • Systems map of licensing service • Engagement with MMO and applicants
	f. To what extent could the dynamic and evolving nature of NBS be built into the marine licensing service?	• Changes (evolution) in NBS identified in application data and published evidence • Feedback from MMO and applicants on level of flexibility in current service and how evolving needs could be accommodated	• Published evidence on evolving nature of NBS • Application data on direct and add-on NBS (i.e. promotion of NBS through licensing of marine developments) • Engagement with MMO and applicants
	g. To what extent could these changes affect partnership working, especially in relation to protection and improvement of the marine environment?	• Feedback from MMO, applicants and technical advisors on how proposed changes could affect partnership working	• Engagement with MMO, applicants and technical advisors
EQ3. To what extent could these changes be undertaken	a. What changes could the MMO make within the current legislative regime?	• Feedback from MMO on extent to which licensing service could evolve under current legislative regime	• Engagement with MMO • Information from the MPLP project

EQ	Sub-question	Indicator	Data source
within the current legislative regime?	b. Would legislative change help enable inclusion of NBS within the marine licensing service?	• Barriers for implementation identified from mapping of proposed changes to current legal framework • Feedback from MMO and technical advisors on importance of proposed alterations to licensing service that would need legislative change to implement	• Documentation relating to current legal framework • Other ongoing initiatives on the licensing service e.g. MPLP • Engagement with MMO and technical advisors
	c. If so, what needs to change, why, when and how?	• Potential changes to enable implementation identified from mapping of proposed changes to current legal framework • Feedback from MMO and Defra on timing and process needs	• Documentation relating to current legal framework • Engagement with MMO and Defra
EQ4. How would inclusion of NBS in the marine licensing service affect costs, complexity of applications or the time taken to apply for or consent a licence?	a. Could this affect whether applications are made for a licence, overall or for specific types of project, licence variations, licence conditions, post-consent monitoring, or specific ecosystems?	• Existing costs for licence applications, split by type of licence (i.e. with/without NBS) • Existing time taken for licence applications to be processed by type of licence (i.e. with/without NBS) • Existing differences in complexity for applications with/without NBS (with greater complexity referring to number of documents submitted, number of requests for further information/ clarification, etc.)	• Licence application data/data on overall service (e.g. processing times) • Existing reports and projects on NBS and licensing (e.g. ReMeMaRe MLA Review report) • Engagement with applicants

EQ	Sub-question	Indicator	Data source
		• MMO time and resource needs for dealing with licence variations and post-consent monitoring for projects including/excluding NBS • Feedback from applicants on time and resource needs to deal with post-determination activities linked to NBS	
	b. Who would be affected, how and how much?	• Feedback from MMO, technical advisors and applicants on extent to which the inclusion of NBS in the marine licensing service would likely affect a) cost; b) time; c) complexity of reviewing/making an application • Types of application likely to be impacted (obtained from mapping proposed changes to existing breakdown of licences by type of activity)	• Licence application data • Engagement with MMO, technical advisors and applicants

Table 4: EQs, sub-questions, indicators and data sources for questions linked to Goal 2. Goal 2 from MMO2030 is: Manage a responsive and widely owned English marine planning framework that prescribes the strategic priorities for using and managing our seas, integrating terrestrial planning policies across the range of marine sectors

EQ	Sub-question	Indicator	Data source
EQ5. How is the marine planning framework performing in terms of enabling NBS, and what are the barriers to improving the framework so it better enables NBS?	a. How and where could policies within marine plans promote NBS?	• Opportunities for NBS within existing framework (based on review and analysis of documentation including marine plans) • Feedback from MMO on opportunities to promote NBS within policies in marine plans • Feedback from local and wider stakeholders on opportunities to promote NBS within policies in marine plans	• Documentation and guidance relevant to marine planning (e.g. UK Marine Policy Statement, National Planning Policy Framework, Localism Act) • Existing marine plans • Engagement with MMO (marine planners) and local stakeholders (local authorities, coastal partnerships), wider stakeholders (e.g. environmental NGOs)
	b. How and when is NBS taken into account?	• Extent to which there is explicit provision for NBS in the existing marine planning framework including current marine plans	• Documentation and guidance relevant to marine planning • Existing marine plans
EQ6. To what extent, and how, does the marine planning framework need to change to enable inclusion of NBS?	a. What does a marine planning framework that better enables NBS look like?	• Barriers and enablers to implementation of NBS within the marine planning framework identified from documentation including existing marine plans • Feedback from MMO and local and wider stakeholders involved with marine planning on characteristics of the	• Documentation and guidance relevant to marine planning • Existing marine plans • Engagement with MMO (marine planners), applicants, local stakeholders (e.g. local authorities) and wider stakeholders (e.g. environmental NGOs)

