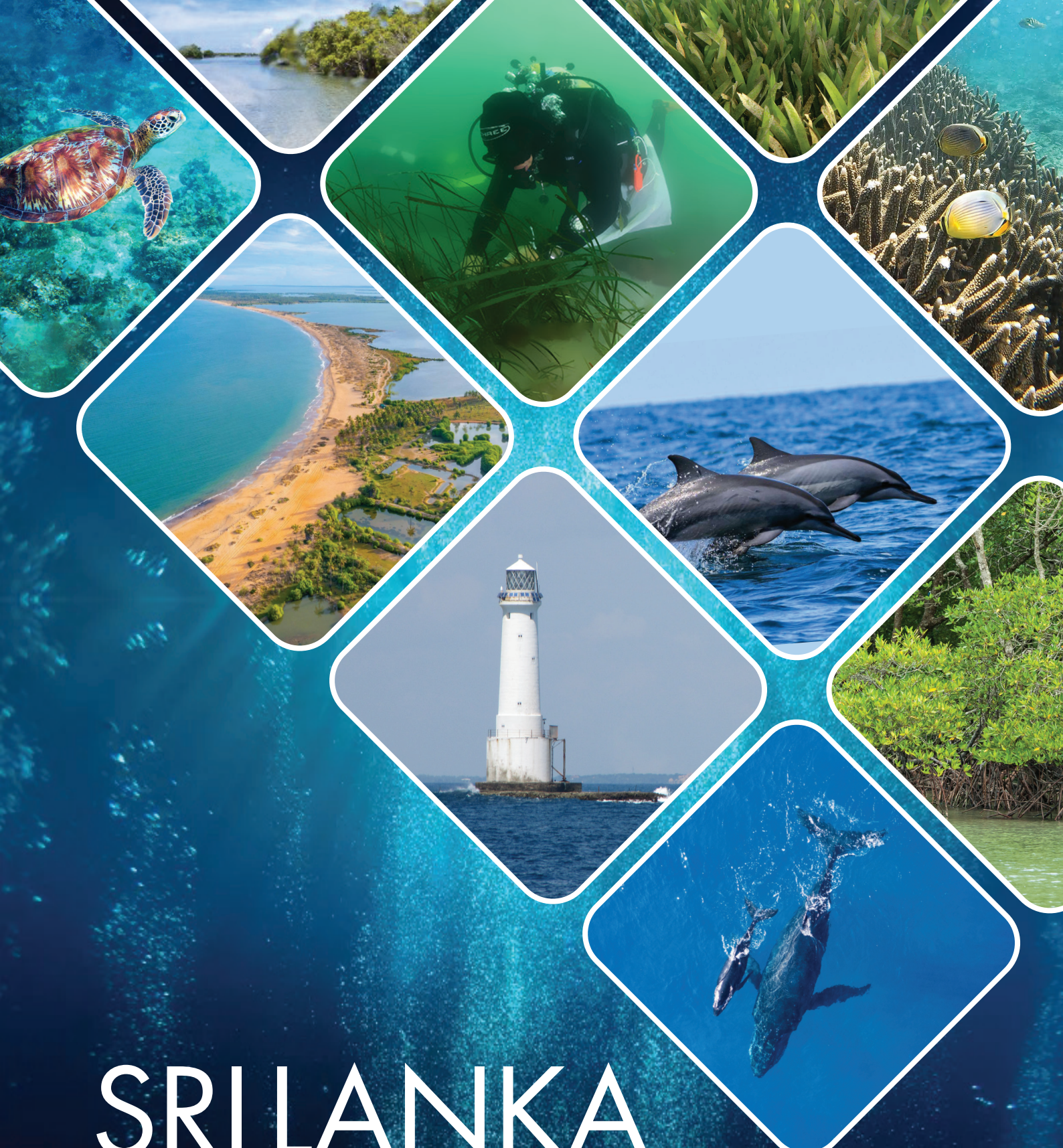

SRI LANKA

MARINE PROTECTED AREAS BEST PRACTICE TOOLKIT

OCEAN COUNTRY PARTNERSHIP PROGRAMME

UK International Development

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January 2025
For further information please contact:
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https://jncc.gov.uk/our-work/ocean-country-partnership-programme/
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CONTENTS

01 ACRONYMS

- CBD — Convention on Biological Diversity
- CC & CRM — Coast Conservation & Coastal Resource Management
- DWC — Department of Wildlife Conservation
- DFAR — Department of Fisheries and Aquatic Resources
- FeAST — Feature, Activity, Sensitivity Tool
- FMA — Fisheries Management Areas
- GESI — Gender, Equality, and Social Inclusion
- HPMAs — Highly Protected Marine Areas
- IUCN — International Union for the Conservation of Nature
- JNCC — Joint Nature Conservation Committee
- MarESA — Marine Evidence-based Sensitivity Assessment
- MCZ — Marine Conservation Zone
- MEPA — Marine Environment Protection Authority
- MEPCA — Management Effectiveness of Protected and Conserved Areas
- METT — Management Effectiveness Tracking Tool
- MPA — Marine Protected Area
- MSP — Marine Spatial Planning
- NARA — National Aquatic Resources Research and Development Agency
- NCPA — Nature Conservation Marine Protected Area
- OCPP — Ocean Country Partnership Programme
- OECMs — Other Area-based Conservation Measures
- PA — Protected Area
- PCA — Protected and Conserved Area
- PAME — Protected Area Management Effectiveness
- RAPPAM — Rapid Assessment and Prioritisation of Protected Area Management
- SAC — Special Areas of Conservation
- SLTDA — Sri Lanka Tourism Development Authority
- SMA — Special Management Areas
- SNCBs — Statutory Nature Conservation Bodies
- SPA — Special Protection Area
- UNEP-WCMC — United Nations Environment Programme World Conservation Monitoring Centre
- WPA — Wildlife Protection Area

02 GLOSSARY

Name of term	Description
Adaptive Management	A flexible approach to MPA management that allows for adjustments based on new information, monitoring data, and changing conditions.
Baseline Assessment	An initial evaluation of MPA condition and resources to establish a reference point for future monitoring and assessment.
Biological Monitoring	The collection of data on marine species, habitats, and ecosystems to assess MPA health and effectiveness.
Capacity Building	Training and development initiatives to enhance the skills and knowledge of MPA managers, staff, and stakeholders.
Compliance	Adherence to MPA regulations and guidelines by users, stakeholders and enforcement agencies.
MPA Designation	The process of establishing MPAs.
Ecological Indicators	Measures used to assess change in marine ecosystems and biodiversity within MPAs over time.
Ecosystem-based Management	A holistic approach to managing areas that considers the interconnectedness of marine ecosystems and human activities.
Ecosystem Services	The benefits people derive from ecosystems. For example, provisioning services such as food and raw materials; regulating services such as prevention of soil erosion and carbon storage or cultural services such as recreation.
Enforcement	Active monitoring, surveillance and implementation of regulations and measures to prevent illegal activity and maintain the integrity of the MPA.
Equity	In the context of protected areas, the Conference of Parties to the Convention on Biological Diversity (COP14) defined equity in three dimensions: Recognition is the acknowledgement of and respect for the rights and the diversity of identities, values, knowledge systems and institutions of rights holders and stakeholders. Procedure refers to inclusiveness of rule- and decision-making. Distribution implies that costs and benefits resulting from the management of protected areas must be equitably shared among different actors.

Gender Equality and Social Inclusion (GESI)	An approach that aims to ensure that all individuals, regardless of their gender, ethnicity, age, disability, or other characteristics, have equal rights, opportunities, and access to resources and services.
Management	The activities and strategies employed to effectively manage MPAs.
Participatory Management	Involvement of local communities, indigenous groups, and stakeholders in decision-making processes and MPA management activities.
Marine Protected Area	Geographical areas of the marine environment established and managed to achieve long-term nature conservation and sustainable use.
Marine Protected Area 'Feature'	Specific ecological elements for which the MPA is designated. For example, a particular species or habitat.
Marine Protected Area 'Values'	MPA values refer to the meanings, significance and benefits people assign to an MPA. MPA values can cover ecological, social, cultural and economic perspectives. The values identified for an MPA must be protected and preserved to maintain the significance of the MPA. The primary purpose of an MPA should be nature conservation, so an MPA should have at least one ecological value, but can then have other values assigned.
Other Effective Area-Based Conservation Measure	A geographically defined area other than a Protected Area, which is governed and managed in ways that achieve positive and sustained long-term outcomes for the in-situ conservation of biodiversity, with associated ecosystem functions and services and where applicable, cultural, spiritual, socio–economic, and other locally relevant values.
Remote Sensing	The use of satellite imagery and other technology to monitor MPA boundaries, habitat changes, and human activities.
Rights holders	Rights holders are actors with legal or customary rights to natural resources and land, in accordance with national legislation.
Stakeholder	Individuals, groups, organisations, or entities with an interest or stake in natural resources including the designation, management and outcomes of MPAs.
Stakeholder Engagement	Process of interacting with people who have an interest in or may be impacted by actions made by MPA managers to receive their input and feedback. It can be used to build relationships, inform decisions and gather information.
Sustainability	The principle of meeting the needs of the present without compromising the ability of future generations to meet their own needs. It involves balancing social, economic, and environmental considerations to ensure that natural resources and ecosystems are preserved and utilized in a way that maintains their integrity and availability over the long term.
Traditional Activities	Activities undertaken by citizens to strengthen and enhance social, spiritual and cultural relationships and values.
Zoning	Division of an MPA into different management zones, each with specific regulations and objectives.

03 INTRODUCTION AND PURPOSE

Marine Protected Area best practice workshop August 2023. ©DWC

A two-day training workshop on Marine Protected Area (MPA) best practice was organised by the Sri Lankan government's Department of Wildlife Conservation (DWC) in collaboration with the Ocean Country Partnership Programme (OCPP) on the 1st and 2nd August 2023. The workshop focused on building upon the knowledge of DWC staff including Wildlife Rangers working in MPAs across Sri Lanka, as well as key representatives from other government ministries and non-governmental organisations (NGOs).

The objectives of the MPA Best Practice workshop were to:

- » Enhance understanding of all stages of the MPA Implementation Cycle.
- » Recognise and understand next steps to achieve Sri Lanka's commitment to 30 by 30 initiative.
- » Improve understanding of different roles and departments involved in the management of Sri Lanka's MPAs.
- » Build understanding of best practice, tools, techniques, and lessons learnt for effectively managed MPAs.
- Agree a shared vision for Sri Lanka's MPAs and MPA network.

To ensure the information presented during the workshop by the OCPP and Sri Lankan partners is available for the long term and to a wider audience, OCPP agreed with DWC to deliver a workshop report[1] and an implementation toolkit.

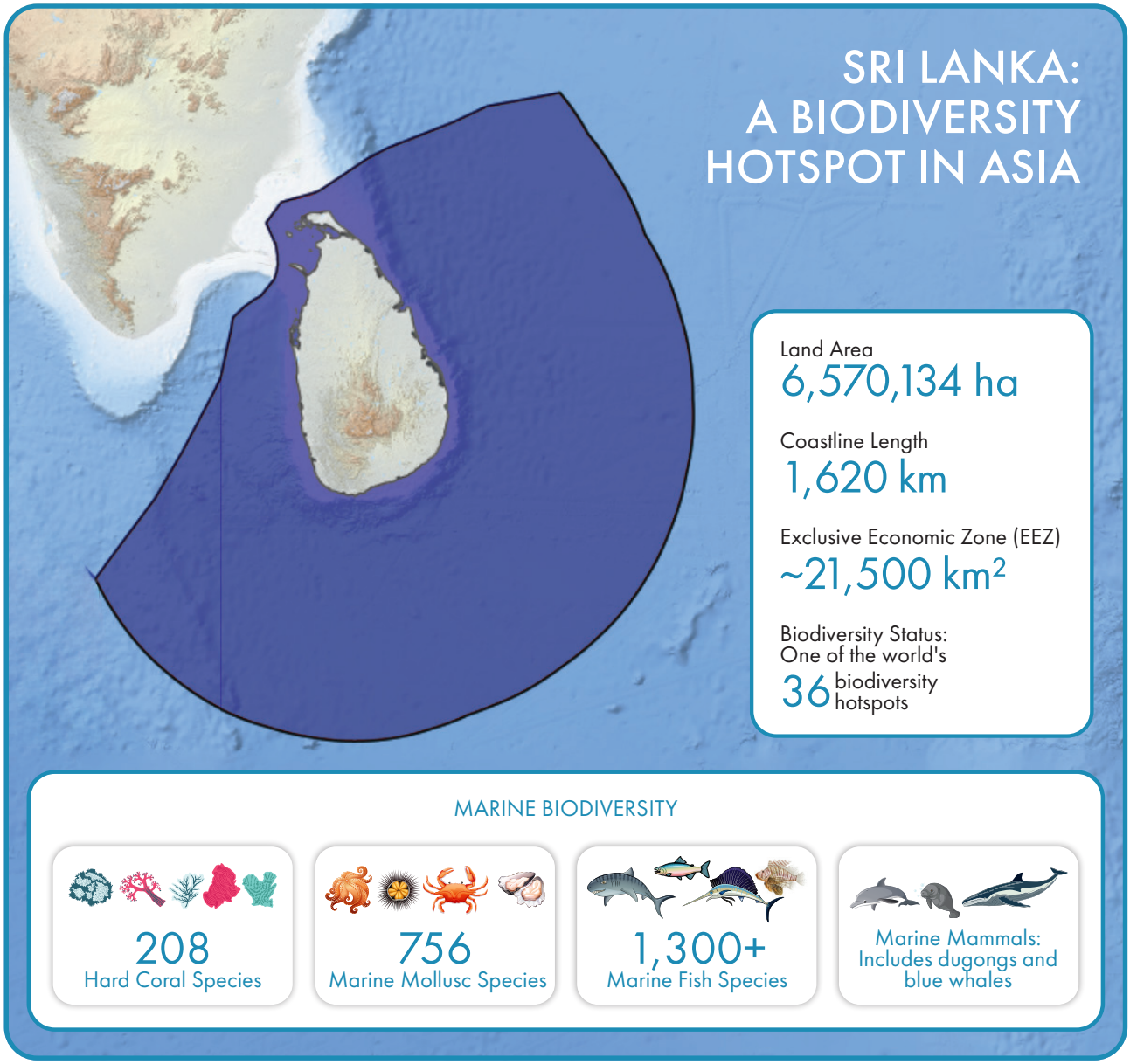
The purpose of this implementation toolkit is to provide the content and case studies presented by the OCPP team members and Sri Lankan partners at the workshop in an accessible and detailed format. This toolkit presents additional case studies and links to tools from international MPA best practice, to continue to support improved knowledge sharing and lessons learnt.

The implementation toolkit is aimed towards those who are actively involved in MPA designation, management, monitoring and evaluation in Sri Lanka to build an understanding of best practice throughout the MPA implementation process. This will encourage all parties to engage with each aspect of the MPA cycle with a common understanding of what is involved and what Sri Lanka could achieve. This toolkit details various case studies and tools that could be used or adapted to suit Sri Lanka's needs and supporting standardisation of approach towards each aspect of MPA designation and management.

04 CONTEXT: SRI LANKA'S MARINE ECOSYSTEMS

4.1 Biodiversity

Sri Lanka's land area is 6,570,134 ha and is considered to be Asia's most biodiverse country per unit area. It has been identified as one of the world's 36 biodiversity hotspots, noted for its native, endemic, and endangered species across both the terrestrial and marine environment. Sri Lanka has 1,620 km of coastline and an Exclusive Economic Zone (EEZ) covering an area of approximately 21,500 km^2, hosting marine ecosystems including coral reefs, mangroves, sea grass beds, salt marshes, and sand dunes. These marine ecosystems support high levels of biodiversity, including 208 species of hard coral, 756 species of marine molluscs, over 1,300 species of marine fish and resident populations of marine mammals including dugongs and blue whales[2].



4.2 Ecosystem Services

Sri Lanka's coastal and marine ecosystems and associated biological diversity provide a range of critical ecosystem services that benefit the Sri Lankan population, of which over 33%[3] live within 50 km of the coast. The ecosystem services provided by Sri Lanka's marine environment include food security, trade and shipping, coastal livelihoods, tourism, coastal protection, and national security.

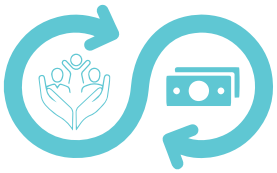
The fisheries sector generates direct and indirect employment opportunities for about 583,000 individuals and livelihoods for 2.7 million individuals from coastal communities. Further, a gross national income of Rs. 113,386 million (approximately £289 million) was generated from the total fish production of 505,830 Mt in 2019, with close to 80% generated from marine fisheries. Additionally, the country is a popular tourist destination with almost two million tourists visiting it each year, accounting for an income of Rs. 646,362.3 million (approximately £3,333.9 million) in 2019 before the covid pandemic.[4]

The coastal region is also the hub of industrial production in the country. There are five major seaports located in Colombo, Galle, Trincomalee, Kankasanthurai and Hambantota, with almost 4,000 vessels berthed in these ports in 2019[5].

33%
of Sri Lanka's population lives within 50 km of the coast

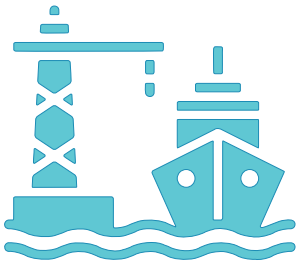
583,000
individuals employed directly & indirectly in fisheries

2.7 million
coastal community members rely on fisheries for livelihoods



5 major seaports:
Colombo, Galle,
Trincomalee, Kankasanthurai,
Hambantota

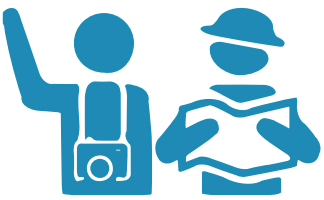
~4,000
vessels berthed in Sri Lankan ports in 2019



Rs 113,386 million (~£289 million)
income from fisheries in 2019
(80% from marine fisheries)

505,830 Mt
of total fish production in 2019

2 million
tourists visited Sri Lanka in 2019



Rs 646,362.3 million
(~£3,333.9 million) revenue from tourism in 2019

4.3 Threats

There are multiple threats facing Sri Lanka's coastal and marine environments including:

- Habitat damage and destruction, resource depletion and loss of biodiversity due to human activities including fishing (commercial and subsistence), aquaculture, habitat clearance for land (for example, for farming and urban development).
- Pollution including sewage, solid waste, plastics, industrial effluents generated by urban centres, industry and tourism.
- Climate change impacts including increasing sea water temperatures, sea level rise, increasing frequency of storms and changes in the El Niño and La Niña weather patterns.
- Limited resource availability, including personnel, funding and equipment, to ensure successful monitoring, management and reporting on protected areas, species and habitats.

4.4 Environmental Protection

4.4.1 Legislation

To protect Sri Lanka's valuable ecosystems, the Government of Sri Lanka has enacted relevant environmental policies and is also signature to national and international environmental commitments.

The Fauna and Flora Protection (Amendment) Act, No. 49 of 1993 is the core legislation that empowers the DWC to introduce necessary measures for the protection of the fauna and flora of Sri Lanka. The Act provides for the establishment of marine sanctuaries, marine reserves, and marine national parks and the implementation of associated management measures such as permits, licenses and prohibitions.

There are several useful documents summarising environmental legislation and commitments in Sri Lanka, including the Ministry of Environment's National Environmental Action Plan 2022-2030[6] and the Environmental Foundation (Guarantee) Ltd marine environmental Law and Policy Review from 2022.[7]

Colombo Harbour © Saiko

4.4.2 Relevant Sri Lankan Government Departments

Within the Government of Sri Lanka, there are several Ministries and Departments which are involved in aspects of coastal and marine management, conservation, and research. A summary of key Ministries and Departments and their role in the marine environment can be found in Table 1. This list is correct at the time of publishing and is not exhaustive.

Table 1 Key Government of Sri Lanka Ministries and Departments involved in the conservation and management of the coastal and marine environment.

Government Ministry or Department	Role in Marine Environment
Ministry of Environment	• Formulation, implementation, monitoring and evaluation of policies, strategies, programmes and projects, in relation to the subject of environment, wildlife, forest resources. • This includes policies and plans for environmental conservation and management and national and international cooperation for the protection of the environment.
Department of Wildlife Conservation (DWC)	• Designate and manage terrestrial and marine protected areas. • Designation of protected areas including Marine Reserves, Marine Sanctuaries and National Parks.
Department of Fisheries and Aquatic Resources (DFAR)	• Development and management of the fisheries sector. • Designation of Fisheries Management Areas (FMAs).
Coast Conservation & Coastal Resource Management (CC&CRM)	• Management and improvement of the coastal marine environment including designating Special Management Areas (SMAs) and developing a Coastal Zone Management Plan.
National Aquatic Resources Research and Development Agency (NARA)	• Carrying out and coordinating research, develop and management activities for aquatic resources.
Marine Environment Protection Authority (MEPA)	• Management and response to marine pollution in the marine environment.
Department of Forest Conservation	• Conserve and develop national forest resources, including mangroves.
Central Environmental Authority (CEA)	• Regulate, maintain and control quality of the environment, with a focus on pollution.
Sri Lanka Tourism Development Authority (SLTDA)	• Management and promotion of tourism in Sri Lanka.

4.4.3 Protected Areas

Sri Lanka's MPAs are mainly designated and managed under the Fauna and Flora Protection (Amendment) Act, No. 49 of 1993, by the DWC (Table 2). MPAs designated by DWC focus on protecting the area at an ecosystem level, for example protecting coral reef ecosystems including the associated reef fish and megafauna.

DWC currently have designated 28 MPAs that protect a total area of 558,309.4 ha (5,583 km^2) of which 168,997.7 ha (1,689.98 km^2) covers the marine environment (Figure 1). Details about each MPA in Sri Lanka can be found in Appendix 1. Overview of MPAs in Sri Lanka.

Sri Lanka also has additional types of marine protection established under different legislation and government departments which have more of a focus on fisheries or coastal management (Table 2).

The Government of Sri Lanka has ambitions to continue improving existing MPA management and monitoring. As well as expanding the network of protected areas for Sri Lanka's marine habitats and species. This will support Sri Lanka to meet national and international commitments, including to protect 30% of land and marine areas by 2030[8] under The Kunming-Montreal Global Biodiversity Framework.

Table 2 Key types of marine protection in Sri Lanka

Type of Protect Area	Definition	Management Authority
(Marine) National Park	Defined as an area which includes the sea as well as the adjacent coastal belt. These sites predominately consist of coral reefs, seagrass meadows and other valuable ecosystems. Hunting, killing or removal and damage of wildlife and plants is prohibited in National Parks, but entry for observation, such as scuba diving and whale watching, is allowed. Traditional activities that took place before the declaration of the National Park are also allowed. National Parks in Sri Lanka are equivalent to IUCN category II for protected areas.[9]	DWC
Marine Sanctuary	Other areas (state, land that is not state, land or marine area not declared as Nature or Marine Reserves) can be declared as a Sanctuary. Sanctuaries allow sustainable human activities and are subject to various regulations.	DWC
(Marine) Nature Reserve	Entering a Nature Reserve without a permit or carrying out any harmful activity inside a Nature Reserve is prohibited. Nature Reserves in Sri Lanka are equivalent to IUCN category 1b for protected areas.	DWC
Fisheries Management Areas	Designated and managed by DFAR under the Fisheries and Aquatic Resources (Amendment) Act, 2023. These focus on management of fisheries stocks or protection of important fisheries areas (such as nurseries).	DFAR
Special Management Areas	Designated in the coastal zone and managed by CC&CRM under the Coast Conservation (Amendment) Act, No 49 of 2011.	CC&CRM

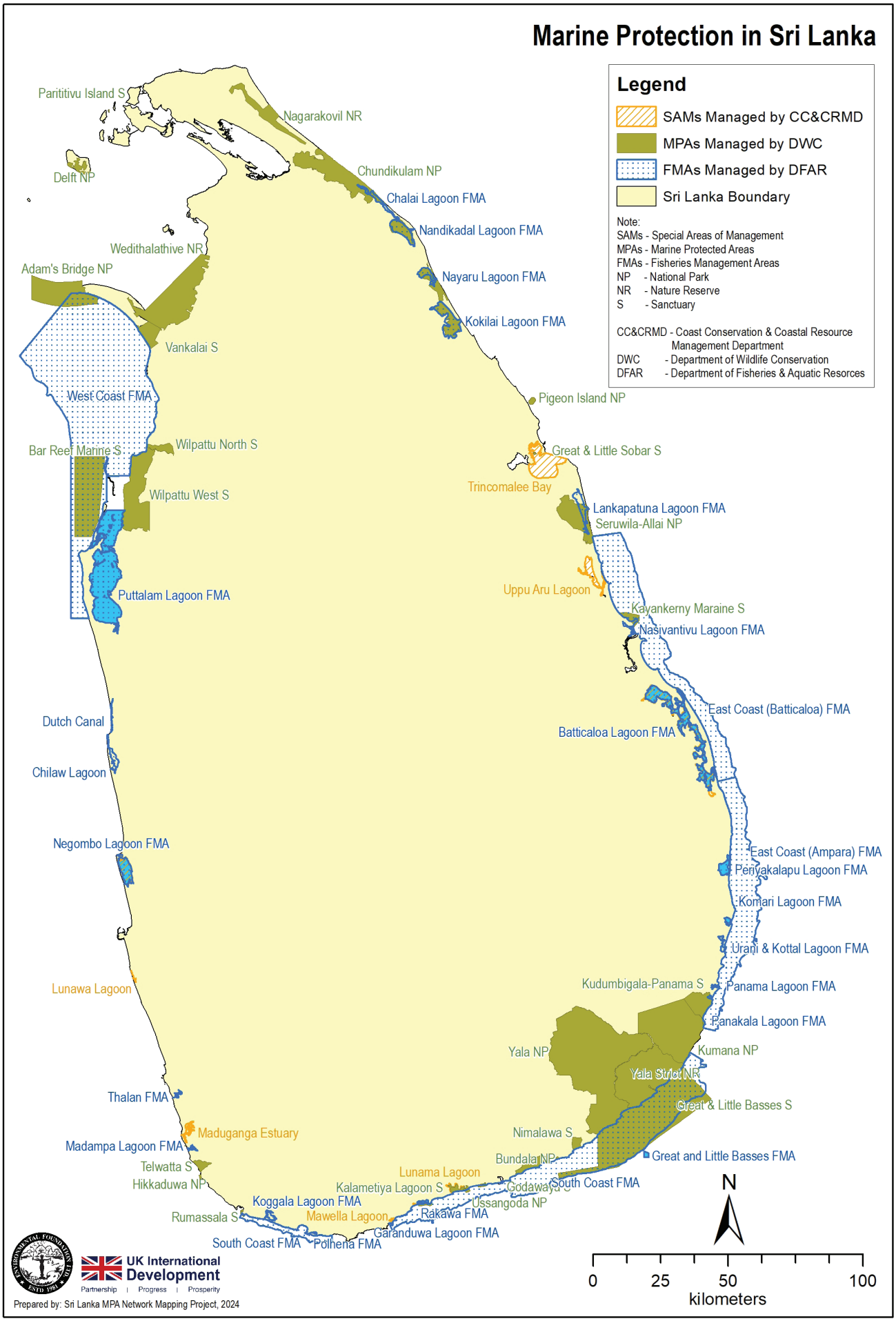


Figure 1 Map of Sri Lanka with locations of all protected areas and their designation[10]

05 STAKEHOLDER ENGAGEMENT

5.1 Learning objectives

- Understand the importance and benefits of stakeholder engagement to support MPA designation and management.
- Learn the key principles of effective stakeholder engagement.
- Understand the importance of a stakeholder engagement plan and learn how to develop one for specific requirements.
- Learn stakeholder mapping techniques to identify key stakeholders.
- Explore engagement methods to meet the needs of different stakeholder types.