EQ	Sub-question	Indicator	Data source
		framework that could support NBS	
	b. To what extent could these changes affect partnership working, especially in relation to protection and improvement of the marine environment?	• Feedback from stakeholders on extent to which changes to marine planning to enable inclusion of NBS could affect partnership working	• Engagement with stakeholders (MMO, local authority planners, technical advisors)
EQ7. To what extent can these changes be undertaken within the current policy regime?	a. Would policy change help enable consideration of NBS?	• Feedback from MMO and Defra on any changes already underway • Feedback from MMO, Defra and local stakeholders on extent to which further policy change could enable consideration of NBS	• Engagement with MMO (marine planners), Defra (e.g. those working on Marine Net Gain) and local stakeholders involved with marine planning
	b. If so, what needs to change, why, when and how?	• Suggestions for policy change (if any) identified from documentation /existing reports including current marine plans • Feedback from MMO and local stakeholders on potential policy changes and implementation needs (when and how)	• Documentation and guidance relevant to marine planning policy • Existing marine plans • Engagement with MMO (marine planners), Defra and local stakeholders involved with marine planning
	c. How would these policy changes affect the marine licensing service?	• Feedback from MMO on extent to which any policy changes could impact the licensing service	• Engagement with MMO (marine planners and those involved with the MPLP)

5.4 Data collection plan

5.3.1 Data collection and management

Table 5 sets out the data collection plan, bringing together the data sources from the evaluation matrix and identifying the collection approach and timing. Since this is currently an evaluation plan, the timing element identifies when within the evaluation the data source is likely to be needed (i.e. early on for planning/development or during the evaluation itself). Actual timings will need to be identified should the evaluation be progressed, once the scope has been confirmed.

It is noted that some of the indicators require data that could be time consuming/labour intensive to collate if drawn from existing datasets (e.g. of previous licence applications). To mitigate the time needed to obtain this information, it is suggested that such data is collected from licence applications that are made over a set time period whilst any future evaluation is running. This should avoid the need for old/existing datasets to be mined for new information that has not already been extracted. Indicators for which data would need to be collected in this manner include, for example, number of applications that change approach to NBS at post-determination stage and scope of NBS activities from successful and unsuccessful applications by type.

Table 5: Data collection plan.

Data source	Collection approach	Timing
MMO Licence Public Register	Published – can be obtained/reviewed directly by evaluator	Start of evaluation (to inform sampling)
Licence application data (to enable analysis of successful/unsuccessful applications by type and whether NBS has been included directly (e.g. licence for restoring a seagrass bed) or indirectly (e.g. addition of NBS to a project for another marine development))	To be provided to evaluator by MMO licensing team	Start of evaluation (existing application dataset to inform sampling for engagement of applicants). During evaluation (data on inclusion of NBS within new applications received)
Marine licence application guidance	Published – can be obtained/reviewed directly by evaluator	During evaluation
Data on licences/activities taking place at post determination stage	To be provided to evaluator by MMO licensing team	During evaluation
Data on licensing service processing times	To be provided to evaluator by MMO licensing team	During evaluation

Data source	Collection approach	Timing
Existing guidance and documentation on licensing service and NBS (e.g. ReMeMaRe MLA Review report)	Any published guidance to be obtained directly by the evaluator. Information on any internal/ongoing/ unpublished initiatives to be provided by the MMO	During evaluation
Systems map of licensing service	Output from this study (see Section 3)	Already available
Published evidence on evolving nature of NBS	Evaluator to carry out desk-based research	During evaluation
Ongoing initiatives linked to the marine licensing service (e.g. MPLP project)	Information to be provided by MMO	Start of evaluation (to ensure evaluation scope can be modified if need be) and during evaluation as needed
Documentation relating to current legal framework	Evaluator to carry out desk-based research	During evaluation
Documentation and guidance relevant to marine planning and marine planning policy	Evaluator to carry out desk-based research	During evaluation
Existing marine plans	Evaluator to carry out desk-based research	During evaluation
Engagement (primary) data from stakeholders	Further details provided in Section 5.3.2	Throughout the evaluation (noting that some activities would need to be undertaken by the MMO early on in the evaluation to enable data collection e.g. adding survey links to end determination letters)