5.2 Why engage with stakeholders?

Stakeholders are individuals or groups who are positively or negatively impacted by a project, initiative, policy, or organisation.[11] In the context of MPAs, stakeholders associated with designation and management typically include a diverse range of groups and individuals who have an interest in or are affected by the management and conservation of these areas. This is due to the wide-ranging social, environmental, and economic impacts an MPA can have. Some of the key categories of stakeholders for MPAs include, government agencies, NGOs, fishing and industry, and local communities (Figure 4).

In 2018, a review of 27 MPAs from around the world found that stakeholder engagement was the most important factor affecting MPA success, and equally, its absence was the most important factor influencing failure.[12]

Effective stakeholder engagement throughout all stages of the MPA Implementation Cycle (Section 7), from considering what and where to designate to management actions and MPA successes, provides many benefits for both stakeholders and those managing the MPA.

These include but are not exclusive to:

1. MPA awareness

Engagement improves general awareness and understanding of the MPA, its purpose, regulations, and the need for MPA governance. Greater awareness and understanding amongst site users and the local community can help to build support for the MPA.

2. Collecting and sharing information

Data collection and knowledge sharing is vital to support evidence-based decision making. Stakeholders can provide valuable local knowledge that can help MPA managers identify threats and impacts to a site, develop management, input into monitoring, and help review whether management is doing what it set out to achieve. The sharing of information between managers and stakeholders also promotes the consideration of different views. More information on MPA evidence in Section 8.5.

3. Sense of ownership and improved compliance

Effective engagement provides a mechanism for all stakeholders to influence the decision-making process. This can create a sense of ownership over the MPA and motivate stakeholders to support management measures within it, resulting in higher levels of compliance.

4. Reduce conflict and build trust

Stakeholder engagement improves transparency in decision-making, helping to build trust in the MPA management authorities whilst also allowing for opportunities to discuss conflicting views at the very beginning of a process, thereby reducing long term conflicts.

5. Affect behavioural change

Management of an MPA usually requires affecting behavioural change amongst marine resource users for the purpose of protection and improvement to marine ecosystems.

Figure 2: The key principles to follow to achieve effective stakeholder engagement.

5.3 Gender Equality and Social Inclusion (GESI)

Gender Equality and Social Inclusion (GESI) refers to an approach that aims to ensure that all individuals, regardless of their gender, ethnicity, age, disability, or other characteristics, have equal rights, opportunities, and access to resources and services.[13] In various development contexts, including conservation and natural resource management, such as in MPAs, GESI emphasises addressing inequalities and promoting inclusivity to achieve sustainable and equitable outcomes.

Consideration of GESI brings further benefits when engaging with stakeholders.

1. Equity and Justice

GESI ensures that diverse voices and perspectives, including those of women, indigenous communities, and marginalised groups, are heard and respected in decision-making processes related to MPAs. This promotes equity and social justice in conservation efforts.

2. Enhanced Effectiveness

Incorporating GESI considerations leads to more comprehensive and effective management strategies for MPAs. Understanding the specific needs, concerns, and priorities of different stakeholders helps tailor conservation initiatives that are inclusive and sustainable.

3. Long-term Sustainability

Engaging with GESI stakeholders fosters stronger community support and compliance with MPA regulations. It promotes stewardship and sustainable use of marine resources over the long term.

The process of stakeholder engagement with a GESI approach is best practice. The process described in Section 5.4 should be followed with clear identification and consideration of any groups or individuals who may need different approaches to be able to participate.

5.4 Stakeholder engagement plan

It is good practice to include stakeholders from the very beginning of any decision-making process, ensuring communication is open and transparent. There is no one engagement methodology that fits all stakeholders and all MPA management processes.

To help tailor engagement activities to the specific local situation it is useful to develop a stakeholder engagement plan, following seven key steps (Figure 3). This process can be used for any MPA project and helps to ensure your engagement achieves the desired outcome. For example, the designation of a new MPA, development of management measures or an MPA awareness campaign.

Figure 3 The seven key steps of the stakeholder engagement process for any MPA related project.

Developing and using a stakeholder engagement plan enables:

- Clarification of the desired level of engagement and therefore identification of what methods are most appropriate.
- Clarification of the purpose of activities to be developed.
- Targeted engagement activities.
- Stakeholder identification and any GESI considerations.
- Development of a Stakeholder engagement plan.
- Consideration of the likely costs and resources associated with the planned engagement.
- If resources are limited e.g., time or money, a stakeholder engagement plan can help to focus efforts on the most important and influential stakeholders.

A summary of each step of the stakeholder engagement process is outlined below.

Step 1: Define the purpose of engagement

The first step in developing a stakeholder engagement plan is to identify why the activity is needed, what outcomes are hoped to be achieved, and what the scope and context of the engagement is. Once a clear purpose for engagement is defined, it is important to consider the issues to be addressed and, given the available time and resources, determine what can realistically be achieved.

Step 2: Identify relevant stakeholders

MPAs affect a wide range of groups and individuals who use and depend on MPAs, whose activities affect them and/or have a direct or indirect interest in them. This could include other government departments, politicians, non-governmental organisations (NGOs), universities, research institutions, local community organisations, local businesses and industry as well as the general public (Figure 4).

It is important to consider all these stakeholder groups when planning engagement activities to ensure a wide range of different views and perspectives are being covered. For example, those who may oppose MPAs and their related management and those who may be hard to reach and are less represented in society.

OCPP and DWC METT-4 training workshop in January 2024. © OCPP

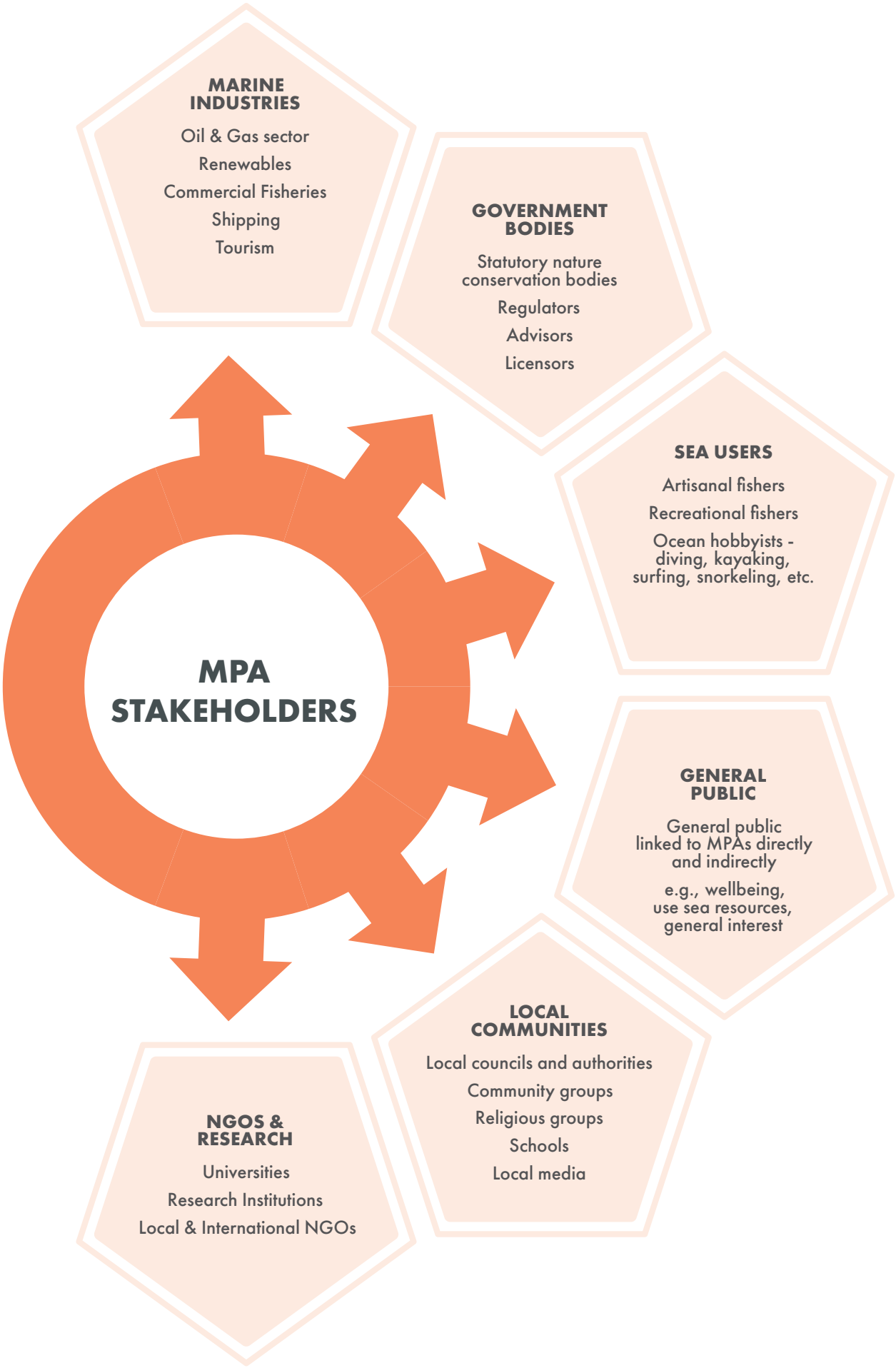


Figure 4 Examples of different types of stakeholders linked to Marine Protected Areas

Step 3: Map and analyse stakeholders

Once stakeholders have been identified, the list should then be analysed to determine the most appropriate engagement methods to use. It is not always possible or necessary to engage with every stakeholder to the same degree all the time. To help work out who and how to engage stakeholder mapping can be used. Stakeholder mapping usually involves grouping stakeholders in relation to their levels of interest and influence in a project. Stakeholders are plotted on a graph (Figure 5) according to whether they have a high or low interest in, and high or low influence on the topic to be engaged on (e.g., the development of an MPA management plan). Each box on the graph represents a level or type of engagement which stakeholder engagement to be tailored to different groups. The four levels of engagement are:

Inform - This level of stakeholder engagement provides stakeholders with the information they need to understand the project or proposal and the decision-making process being followed, allowing them to come to an informed opinion. But it doesn't provide an opportunity for active stakeholder participation and engagement. An example of this level would be sharing a news article online.

Consult – The 'Consult' category of stakeholder engagement provides a basic level of opportunity for stakeholder input to a decision. The MPA management authority briefs the stakeholders on the project or proposal and asks for their opinions to consider when making the final decision. Stakeholders should be provided with enough information and interaction to keep them updated. A stakeholder meeting, questionnaire or formal consultation are methods often used for this level of engagement.

Involve – This level of stakeholder engagement is more thorough than a consultation. Stakeholders are invited to participate in the process from the beginning and are provided with multiple opportunities to input into the decision-making process. However, the MPA management authority remains as the key decision maker and stakeholders do not have any sort of high-level influence over the decision. A workshop is an example of this level of stakeholder engagement.

Collaborate – The final level of stakeholder engagement 'Collaborate' provides stakeholders with an opportunity to directly engage in decision-making. The MPA management authority still holds the ultimate decision-making power, but they can provide stakeholders with a level of influence where everyone collaborates to find a consensus. It is important that the management authority clearly outlines the degree to which consensus will be sought and how much influence stakeholders will have in the final decision at the very beginning of the decision-making process to manage expectations. An example of an engagement method for this stakeholder type would be an MPA advisory board.

METT-4 stakeholder workshop in Kalpitiya for Bar Reef Marine Sanctuary in January 2024. © OCPP

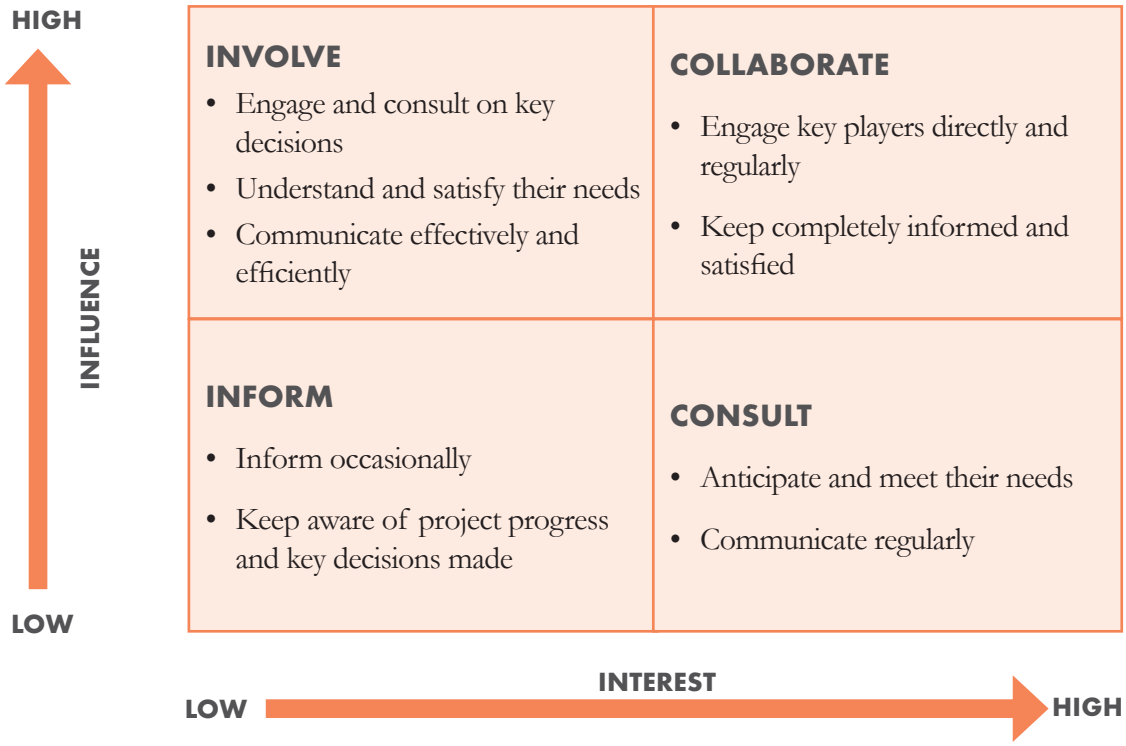


Figure 5 Stakeholder mapping categories in relation to their levels of interest and influence for an MPA engagement activity. Figure adapted from JNCC MPA Fisheries Management Toolkit 2020.

Step 4: Choose engagement methods

Once stakeholders have been mapped, the method of engagement should be selected to best meet the needs of the relevant stakeholders and the purpose of the engagement. There are a vast number of methods that can be utilised, and each has their own strengths and weaknesses. Depending on the purpose of engagement it may be appropriate to use multiple methods throughout the engagement process. Whichever methods are chosen, it is important to clearly communicate with stakeholders how their input will be used to manage expectations. The time and resources available to complete engagement will also influence the suitability of methods. Table 3 provides examples of engagement methods that can be used to achieve the different categories of stakeholder engagement that we have previously discussed.

Table 3 Examples of stakeholder engagement methods in relation to stakeholder categories based on level of influence and interest

ENGAGEMENT METHOD	STAKEHOLDER CATEGORY			
	Inform	Consult	Involve	Collaborate
	Informal discussions & conversations	Public meetings	Workshops	Workshops
	Printed information e.g., fact sheets, newsletters, bulletins	Workshops	Multi-stakeholder forums	Focus groups
	Websites	Surveys/questionnaires	Focus groups	Advisory boards
	Press & media	Consultations		Consensus building
	Social media			Task and finish groups
	Public presentations			
	Community events/ open days/ exhibitions			

Step 5: Create a stakeholder engagement plan

Following the identification of appropriate stakeholder engagement methods, planning the engagement process should begin. Review all the activities planned to be carried out and consider the associated costs, time needed and number of personnel. Outline who will be responsible for each engagement activity and whether additional expertise is required. Collating all of this information into a stakeholder engagement plan will allow consideration of whether the planned methods are realistic and appropriate for delivering the desired outcomes, and that the proposed timing will enable stakeholders to engage easily in the process.

Step 6: Implement the stakeholder engagement plan

Once the stakeholder engagement plan is in place it is important to actively use it and keep it up to date throughout the engagement activity process. The plan can be used for multiple functions, for example, it can be used to ensure the right stakeholders attend each engagement event, help plan staff time and budgets, introduce new team members to the work and the different stakeholders involved or help plan engagement processes for other purposes.

Step 7: Monitor and evaluate the stakeholder engagement plan

The final step of the stakeholder engagement process is to assess the effectiveness of the stakeholder engagement activities carried out to determine whether the right stakeholders are being engaged and relevant objectives are being achieved. Therefore, some form of monitoring and evaluation should be considered as part of the stakeholder engagement plan. The evaluation approach taken will depend on whether the aim is to evaluate the effectiveness of the stakeholder engagement (i.e. the process) and/or the impact of the stakeholder engagement (i.e. the outcome). The use of indicators will enable measurement and evaluation of progress towards achieving effective stakeholder engagement. Table 4 suggests some potential indicators that could be used to assess the effectiveness of stakeholder engagement activities.

It may be necessary to collect some baseline data before the engagement begins to have data to compare against. This will help to understand whether engagement has brought about a change in stakeholder understanding or awareness.

Table 4 Example of potential indicators that could be used to assess the effectiveness of stakeholder engagement activities.

High-level indicator	Indicator type	Examples of specific indicators	Suggested methods for evaluation
Involvement of communities and stakeholders in management activities	Process	Number of responses received to consultations	Responses to informal/formal consultations noting the number of individuals (male/female) and their affiliation.
Local understanding of rules and regulations	Outcome	Percentage of respondents who are aware of the MPA regulations	Stakeholder questionnaire (household/ key informant groups)

5.5 Case Study: Designation of new MPAs in Wales, UK

In 2016, the Government of Wales, in the United Kingdom, began a process to identify areas in Welsh waters where new multi-use MPAs or Marine Conservation Zones (MCZs) as they are known in Wales, could be designated to help address gaps in the existing MPA network. The process was underpinned by a commissioned report by JNCC and Natural Resources Wales to identify the ecological gaps in the Welsh MPA network.[14]

Stakeholder engagement has been carefully considered throughout each stage of the MPA designation process, which is still ongoing at the time of writing. At the start of the process, a public document was created to clearly outline the purpose and steps of the designation process. It provided stakeholders with background information on what an MPA is, previous actions taken for the existing Welsh MPA network, next steps, and clearly acknowledging the importance of stakeholder input.

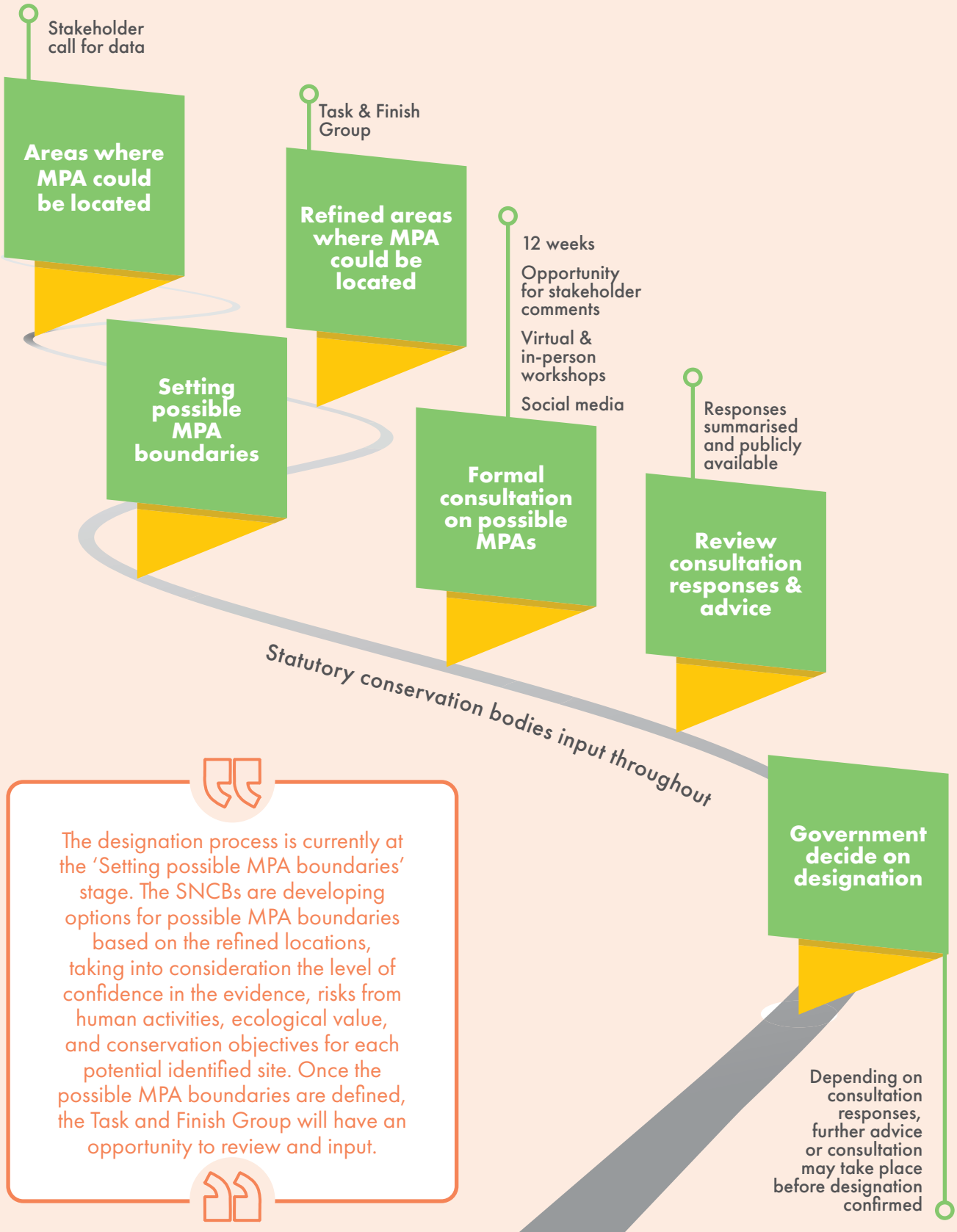
The Government also committed to:

1. Ensuring the need for additional MPAs in the Welsh network is understood by all stakeholders.
2. The designation process is clear and transparent.
3. Providing opportunities for stakeholders to input throughout the process.
4. Ensuring objectives of the MPAs and their associated management measures are clearly understood by stakeholders.
5. Ensuring regular updates are available to the public via associated websites and social media.
6. The creation of a Task and Finish Group made up of representatives from different sectors to work with the Welsh Government throughout the designation process.

Irish Sea © Nick Fox

Celtic Sea © WorldAtlas

Western Channel Sea © NASA Visible Earth



The designation process is currently at the 'Setting possible MPA boundaries' stage. The SNCBs are developing options for possible MPA boundaries based on the refined locations, taking into consideration the level of confidence in the evidence, risks from human activities, ecological value, and conservation objectives for each potential identified site. Once the possible MPA boundaries are defined, the Task and Finish Group will have an opportunity to review and input.

Figure 6 shows a simplified version of the Welsh MPA designation process based on key areas of stakeholder involvement.

To identify broad areas where the MPAs could potentially be located statutory nature conservation bodies (SNCBs) provided expert advice. Alongside this, a public call for evidence was conducted to allow interested parties to input evidence on suitability of areas. This evidence was reviewed and fed into the process, led by the Task and Finish Group, of refining the potential locations.

The designation process is currently at the 'Setting possible MPA boundaries' stage. The SNCBs are developing options for possible MPA boundaries based on the refined locations, taking into consideration the level of confidence in the evidence, risks from human activities, ecological value, and conservation objectives for each potential identified site. Once the possible MPA boundaries are defined, the Task and Finish Group will have an opportunity to review and input.

If the Welsh Government are satisfied with the evidence and advice provided for potential MPAs, a formal public consultation will then be held for a minimum of 12 weeks. The consultation package will include:

- Information on the possible MPAs and the features to be protected.
- Preliminary advice on potential management options.
- An impact assessment of anticipated costs and benefits.

The consultation exercise will provide another opportunity for stakeholders to give their opinion on the proposed MPAs and provide additional evidence to the Welsh Government. Various methods will be used to engage with stakeholders, including in-person workshops held at locations close to the potential MPAs, virtual events, the formal consultation package and social media. This information will also be shared more broadly within the Task and Finish Group's own networks.

Following the consultation all responses will be analysed and summarised in a public report. The Welsh Government will then decide whether further evidence/consultation is required or if they are happy to designate the MPAs.

The consultation exercise will provide another opportunity for stakeholders to give their opinion on the proposed MPAs and provide additional evidence to the Welsh Government. Various methods will be used to engage with stakeholders, including in-person workshops held at locations close to the potential MPAs, virtual events, the formal consultation package and social media. This information will also be shared more broadly within the Task and Finish Group's own networks.

Welsh Government head quarters in the United Kingdom © report.az

06 MARINE PROTECTED AREAS AND NETWORKS

6.1 Learning Objectives

- Reiterate the definitions of an MPA and MPA network.
- Cover the global context driving MPA designation, specifically the 30 by 30 initiative.
- Recognise the different marine conservation tools available to protect the marine environment and how they work with each other.

6.2 Defining an MPA

MPAs are essential tools for ecosystem conservation and management of human activities. MPA is an umbrella term that encapsulates various designation types, including marine reserves, fully protected marine areas, no-take zones, marine sanctuaries, ocean sanctuaries, marine parks, locally managed marine areas, and national parks. MPAs vary depending on the types of activities that are permitted within the boundaries of the protected area.

The IUCN definition of MPAs that is often used is "a clearly defined geographical space, recognised, dedicated, and managed through legal or other effective means, to achieve the long term conservation of nature with associated ecosystem services and cultural values".

However, there are many other definitions in use. There are several tools available to help classify and define MPAs, including the MPA Guide[15] and Marine Protection Glossary.[16]

The IUCN definition of MPAs that is often used is "a clearly defined geographical space, recognised, dedicated, and managed through legal or other effective means, to achieve the long term conservation of nature with associated ecosystem services and cultural values".

Some key features that can be found across all MPA designation types are listed below:

- **Conservation purpose -** All MPAs are established with the primary goal of conserving marine ecosystems, biodiversity, and/or habitats. They serve as areas where human activities are managed to ensure the long-term protection of marine resources and natural processes.
- **Spatial designation -** MPAs are defined by specific geographic boundaries, distinguishing them from surrounding marine areas. These boundaries can be based on scientific criteria, ecological significance, or socio-economic considerations.
- **Active management -** They serve as areas where human activities are managed to ensure the long-term protection of marine resources and natural processes.
- **Sustainable use -** While some MPAs might have strict no-take zones, many are designed to accommodate sustainable use. This involves balancing conservation goals with controlled human activities such as fishing, tourism, research, and recreational pursuits.
- **Objectives -** MPA objectives are commonly used to set targets and goals. These can be ecological, economical, or even social and cultural.
- **Legal framework -** Some MPAs are designated and managed under a legal or regulatory framework. This often involves a countries government leading the decision-making process for the MPA, with varying levels of stakeholder involvement. However, MPAs do not have to have a legal framework in place and may be designated and managed on a voluntary basis by local communities or NGOs. Common governance for MPAs includes government-led, community-led and co-managed.
- **Global significance -** Many MPAs contribute to international conservation goals, such as those set by the Convention on Biological Diversity (CBD) or the International Union for Conservation of Nature (IUCN).

6.3 MPA Networks

A network of MPAs is defined as "a collection of individual MPAs that operate together, at various spatial scales, and with a range of protection levels, in order to fulfil ecological aims more effectively and comprehensively than individual sites could alone".[17] Overtime, as ecosystems recover, the network will also display social and economic benefits.

6.4 The 30 by 30 Initiative

A key driver for the increased protection of the world's oceans is the 30 by 30 initiative.