5.3.2 Engagement plan (including sampling strategy)

Overview

The key stakeholders for an evaluation of integrating NBS options into MMO's marine licensing service include:

- Policy and management stakeholders (Defra policy teams, MMO marine licensing management colleagues, Marine Planning team);
- Operational stakeholders (MMO licensing case team/officers, IT system (MCMS) development colleagues, those working on initiatives such as MPLP, ReMeMaRe, etc.);
- Marine licence applicants, including consultants who support them;
- Technical and primary advisors to the MMO, who play a role in review of applications and consideration of impacts, and in the post-determination stage. This includes, for example, Natural England and Cefas;
- Local stakeholders (local authorities and coastal partnerships); and

- Wider stakeholders, including environmental NGOs and conservation organisations such as The Royal Society for the Protection of Birds (RSPB) or the Marine Conservation Society, who play a role during the post-determination stage and may also respond to consultations.

Table 6 identifies the links between stakeholder types and the evaluation questions. The following text then discusses the ways in which the different stakeholder types could be engaged. Note that any evaluation would need to obtain an update on ongoing initiatives such as the MPLP prior to starting. This might affect the extent and type of engagement needed, especially that with internal stakeholders such as case officers and the IT development team. It would be important to avoid any repetition or overlap between the evaluation and other initiatives.

Table 6: Links between types of stakeholders and the evaluation questions

EQ	Policy/ management	Operations	Applicants	Advisors to the MMO	Local stakeholders	Wider stakeholders
EQ1. How is the marine licensing service currently working in terms of enabling NBS, and what are the barriers to improving the service so it better enables NBS?	X	X	X	X		X
EQ2. To what extent, and how, does the marine licensing service need to change to better enable inclusion of NBS?	X	X	X	X		X
EQ3. To what extent could these changes be undertaken within the current legislative regime?	X	X		X		
EQ4. How would inclusion of NBS in the marine licensing service affect costs, complexity of applications or the time taken to apply for or consent a licence?	X	X	X	X		
EQ5. How is the marine planning framework performing in terms of enabling NBS, and what are the barriers to improving the framework so it better enables NBS?	X			X	X	X

EQ	Policy/ management	Operations	Applicants	Advisors to the MMO	Local stakeholders	Wider stakeholders
EQ6. To what extent, and how, does the marine planning framework need to change to enable inclusion of NBS?	X		X	X	X	X
EQ7. To what extent can these changes be undertaken within the current policy regime?	X					

Interviews

There are three groups of stakeholders where interviews are proposed as the main data collection approach: policy and management stakeholders, local stakeholders (including local authorities and coastal partnerships) and wider stakeholders. It is anticipated that semi-structured interviews would be used, with a tailored set of questions developed for each stakeholder group. This would provide the interviewer with flexibility to probe on points raised by interviewees. The purpose of the semi-structured interviews would vary by stakeholder group:

- For management and policy stakeholders, the focus would be on the function of the marine licence service, potential changes to the service, the extent to which the marine planning framework enables NBS and any changes that could be made to further enhance this.

- For local authorities and coastal partnerships, the aim would be to explore partnership working and consider NBS in the context of the marine planning framework.

- For wider stakeholders, the interviews would focus on their perspectives on how the licensing system and marine planning framework currently enable NBS and what changes could be made to enhance inclusion of NBS.

Surveys

The groups targeted for written communication are marine licence applicants (and consultants who support them), MMO licensing case officers, and the MMO's IT development team.

An online survey would be disseminated to the applicants via email to gather information on how they have included NBS in their applications, barriers faced, and any complexity, costs, or time involved in the process. Applicant views would also be sought on the extent to which further including NBS in the licensing could affect complexity, costs or time. Where needed, survey logic would be used to ensure that applicants would only be presented with questions relevant to their situation.
Use of a survey would enable applicants to contribute to the study at a time convenient to them. It would also allow the evaluation to collect the views of a large number of stakeholders across a range of questions. However, care would need to be taken to minimise stakeholder fatigue given the existence of other surveys including the MPLP survey and the regular marine plan stakeholder surveys. All survey questions would need to be reviewed against the existing surveys to minimise duplication.