In December 2022, 196 nations, including Sri Lanka, adopted the Kunming-Montreal Global Biodiversity Framework.[18] The Global Biodiversity Framework (GBF) is centred around a mission to halt and reverse biodiversity loss by 2030 and includes four aspirational 2050 goals and twenty-three 2030 action targets.

The main goal of this initiative is to ensure that at least 30 per cent globally of land areas and of sea areas are protected by the year 2030. This is to be achieved by the establishment of equitably managed, ecologically representative and well-connected systems of protected areas. Target 3 of the GBF emphasises the need for Protected and Conserved Areas (PCAs) to be 'effectively conserved and managed' not just designated.

A particular focus is on areas of particular importance for biodiversity and its contributions to people. This includes other area-based conservation measures (OECMs), a new conservation approach, separate from protected areas. This is where conservation is achieved mainly as a by-product of other management e.g. a sacred natural site with high biodiversity value may be conserved due to its cultural or religious significance.

6.5 The Marine Conservation Toolbox

The marine conservation toolbox displayed in Figure 7, demonstrates how different marine conservation methods can be grouped into three broad categories of tools:

- Species protection
- Sites protection
- Wider polices and measures

Different marine conservation tools fit into one, two or even all three of the categories.

For example, MPAs come under site protection and species protection. Fisheries stock management measures (e.g. seasonal closures), would fall into the species protection. Regulations and legislation brought in to control the release of pollutants from land into the marine environment comes under the wider polices and measures.

Many countries have wider ambitions for reducing pressures on marine ecosystems and species outside MPAs. Worldwide this is achieved by developing Ocean Plans, or in some cases more detailed Marine Spatial Plans (MSPs).

MSPs identify what activities can happen where, recognising there is a balance to be achieved between social, economic, and environmental objectives. MSPs make sure the right activities happen in the right place, at the right time and in the right way in the marine environment, placing sustainable development at the centre of all decisions.

Spatial designations, such as MPAs, are an integral part of MSPs and Ocean Plans. These plans support nature conservation objectives by ensuring that they are considered within the decision-making processes and that efforts are made to avoid or minimise negative environmental impacts from marine activities.

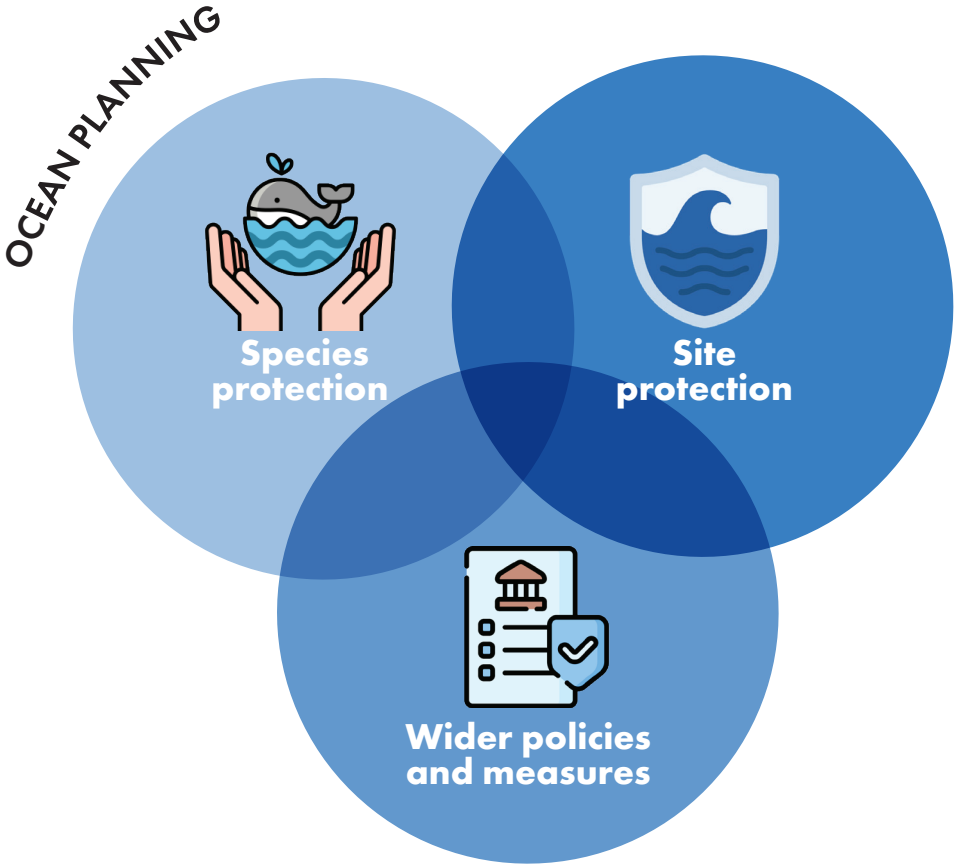


Figure 7 The marine conservation toolbox.

07 MPA IMPLEMENTATION CYCLE

7.1 Learning Objectives

- Learn what the MPA Implementation Cycle is, its different elements and how it supports adaptive MPA management.
- Understand the potential limitations that can impact the success of MPA management.

7.2 What is the MPA Implementation Cycle?

Work on MPAs can be seen as a cyclical process, with each stage feeding into the next (Figure 8). The MPA Implementation Cycle includes five key stages:

- MPA identification and designation (Section 8).
- Threats and impacts (Section 9).
- MPA management (Section 10).
- MPA monitoring (Section 11).
- MPA Assessment and reporting (Section 12 and Section 13).

Once completed, the cycle of stages should keep repeating to ensure the MPA is still successfully meeting its objectives and any new information (such as data, legislation, stakeholder opinions) are considered. Certain elements should be considered throughout all stages of the cycle, such as stakeholder engagement (Section 5) and resourcing (personnel, budget, infrastructure and equipment).

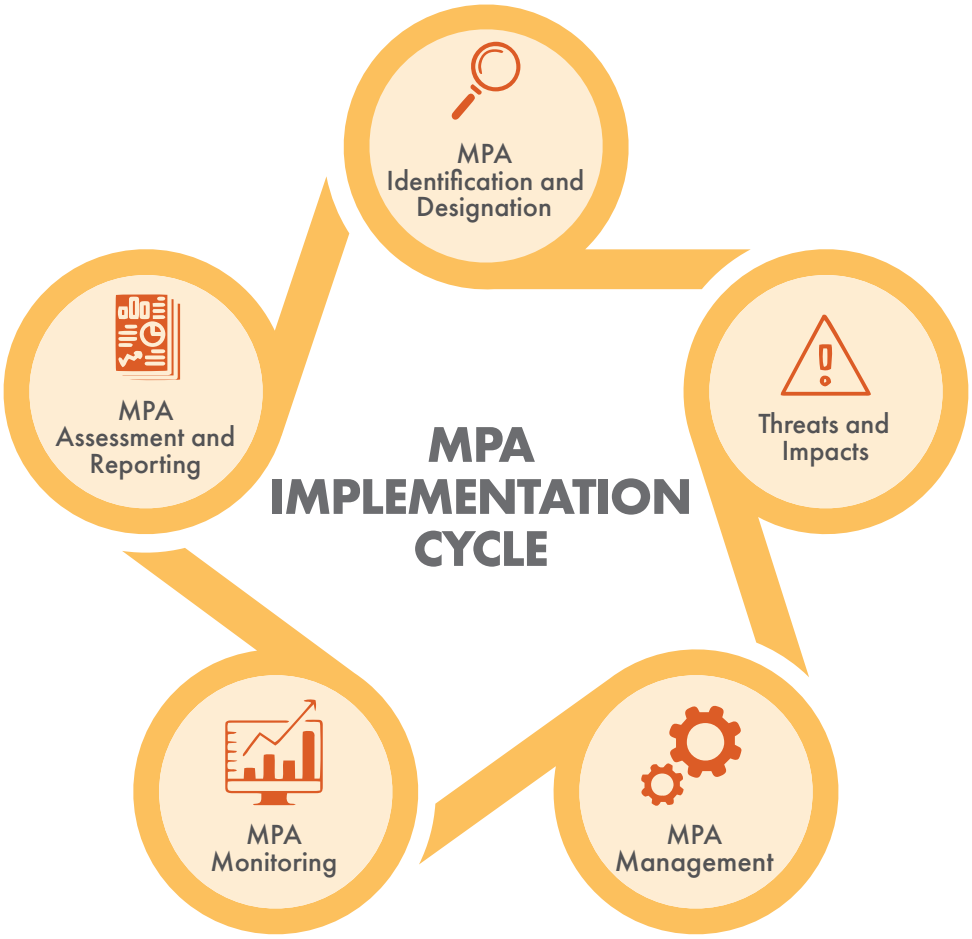


Figure 8 The MPA Implementation Cycle.

7.3 Potential Challenges

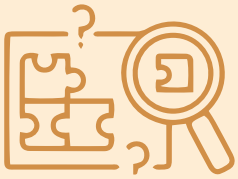
Marine conservation processes, including the stages of the MPA Implementation Cycle, often encounter challenges that need to be addressed to ensure success. Key challenges include:

Resource limitations

Resourcing includes personnel, budget, infrastructure and equipment. Having sufficient resource to complete all aspects of the MPA Implementation Cycle can often be challenging. It is always important to consider current resource allocation when planning all stages of the cycle and what resource will be required for the future. Monitoring, management, enforcement and engagement may need to be adapted to best suit the resource available. Consideration of potential collaboration across stakeholders is also important tool to consider to help achieve the MPA objectives.

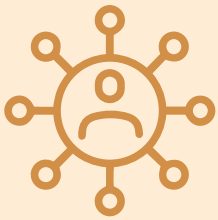
Uncertainty

There will always be questions that are hard to answer when MPA decisions are being made, such as what is the most effective management measure. This highlights the importance of ensuring good stakeholder engagement, monitoring of actions and revisiting the stages of the MPA Implementation Cycle as an ongoing process.



Evidence gaps

Insufficient knowledge, gaps in data and limitations in existing evidence can hinder decision-making and adaptive management efforts. Understanding how to utilise the best available evidence is important, as often their isn't the resource or time available to collect all the information that could be.



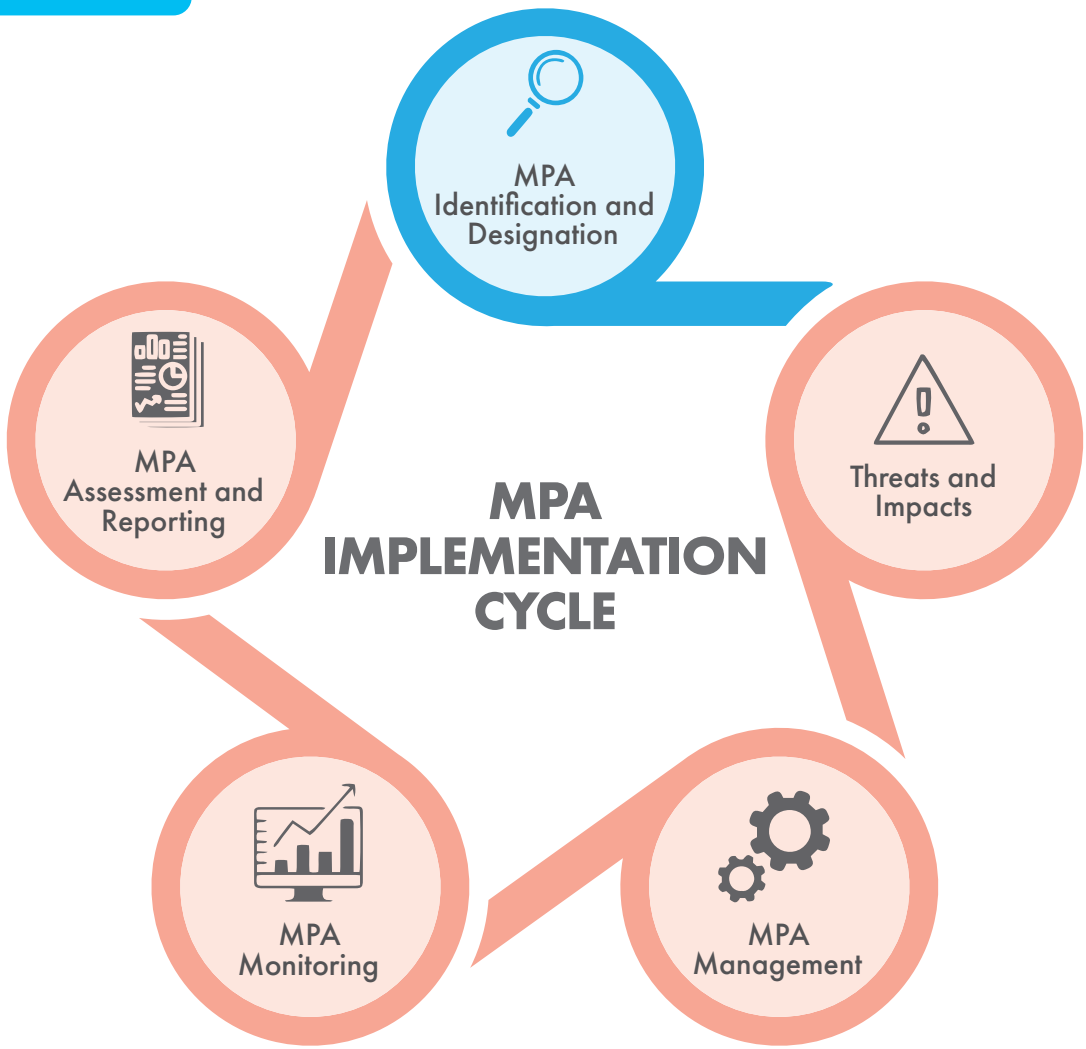
Stakeholder Attitudes

The success of MPA initiatives can be strongly influenced by stakeholder support, with objections or lack of buy-in creating potential barriers to successful MPA implementation. Highlighting the importance of stakeholder engagement throughout the MPA Implementation Process.

Socio-economic factors

Conflicting policies or competing interests, such as those between conservation goals and economic activities, require careful navigation by governments and relevant authorities.

08 MPA IDENTIFICATION AND DESIGNATION



8.1 Learning Objectives

- Understand the benefits of a successful MPA network.
- Explore the MPA network principles that support the designation of a successful, ecologically sound network.
- Understand the supporting principles that are needed including legislation and evidence.
- Learn how to develop SMART objectives for the MPA or MPA network.

8.2 MPA Network Benefits

By combining the strengths of individual MPAs and leveraging their collective impact, an MPA network delivers a more comprehensive and effective approach to marine conservation and the sustainable management of marine resources.

Advantages include:

Enhanced conservation impact

The cumulative effect of multiple MPAs in the network equals greater conservation of marine biodiversity. For example, an effective MPA network has the potential to protect critical breeding grounds, migration routes, and feeding areas, helping to improve the chances of preserving endangered species / habitats as well as highly mobile migratory species, e.g. birds or marine mammals.

Ecological resilience

Connectivity between MPA sites enhances ecosystem functioning and resilience by facilitating species movement, genetic exchange, and the flow of nutrients. In the face of various threats and stressors, the combined effect of multiple MPAs in the network can mitigate local disturbances and provide shelter for species and habitats. They can act as steppingstones for species to navigate changing conditions.

Collaboration and knowledge sharing

An MPA network promotes collaboration among different stakeholders, including government agencies, local communities, scientists, and NGOs. The network provides a platform for sharing knowledge and best practices in MPA management and conservation. It also allows for the exchange of scientific research, monitoring data, and management strategies, leading to improved decision-making and adaptive management approaches.

Social and economic benefits

An MPA network can offer social and economic benefits to local communities. It can support sustainable fisheries, ecotourism, and recreational activities, providing livelihood opportunities and promoting economic development. A network can also enhance the cultural value and sense of stewardship among communities, fostering pride and engagement in marine conservation efforts.

8.3 MPA Network Principles

Creating an effective MPA network involves the consideration of several key principles to ensure its functionality and success. These can be broken down into ecological principles (Section 8.3.1), which are underpinned and supported by appropriate legislation (Section 8.3.2), best available evidence (Section 8.5) and stakeholder engagement (Section 5) (Figure 9).

Successfully considering each principle when new MPAs are being proposed within an existing MPA network, helps to create an ecologically coherent network that achieves its objectives, is well-managed and supported by stakeholders.

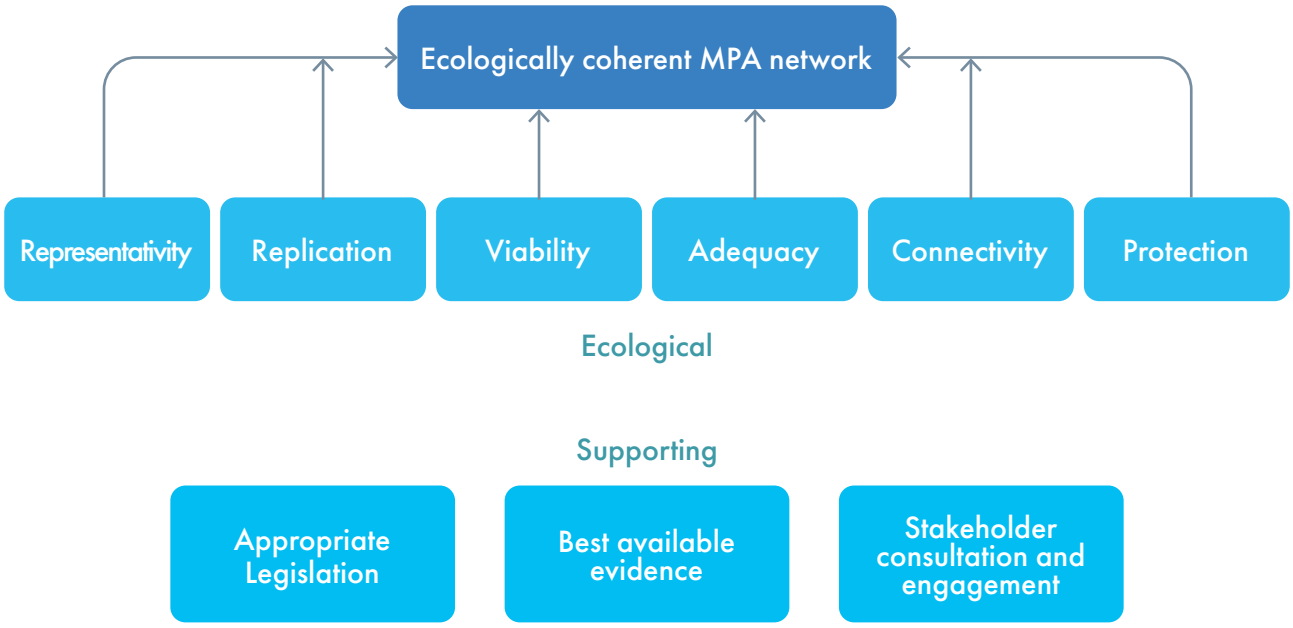


Figure 9 Considerations for developing an ecologically coherent MPA network.

8.3.1 Ecological Principles

MPA networks should be developed considering the ecological principles below. If new MPAs are being proposed within an existing network of MPAs, then these principles should be considered to identify if there are gaps in the existing network that new MPAs could fill. For example, if a marine habitat or species is not currently protected sufficiently to be in healthy condition.

Representativity

The MPA network should represent the range of marine habitats and species. This can be achieved by protecting all major habitat types and associated biological communities present in the marine area.

Replication

All major habitats should be replicated and distributed throughout the network. The amount of replication will depend on the extent and distribution of features within the marine area.

Viability

The MPA network should incorporate self-sustaining, geographically dispersed component sites of sufficient size to ensure species and habitats persistence through natural cycles of variation.

Adequacy

The MPA network should be of adequate size to deliver its ecological objectives and ensure the long-term protection and/or recovery of populations, species, and communities.

Connectivity

The MPA network should seek to maximise and enhance the linkages between individual MPAs using the best science available. For certain species this will mean that sites should be distributed in a way to ensure protection at different stages in their life cycles e.g. breeding, feeding and nursery grounds.

Protection

The MPA network is likely to include a range of protection levels. Ranging from highly protected sites or parts of sites where no extractive, or other damaging activities are allowed, to areas with only minimal restrictions on activities that are needed to protect the features.

8.3.2 Supporting Principles

Appropriate legislation

A comprehensive legal framework is essential to provide a solid foundation for MPA establishment, management, and long-term sustainability. With that in mind, legislation plays a crucial role in ensuring the functionality and effectiveness of MPAs. Further information on what legislation should cover in Section 8.4.

Best available evidence

Network design should be based on the best available evidence currently available, and a lack of full scientific certainty should not be a reason for postponing proportionate decisions on site selection. Further information in Section 8.5.

Stakeholder engagement

Stakeholder engagement is an ongoing process of involving interested parties in assessing, planning, and implementing the MPA network. Involving stakeholders at every stage of the planning process ensures that their perspectives, knowledge, and support are included. For further information see Section 5.

8.4 MPA Legislation

A comprehensive legal framework is vital for the long-term sustainability an MPA network. The following are some key legislative elements that are typically needed to support the establishment and management of MPAs:

MPA Designation

Legislation should provide the legal authority to designate and establish MPAs. It should specify the process for identifying and designating areas as MPAs based on ecological criteria, scientific evidence, and stakeholder consultation.

MPA Objectives and Purpose

Legislation should clearly articulate the specific goals, objectives and outcomes that MPAs are intended to achieve, which may include biodiversity conservation, habitat protection, or sustainable fisheries.

MPA Zoning and Regulations

If required, legislation should authorise the creation of specific zones within MPAs, each with its own set of regulations and restrictions. These regulations may include fishing restrictions, limitations on extractive activities, or guidelines for recreational activities. The legislation should define the boundaries and characteristics of each zone, accounting for ecological considerations and the needs of local communities.

Enforcement and Compliance

Legislation should establish provisions for enforcement and penalties to ensure compliance with MPA regulations. It should specify which agencies have jurisdiction to take enforcement action and who has prosecutorial authority, the basic legal powers (e.g. search and entry, seizure of catch, detention of vessels, arrest etc), definitions of admissible evidence, offences / violations and penalties (including fines), provision for monitoring, surveillance and the use of technologies (such as VMS and remote sensing).

Stakeholder Engagement and Participation

Legislation should facilitate the engagement and participation of relevant stakeholders as identified in Section 5. It should provide mechanisms for stakeholder consultation, representation, and involvement in each stage of the MPA Implementation Cycle. Legislation should follow the GESI approach to ensure it considers marginalised groups and individuals.

Funding and Resources

Legislation should consider the allocation of financial resources and mechanisms for funding the designation, management, and monitoring of MPAs. Ideally, consideration for long-term sustainable financing of the MPA should be considered. At a minimum, legislation should set out the requirements for permitting and/or licence fees and, if appropriate, how they can be used to support management, conservation or local communities.

Monitoring and Evaluation

Legislation should require regular monitoring and evaluation of MPAs to assess their effectiveness in achieving their objectives. It should outline reporting requirements, surveillance requirements, data collection protocols, and mechanisms for adaptive management based on scientific research and monitoring outcomes.

8.5 Best Available Evidence

Collating all available, relevant evidence will support the identification of what and where needs protecting, development of clear objectives for the MPA, and what monitoring and management will need to be undertaken to protect the area. Evidence should be collated not only for the areas being considered for protection but the surrounding area that could impact or be impacted by an MPA.

Fishery Harbour © Susantha Udagedara

Evidence availability will vary for proposed MPAs from very limited to lots of recent, regular monitoring and research. MPAs can be identified with both limited and lots of relevant data, but the best available data should always be prioritised when making decisions. Identification of the gaps in evidence is also important.

Evidence should be collected on:

- Habitats, species, ecosystems distribution, functionality and condition.
- Threats and pressures facing the habitats, species and ecosystems.
- Socio-economic and cultural information on local communities and commercial users who currently use the area, including ecosystem services that the area may be providing.
- Existing government policy and legislation of relevance to the area and any existing management or protection measures that are in place.
- Stakeholders who should be engaged in the process.

Types of evidence to consider:

- Research and scientific papers.
- Reports including from environmental projects and programmes in the area.
- Local stakeholders and community observations, knowledge and opinions.
- Spatial data on habitats, species and human activities.
- Indirect data that might support understanding of the marine environment and threats its faces. For example, water quality sampling conducted to study pollution.

8.6 MPA Objectives

Clear objectives should be developed to help guide the design, management, monitoring and evaluation of MPAs. Objectives should be developed when designating, or as close to designation of the MPA as possible.

The benefits of having clear, well-defined MPA objectives include:

Biodiversity Conservation

Ecological objectives can guide the design and management of MPAs, providing a clear focus on which key marine species, habitats, and ecological processes need safeguarding.

Ecosystem Functioning

MPAs with well-defined ecological objectives contribute to the maintenance of ecosystem functions and services, such as nutrient cycling, carbon sequestration, and coastal protection, benefiting both marine life and human communities.

Threat mitigation and management

Ecological objectives provide a framework to mitigate threats, such as overfishing, habitat degradation, pollution, and climate change impacts. The implementation of management strategies that utilise ecological objectives help to reduce the impact of these stressors and promote ecosystem resilience.

Sustainable Resource Use

Ecological objectives in MPAs often include sustainable resource use as a goal, supporting the livelihoods of local communities while ensuring the long-term viability of marine resources.

Monitoring and Evaluation

By clearly defining ecological outcomes, objectives determine relevant indicators to assess progress and provide a basis for monitoring and evaluating the effectiveness of an MPA. Over time this can enable adaptive management strategies and improve conservation outcomes.

Stakeholder Engagement

Ecological objectives serve as a tool for stakeholder engagement and communication. Clear objectives help communicate the purpose and value of MPAs to different stakeholders. This may facilitate meaningful participation, collaboration, and support for MPA initiatives, especially if those objectives have been agreed in collaboration with stakeholders.

8.6.1 SMART Objectives

When setting MPA objectives, it is important to think SMART. This stands for Specific, Measurable, Attainable, Relevant and Time-Based (Figure 10).