A second survey would be targeted at the licensing case team to gather perspectives on the practical challenges of including NBS in applications, as well as factors that enable inclusion. Progress of the MPLP will need to be considered in advance of developing the survey to ensure it builds on work already done and does not duplicate any questions or areas to ensure efficient use of time.

The IT development team would be engaged through written communication to collect data on the costs and ability of the IT platform to meet any suggested

changes. As for the survey of the licensing case team, ongoing work as part of the MPLP would need to be considered.

Follow-up discussions with survey respondents would likely be valuable to obtain further information on particular points. It is proposed that the surveys include options for respondents to provide their contact details and indicate if they would be happy to have a follow-up call to discuss elements of their response in more detail.

Workshop

A workshop is suggested for engaging with the technical and primary advisors to the MMO. Workshops enable discussion of ideas and feedback between attendees, which would be particularly useful when considering changes in the approach to licensing. The workshop would enable insights to be gained from those responsible for advising on the impacts of applications and involvement in the post-determination stage. The workshop would aim to explore how the current licensing service could be adapted to better incorporate NBS and understand any technical and legislative barriers, as well as the potential for changes to the marine planning framework. It could be held online to facilitate attendance by stakeholders from different organisations, who are likely to be based in different geographical locations.

Sampling strategy

The sampling strategy needs to vary by stakeholder type. Numbers to be engaged would also be influenced by the time and resources available to the evaluation:

- For **management and policy stakeholders**, it is anticipated that a list of contacts could be developed with input from the MMO. The evaluator could work with the MMO to prioritise contacts to invite to interview, ensuring representation from different teams and areas (e.g. Defra policy, marine planning).

- For **local authorities and coastal partnerships**, it is proposed that purposive sampling would be undertaken using the applications dataset, with local authorities linked to marine licence applications identified. Coastal partnerships in relevant areas would also be identified from internet research. As for management and policy stakeholders, the list could be prioritised with an initial sample chosen to reflect a range of geographical locations. Contacts on the priority list could be invited for interview, with additional contacts invited subject to response rates.

- For **wider stakeholders**, it is suggested that purposive sampling is conducted to identify individuals involved in marine conservation, environmental protection, or coastal policy advocacy. This could include individuals from organisations such as the RSPB or Marine Conservation Society. Additionally, online research could be conducted to identify organisations that have publicly appealed or monitored marine licence projects, as these groups are likely to have relevant experience and perspectives on the inclusion of NBS in marine licensing. Further contacts might need to be identified dependent on initial response rates to requests for interview.

- For **marine licence applicants**, it is proposed that sampling would not initially be required due to the use of a survey. The survey link could be provided to all applicants (successful and unsuccessful) registered on the MMO's system over a certain timeframe (to be decided at the inception of the evaluation, dependent on scope and resources available). Sampling for any follow-up interviews would be by self-selection as identified in survey responses. This could potentially open the interviews up to bias, with those wanting to make a point possibly being more likely to agree to an interview in the survey, but could also provide a pool of more willing interviewees than if individuals were randomly selected by the evaluators.

- For **operational stakeholders**, it is expected that relevant contacts (e.g. those involved in the MPLP) would be provided by the MMO. The survey for the licensing case team could be distributed internally at the MMO to all those working in this area.

- For **technical and primary advisors** to the MMO, it is anticipated that the MMO could identify up to 15 individuals who routinely provide input and advice to licence applications or are involved with marine planning. Individuals' roles could be matched to the topics covered by the evaluation questions to ensure relevant areas are covered. The aim would be to obtain input from 8-12 advisors within a workshop (acknowledging that some may be too busy/unavailable to attend within the desired timeframe).

6. Conclusions and next steps

6.1 Conclusions

6.1.1 Overall conclusions

This study aimed to consider the evaluability of the marine licensing service in relation to whether processes could enable and scale up NBS. In conclusion, it has been determined that there are potential opportunities for the licensing service to enable and scale up NBS. Of the 12 opportunities identified:

- 6 are within the area of regulatory regime and application process;
- 3 are linked to guidance and training;
- 2 relate to generating and using evidence; and
- 1 is within the area of policy implementation.