The value of using SMART objectives for MPAs lies in their effectiveness in guiding the planning, implementation, and evaluation processes:

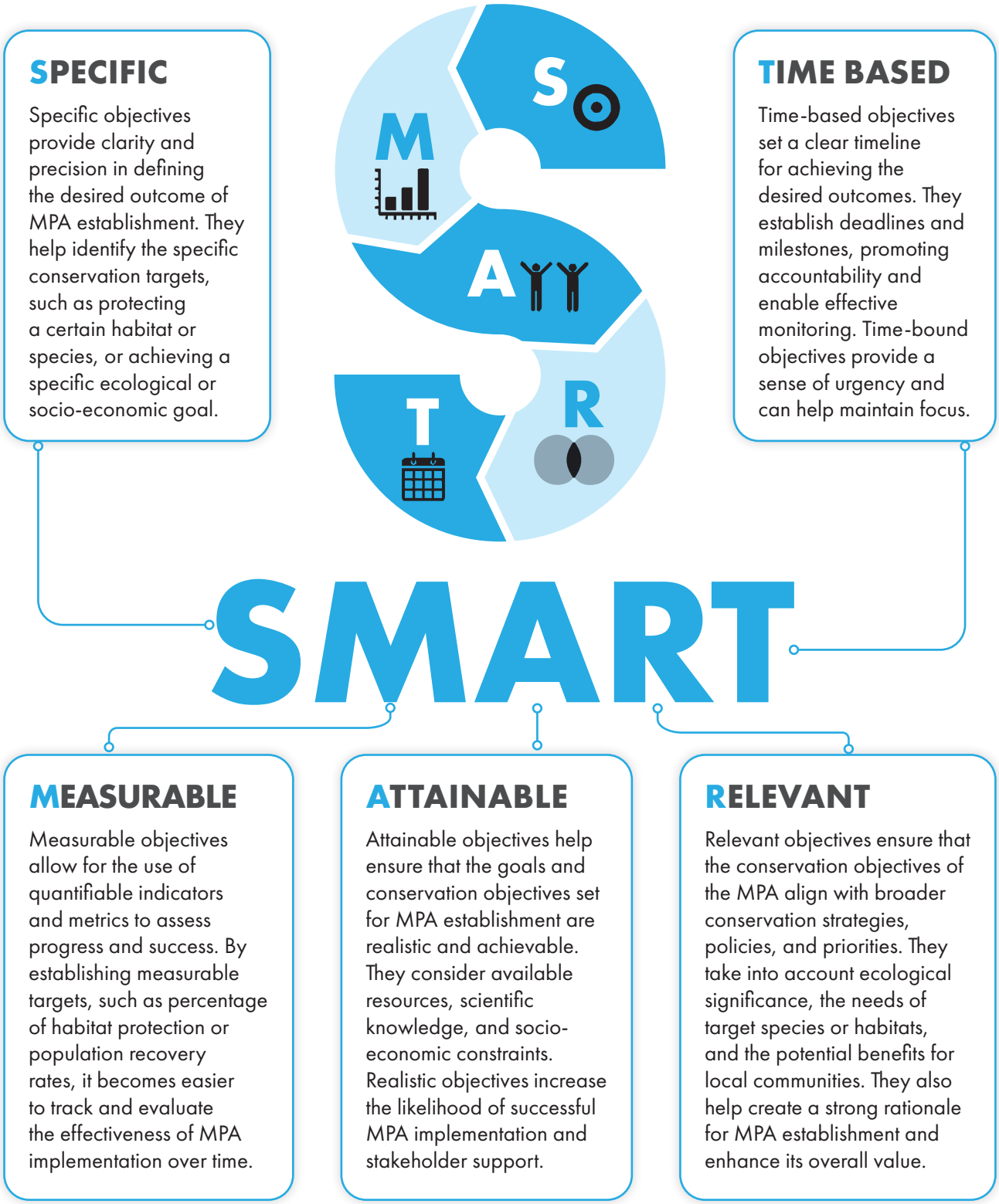


Figure 10 SMART Objectives

8.7 Case Study: Expansion of the UK's MPA Network- English Highly Protected Marine Areas (HPMAs)

The UK has a range of different MPAs making up its MPA network, including Special Protection Areas (SPAs), Special Areas of Conservation (SACs), Marine Conservation Zones (MCZs), and Nature Conservation Marine Protected Areas (NCMPAs).

The UK is committed to ensuring that the protected features within its MPAs are in 'favourable condition'.[19] However, in 2019 the UK Status Report showed that 11 of the 15 marine condition indicators failed to reach the target of "Good Environmental Status".[20] Following recommendations put forward from the Benyon Review,[21] the UK government committed to identify and designate a number of Highly Protected Marine Areas (HPMAs) in English waters to ensure the UK MPA network would start meeting its objectives.

In the English context, HPMAs are areas of the sea that allow the protection and recovery of marine ecosystems rather than specific marine features. The main differences from existing MPAs in the UK are:

- HPMAs take a 'whole site approach', conserving all species and habitats within the boundary, including the water column, which maximises the potential for ecosystem recovery. Other types of MPAs in the UK are designated to protect specific features, such as cold-water corals or burrowed mud habitats, rather than protecting the area at an ecosystem level.
- HPMAs prohibit extractive and destructive uses, allowing only non-damaging levels of other activities. Within other types of UK MPAs, licensable human activities (such as fishing and renewables), can continue within the protected area until management is put in place after a public consultation.
- HPMAs have a prioritised approach to MPA monitoring and will allow nature to fully recover, whilst increasing our understanding of recovery timescales and how ecosystems exist in the absence of damaging human activities.

Five potential HPMA sites (Figure 11) were identified using specific criteria to assess ecological importance, naturalness, sensitivity and potential to recover, as well as provision of ecosystem services, such as blue carbon habitats[22] (Table 5).

Table 5 Selection Criteria for English HPMAs

Ecological principle	Selection criteria
1: Ecological importance	1a. The location has, or has had, relatively higher levels of biological diversity. 1b. The location is known to contain multiple species and/or habitats of national, regional or global importance, or of regional distinctiveness. 1c. The location is of importance to the key life cycle stages and/or behaviours of marine species.
2: Naturalness, sensitivity and potential to recover	2a. The location represents a relatively natural ecosystem. 2b. The location represents a relatively degraded ecosystem.
3: Ecosystem services	3a. The location includes habitats considered to be of importance to the long-term storage of carbon. 3b. The location is of importance to the key life cycle stages of commercially important marine species. 3c. The location includes, or supports, habitats that are important in the provision of flood/erosion protection.

Following an extensive stakeholder consultation that included all five potential HPMA sites, three HPMAs were selected for designation in July 2023. An inshore site, Allonby Bay, and two sites more than 12 nautical miles offshore, North East of Farnes Deep and Dolphin Head (Figure 11).

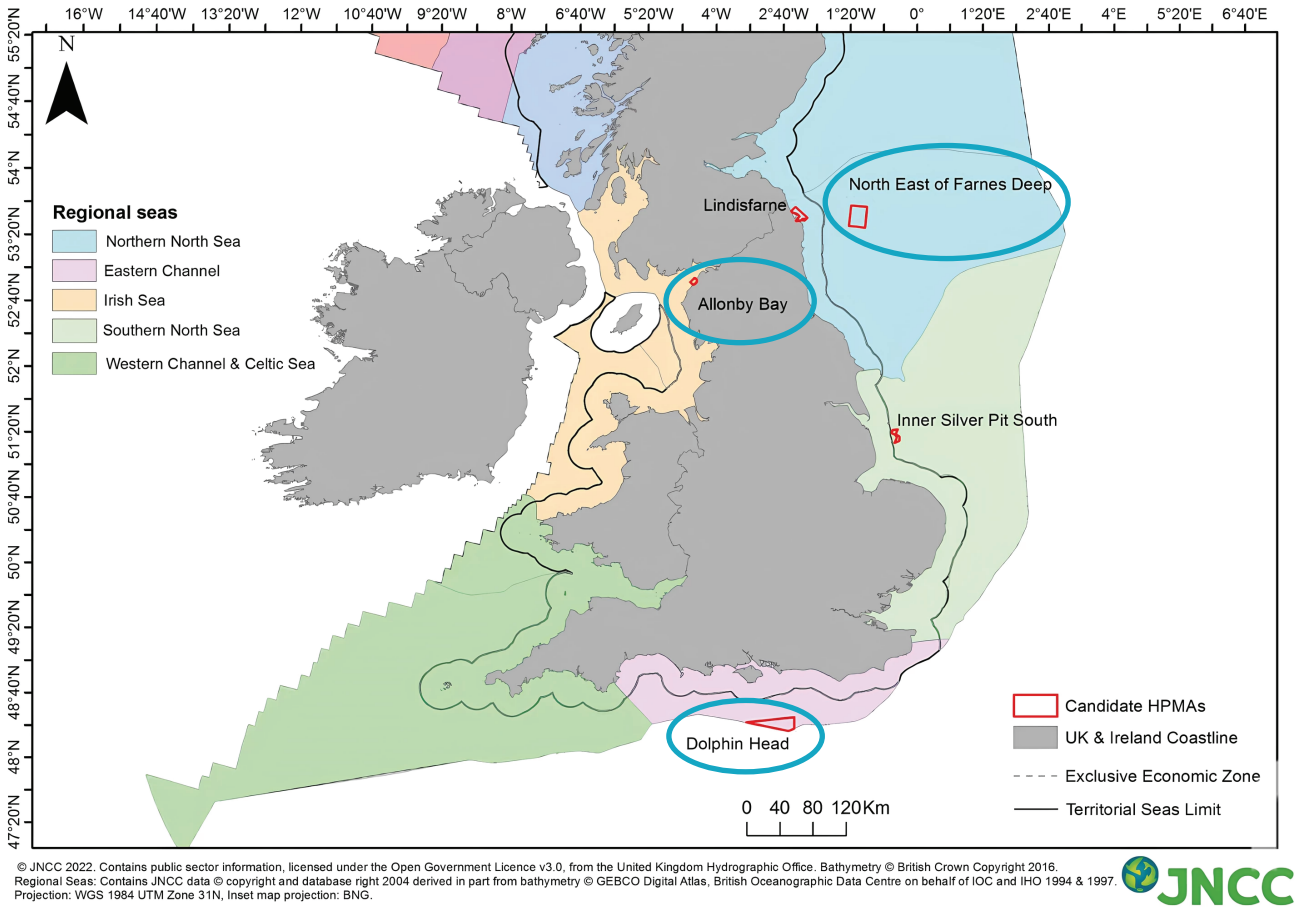
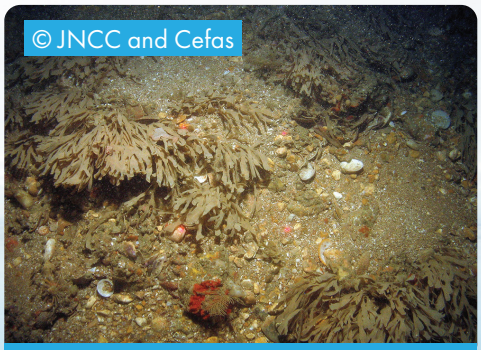
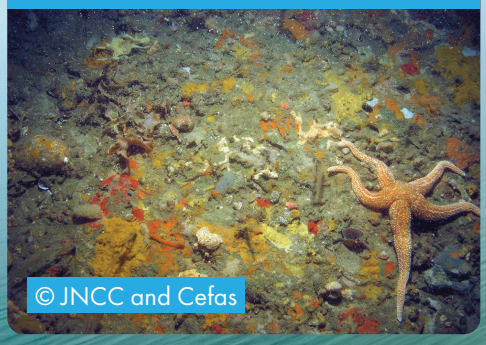


Figure 11 The five candidate HPMAs that were consulted on in 2022, with the final three sites taken forward for designation circled in blue.

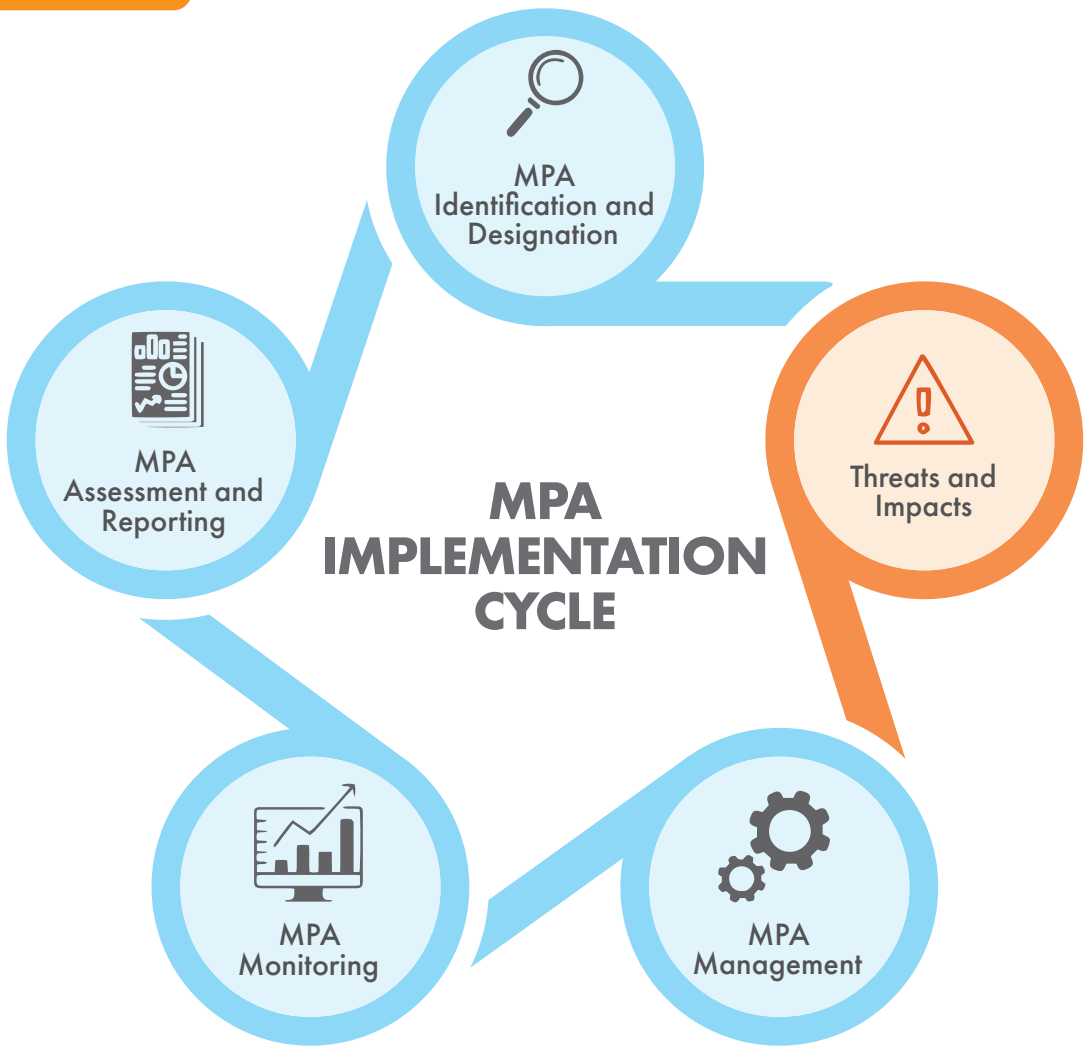


The Dolphin Head HPMA



Allonby Bay in North West England where Allonby Bay Highly Protected Marine Area is located © MNStudio

09 THREATS AND IMPACTS



9.1 Learning Objectives

- Explore the different types of threats to consider that may impact an MPA.
- Learn the three key steps to identify and manage threats.
- Learn how to undertake a threat prioritisation exercise using a risk matrix.