The opportunities are focused on aspects that the MMO can change or influence, rather than aspects controlled by other organisations. Example opportunities include introducing marine licence exemptions for the delivery of small scale NBS and strengthening internal guidance and training on NBS. Mapping of the opportunities against the MMO's Goals 1 and 2 has illustrated that each of the desired outcomes has at least one opportunity allocated to it. Progressing these opportunities could aid the MMO in working towards the outcomes and goals in MMO2030.

However, there are limitations and barriers that require further investigation before the identified opportunities can be progressed. Considering the opportunity to strengthen internal guidance as an example, any guidance would need to be integrated systematically into existing MMO training, and there would also be a requirement for sufficient staff capacity and time to engage with training. Other identified opportunities have similar limitations that need to be worked through. Implementation of the evaluation plan developed in Phase 2 could help elicit further information that could support the uptake of the opportunities. It would also be expected to identify where changes might be needed to policies and potentially legislation to further enable NBS to be applied in the marine environment. These findings would help build on existing work that was highlighted during this study, such as that undertaken by the ReMeMaRe MLA Review project. They could also feed into ongoing initiatives including the MPLP, thereby benefiting the marine licensing service overall.

6.1.2 Findings against the objectives

The following text sets out what has been achieved against each of the objectives.

Objective 1, produce a systems map and review of current and existing literature on MMO marine licensing, was met through work in Phase 1. The findings from the literature review are reported earlier in Section 3.2. A key point to highlight is that work has recently been carried out on the licensing system and NBS. For example, the ReMeMaRe MLA Review project considered licence applications (MLAs) for restoration and restoration-linked compensation projects (MMO, 2024b). There is

also ongoing work being undertaken by the MMO to transform the licensing service so that it can help support evolving government ambitions and marine development such as offshore wind and restoration projects.

Evidence from the literature review and interviews informed the development of the systems map, which shows the components of the licensing service and their relationships. Section 3.3 presents the systems map, alongside a discussion on how marine licensing works in practice. The systems map provides the extent of the marine licensing service to be considered by any future evaluation.

Objective 2, conduct a gap analysis on where NBS can be applied within the system, was also met through Phase 1. Section 4 presents the findings from the gap analysis, which identified 12 opportunities. These opportunities have been matched to the desired outcomes for MMO Goals 1 and 2 from the strategy, MMO2030 (MMO, 2023). Taking up these opportunities linked to enabling NBS in marine licensing could assist with the achievement of the desired outcomes in the strategy, however, as noted above, there are limitations and barriers that need to be worked through first.

Objective 3 was met through the development of an evaluation plan based on a set of evaluation questions that were aligned with Goals 1 and 2 from MMO2030 (see Section 5.2). For Goal 1, these questions cover the existing licensing service, changes needed to better enable inclusion of NBS, the extent to which changes could occur in the current legislative regime, and the implications of any such changes for the time, costs and complexity of licensing. For Goal 2, the focus was on the marine planning framework and extent to which this enables NBS currently, how it might need to change to better enable NBS, and the extent to which changes could occur within the current policy regime. The evaluation questions are supported by sub-questions, with indicators and data sources presented for the sub-questions in an evaluation matrix (see Section 5.3). The evaluation plan also includes a stakeholder engagement plan. This is presented in Section 5.3.2 and identifies seven different stakeholder types including policy and management stakeholders; operational stakeholders; marine licence applicants; technical and primary advisors to the MMO; local stakeholders (e.g. local authorities); and wider stakeholders (such as conservation organisations). The engagement plan also identifies which evaluation questions are expected to be relevant to each stakeholder type, as well as the proposed engagement approaches, which include interviews, surveys and a workshop. The proposals for engagement form part of the wider data collection plan, provided in Section 5.4 and developed to meet Objective 4. This plan also includes a sampling strategy for stakeholder engagement, however, it should be noted that numbers to be engaged in any future evaluation will be influenced by the time and resources available to the evaluation.

Objective 5, disseminate findings to the relevant teams, is taking place following the production of this report.

6.2 Next steps

Should there be the desire to progress a full evaluation of NBS and the marine licensing service through implementation of the plan in Section 5, consideration will

need to be given to a range of factors as provided in the Magenta Book (HM Treasury, 2020). These include, for example, financial resources available, management of the evaluation, and the involvement of stakeholders who work or interact with the marine licensing service. These factors will affect key aspects such as the duration of the evaluation (and hence the extent of data collection and analysis) as well as the number of stakeholders who can be engaged within the time and resources allocated.

If an evaluation is commissioned, it is suggested that it should begin with a stocktake of complete and ongoing research projects linked to NBS. This would ensure existing initiatives such as the MPLP and ReMeMaRe MLA Review project can be built upon and any repetition avoided. It would also allow continuous learning, with the evaluation expected to add to the evidence base on NBS and marine licensing. Furthermore, it would likely aid engagement, through enabling individuals who are asked to participate to clearly see how the evaluation fits with existing initiatives and what benefits it might bring to them and their interactions with the licensing service.

There would also need to be discussions on data requirements. At the outset of the evaluation, a clear description of data requirements would need to be drawn up, based on the data collection plan in Section 5.4. These requirements would need to be discussed with the MMO licensing team to ensure that any data requests to them are feasible and realistic given the timetable for the evaluation. Where data are not currently available, a time period over which data should be collected would also need to be set. This would enable the MMO team to collate relevant data (e.g. on applications involving NBS) as licence applications are made, rather than going back through old applications and databases

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Annex 1 Interview questions

Overview

An initial set of interview questions was developed for the first interview. These were revised and tailored for subsequent interviews to reflect interviewees' roles and the need to cover different parts of the marine licensing service. This annex presents the four sets of interview questions.

Interview 1 questions

1. What is the main purpose of the licensing system and how do you think it deals with Nature Based Solutions (NBS[17]) currently?

2. Can you provide a high-level overview of the marine licensing system?

Focusing on some specific areas of the licensing system:

a) When someone needs a licence, what process do they go through? What information do they have to provide? (does this vary according to the type of activity?)

b) What criteria are used to assess applications? Are there any factors that increase or decrease the likelihood of a licence being given? e.g. are certain outcomes given more weight in the decision-making process?

c) Is there the opportunity to adjust applications in line with feedback provided by the MMO?

d) Are licences considered on an individual basis or is there an assessment of all licences for a certain geographic area, or for a particular activity type?

(*Band 1 (Self-service) licences do not require specific case officer consideration. It is important to consider in this project how different activities are licensed in the system, because this may offer different opportunities for the integration of NBS.)*

3. Are there any key issues that hinder the existing licensing system when it comes to NBS or to put it differently - is the current licensing system appropriate to achieve Good Environmental Status (GES) of the seas under MMO jurisdiction? If not, then why?

4. Do you think that excluding activities that qualify for exemptions from the need for a marine licence, and activities the MMO classes as low risk (Self-service marine licensing), from the standard marine licensing system might lead to missing opportunities to apply NBS for those activities?

[17] NBS are defined variously as "solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience" (European Commission) and solutions that "address societal challenges through actions to protect, sustainably manage, and restore natural and modified ecosystems, benefiting people and nature at the same time" (IUCN).

5. How often are marine licences legally challenged through judicial review? What are the main issues that tend to lead to judicial reviews and how often are those issues related to protection of marine environment?

6. We understand that the MaCAA (Marine and Coastal Access Act 2009) authorises the MMO to vary an existing marine licence. How does the application process for variations of existing marine licence work? Does the holder of the licence have to submit a new application for the new activity or amend their previous, successful application?

7. How do the MMO's IT system supporting marine licensing work? What are its main features and what issues, if any, exist with it?

Interview 2 questions

1. What is the main purpose of the licensing system and how do you think it deals with Nature Based Solutions (NBS) currently?

2. Could you provide a high-level overview of the marine licensing system?

Focusing on some specific areas of the licensing system:

a) When someone needs a licence, what process do they go through? What information do they have to provide? (does this vary according to the type of activity?)

b) What criteria are used to assess applications? Are there any factors that increase or decrease the likelihood of a licence being given? e.g. are certain outcomes given more weight in the decision-making process?

c) Is there the opportunity to adjust applications in line with feedback provided by the MMO?

d) Are licences considered on an individual basis or is there an assessment of all licences for a certain geographic area, or for a particular activity type?

3. Are there any key issues that hinder the existing licensing system when it comes to NBS? Or to put it differently - is the current licensing system supporting the achievement of Good Environmental Status (GES) of the seas under MMO jurisdiction? If not, why not?

4. Do you think that excluding activities that qualify for exemptions from the need for a marine licence, and activities the MMO classes as low risk (Self-service marine licensing), from the standard marine licensing system might lead to missing opportunities to apply NBS for those activities?

5. How often are marine licences legally challenged through judicial review? What are the main issues that tend to lead to judicial reviews and how often are those issues related to protection of marine environment?

6. We understand that the MaCAA (Marine and Coastal Access Act 2009) authorises the MMO to vary an existing marine licence. How does the application process for variations of existing marine licence work? Does the holder of the licence have to submit a new application for the new activity or amend their previous, successful application?

7. What are your views on the potential integration of NBS requirements as part of the marine licensing system? This could involve ensuring that licence applications for specific activities should consider NBS in some way. How would you see this working and what would be the key challenges in this respect?

8. How does the MMO's IT system supporting marine licensing work? What are its main features and what issues, if any, exist with it?

Interview 3 questions

1. What is the main purpose of the licensing system and how do you think it deals with Nature Based Solutions (NBS) currently?

2. Could you provide a high-level overview of the marine licensing system? Focusing on user experience and some specific areas of the licensing system, when someone needs a licence, what process do they go through? What information do they have to provide? (does this vary according to the type of activity?)

3. Are there any key issues that hinder the existing licensing system when it comes to NBS? Or to put it differently - is the current licensing system supporting the achievement of Good Environmental Status (GES) of the seas under MMO jurisdiction? If not, why not?

4. Do you think that excluding activities that qualify for exemptions from the need for a marine licence, and activities the MMO classes as low risk (Self-service marine licensing), from the standard marine licensing system might lead to missing opportunities to apply NBS for those activities?

5. We understand that the MaCAA (Marine and Coastal Access Act 2009) authorises the MMO to vary an existing marine licence. How does the application process for variations of existing marine licence work? Does the holder of the licence have to submit a new application for the new activity or amend their previous, successful application?

6. What are your views on the potential integration of NBS requirements as part of the marine licensing system? This could involve ensuring that licence applications for specific activities should consider NBS in some way. How would you see this working and what would be the key challenges in this respect?

7. Considering the users' side of the marine licensing system, at what part of the system or the application process do you think NBS requirements could be implemented?

8. How does the MMO's IT system supporting marine licensing work? What are its main features and what issues, if any, exist with it? Are there any 'quick wins' that could be implemented to enable users to show how their intended activity might support NBS?

Interview 4 questions

1. What is the main purpose of the licensing system and how do you think it deals with Nature Based Solutions (NBS) currently?

2. Could you provide a high-level overview of the marine licensing system?

3. Are there any key issues that hinder the existing licensing system when it comes to NBS? Or to put it differently - is the current licensing system supporting the achievement of Good Environmental Status (GES) of the seas under MMO jurisdiction? If not, why not?

4. Do you think that excluding activities that qualify for exemptions from the need for a marine licence, and activities the MMO classes as low risk (Self-service marine licensing), from the standard marine licensing system might lead to missing opportunities to apply NBS for those activities?

5. What are your views on the potential integration of NBS requirements as part of the marine licensing system? This could involve ensuring that licence applications for specific activities should consider NBS in some way. How would you see this working and what would be the key challenges in this respect?

6. How does the MMO's IT system supporting marine licensing work? What are its main features and what issues, if any, exist with it?

7. Considering goal 1[18] of the MMO's Strategic Plan, are there any examples where NBS have been put in place through partnership arrangements? If yes who are MMO's partners in this context?

8. What are the key barriers and/or enablers to work with partners to promote or directly support implementation of NBS?

9. Does marine planning help support implementation of NBS? If so, to what extent do marine plans take NBS into account? Are there any examples of NBS being mentioned in marine plans? What are the key barriers and/or enablers of the implementation of NBS as part of marine plans?

[18] Goal 1 - Ecosystem recovery: Work with partners to restore or recover functioning marine ecosystems, introducing increased levels of protection and improvement to our marine environment.

10. Are you aware of some specific marine sectors that have implemented NBS so far? What marine sectors could implement NBS in the future.