9.2 Identifying threats

In parallel to the identification of MPAs, it is vital to also consider existing and potential threats to the marine ecosystems and how these may impact the MPA, habitats and species protected within the MPA and threaten the achievement of the objectives underpinning the MPA designation.

Marine ecosystems worldwide are increasingly threatened by multiple anthropogenic stressors. These are human activities that impact ecosystems and can be physical, chemical or biological in nature. Impacts include habitat loss, pollution and climate change, resulting in serious reductions in biodiversity and the provision of vital ecosystem services.

Threats to or pressures on an MPA may be a result of anthropogenic or natural events. Threats from human activities include population growth and settlement, vessel traffic, excessive fishing, removal of natural resources, visitor use of areas,

invasive species and pollution. Climate change related pressures, such as ocean acidification, sea-level rise, increased and more severe storm events, also come under anthropogenic threats. Threats from natural events include earthquakes and volcanic activity.

It is good practice to consider the threats that occur in close proximity to the proposed or designated MPA, that could also cause an impact within the MPA. For example, land to sea pollution that may impact water quality within an MPA. Additionally, identifying threats which could affect the future of the MPA or MPA network should be identified and evaluated wherever possible. For example, considering impacts of a new activity and consideration of the likely or continued impact of climate change on the MPA.[23,24]

Threats don't often occur in isolation, and it is important to consider the cumulative effect of multiple threats to the MPA or marine ecosystem.

The process of identifying and manging threats follows a three-step approach.

The steps are iterative, and a regular review of the threats should be made as part of the ongoing and adaptive management of the MPA.

1. Information gathering:

Information on potential threats to the MPA is likely to be included in the wider evidence collation that was discussed in the MPA Identification and Designation stage (Section 8.5).

2. Engagement:

Engage with various stakeholders, including local communities, government agencies, scientists, NGOs, and recreational users to understand their current use of the area. See Section 5 on Stakeholder Engagement for more information.

3. Assessment:

Conduct further assessments to better understand the current situation:

a. Sensitivity Assessment

i. Sensitivity can be defined as the intolerance of a species or habitat to damage from an external factor (i.e. pressure) and the time taken for subsequent recovery.[25]

ii. Sensitivity assessments are widely used for MPA conservation advice, for the development and testing of national and regional indicators, and in vulnerability assessments.

b. Vulnerability Assessment

iii. Vulnerability assessments assess the vulnerability of a specific species or habitat to specified human activities. They incorporate the sensitivity assessment of a species or habitat and additional information such as the physical extent (footprint), length of time and frequency of an activity in the area of interest.

iv. This type of assessment can be used to help identify whether certain activities will have an impact on protected habitats or species and what level of management could be appropriate.

9.2.1 Case Study: UK Sensitivity Tools

In the UK there are two main tools used to assess sensitivity:

1. Marine Evidence-based Sensitivity Assessment (MarESA)[26]

The Marine Evidence-based Sensitivity Assessment (MarESA) is used across the UK to assess the sensitivity of habitats and biotopes. Assessments are based on a detailed review of available evidence on the effects of pressures on biotopes, and a subsequent scoring of sensitivity against a standard list of pressures, and their benchmark levels of effect.

The full MarESA method is detailed in the MarESA guide.[27]

2. Feature, Activity, Sensitivity Tool (FeAST)[28]

The Feature Activity Sensitivity Tool (FeAST) is a web-based application which allows users to investigate the sensitivity of marine features (habitats, species, geology and landforms) in Scotland's seas, to pressures arising from human

activities. FeAST has been devised as a tool to be used in a variety of ways by anyone with an interest in potential impacts on marine features, for example: conservation advisers, developers, planners, and people who work in marine industries e.g., fisheries, aquaculture, marine tourism and shipping.

9.2.2 Threat prioritisation

Once the threats have been identified the next step is for management actions or interventions to be developed to reduce these threats.

Prioritising the threats helps to focus management actions on addressing the threats that pose the greatest risk to the site. This process is especially useful for sites with restricted resources and provides a record of why certain management activities are being implemented.

For small MPAs with fewer threats, prioritisation of threats can be based on expert opinion of the MPA managers or through local knowledge of the site through stakeholder engagement. For larger MPAs with multiple human activities or with more available evidence (through research and monitoring), a matrix can be used (for example Figure 12).

There are different ways of prioritising the threats and completing a matrix. One suggestion is to consider the likelihood and consequence of each threat on the five-point scales[29] (Table 6, Table 7). The threat prioritisation can be displayed as a graphic allowing the reader to visualise the information more easily. An example is shown in Figure 11.

Table 6 Example likelihood scale

Likelihood	Frequency of threat
Almost certain	Expected to occur more or less continuously throughout a year
Likely	Not expected to be continuous but expected to occur one or more times in a year
Possible	Not expected to occur annually but expected to occur within a 10-year period
Unlikely	Not expected to occur in a 10-year period but expected to occur in a 100-year period
Rare	Not expected to occur within the next 100 years

Table 7 Example consequence scale

Consequence	Description of impact
Catastrophic	Impact is clearly affecting, or would clearly affect, the nature of the ecosystem over a wide area. Recovery periods greater than 20 years likely.
Major	Impact is, or would be, extremely serious and possibly irreversible to a sensitive population or community. Recovery periods of 10 to 20 years likely.
Moderate	Impact is, or would be, serious and possibly irreversible over a small area. Recovery periods of 10 to 20 years likely.
Minor	Impact is, or would be, significant to a sensitive population or community at a local level. Recovery periods of five to 10 years likely.
Insignificant	No impact; or if impact is, or would be, present then only to the extent that it has no discernible effect on the overall condition of the ecosystem.

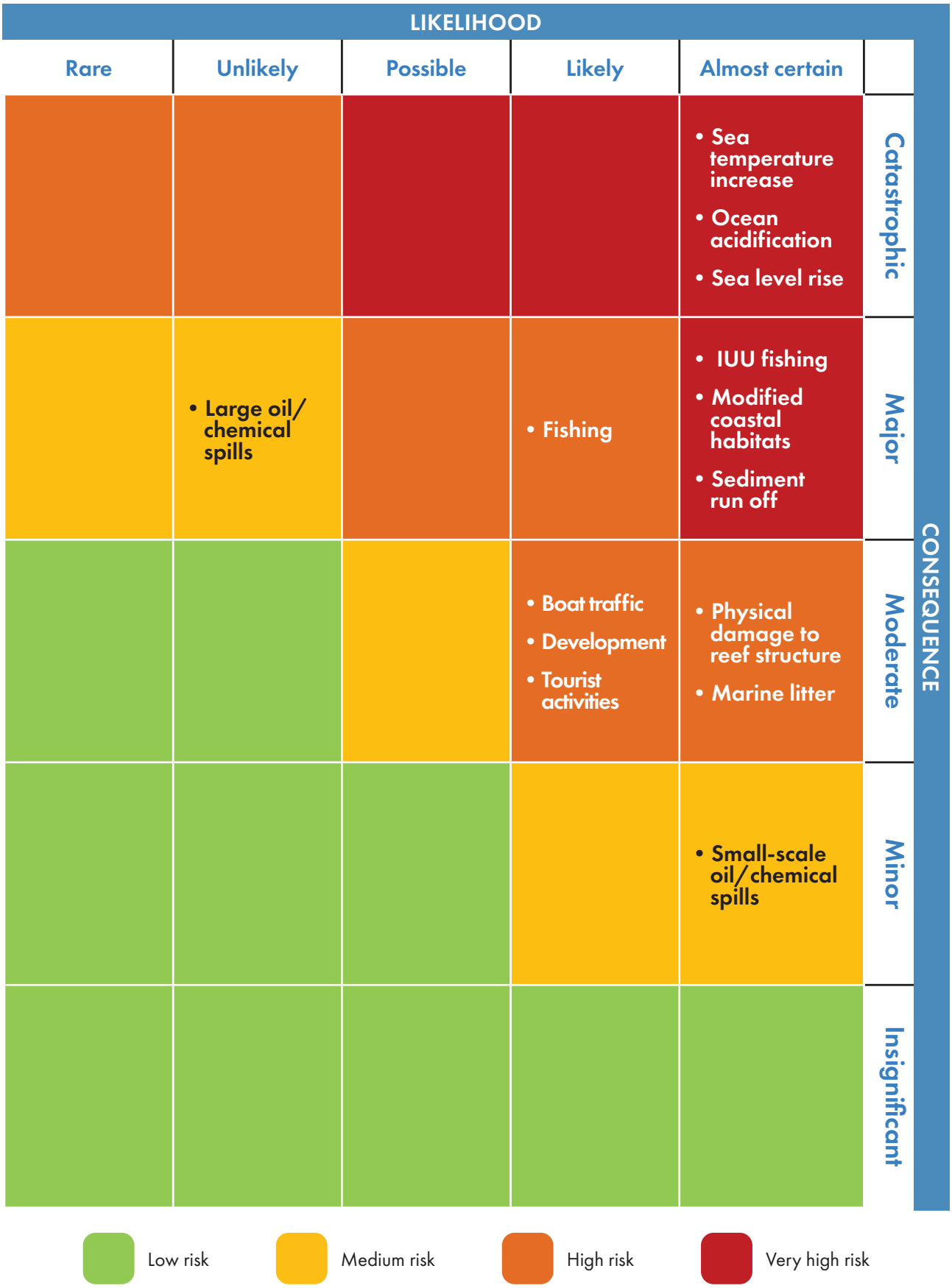
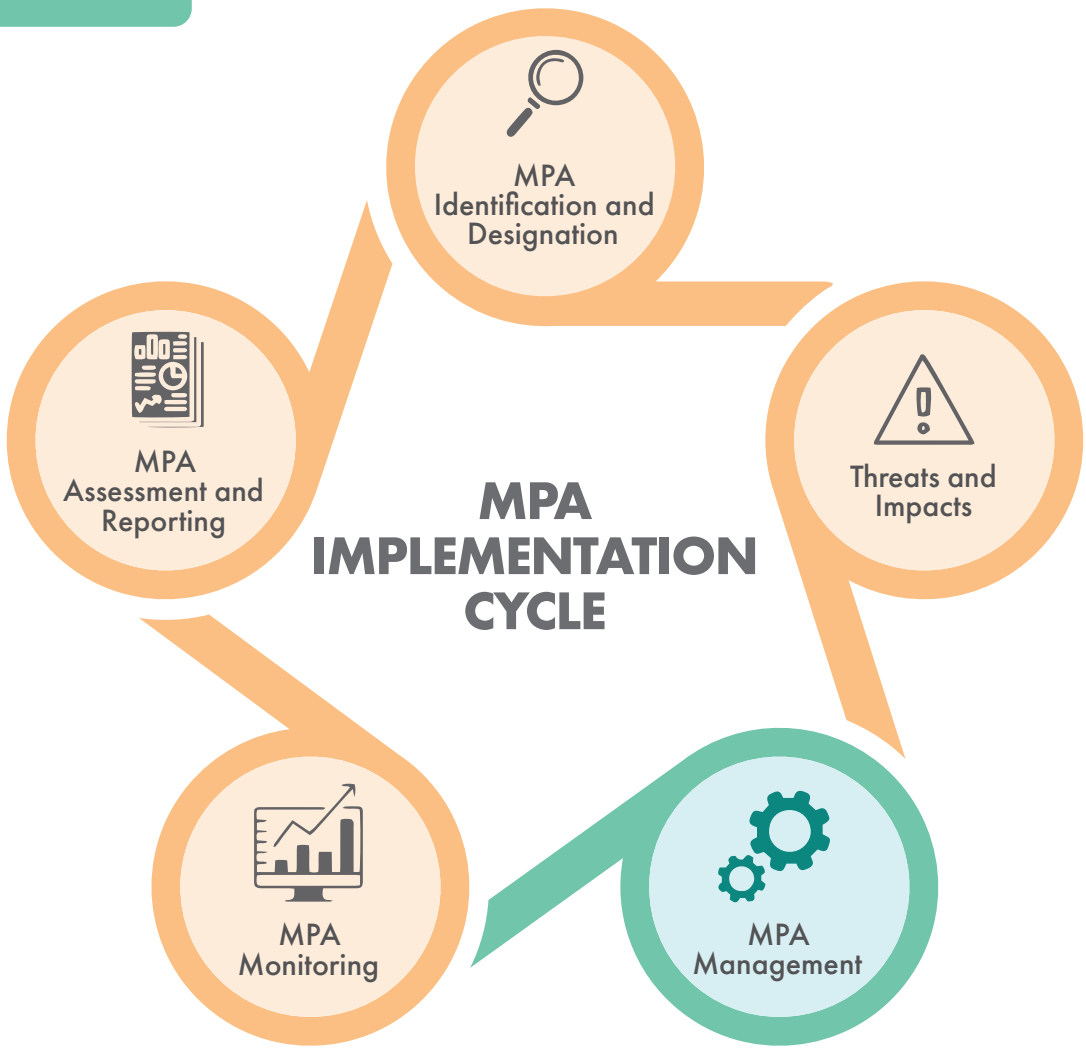


Figure 12 Example of a Risk Matrix that could be used to identify and prioritise threats to an MPA based on the likelihood and consequence of each threat occurring. The activities in the orange and red boxes are the threats that management actions should focus on if resources are limited.

10 MPA MANAGEMENT



10.1 Learning objectives

- Learn why, what and how MPAs are managed.
- Understand the importance of good management planning and the role of management plans.
- Explore the different types of management measures available and how these can be balanced with sustainable uses of the marine environment.
- Understand the importance of compliance and how enforcement can support good management.

10.2 Why do we manage?

Management actions may need to be undertaken to achieve the ecological, social, and economic objectives of an MPA, and to help ensure the sustainable use of marine resources. MPA management actions also support ensuring there is adequate resourcing for an MPA and allows monitoring to track performance.

Once threats have been identified and prioritised (Section 9), the next stage is to identify the necessary actions to reduce or remove the threats. There are some threats that cannot be controlled at an MPA level, for example, natural threats or climate change impacts (coral bleaching or increased storms). Therefore, management actions often focus on the human activities, which

are easier to influence and control. By managing these human activities and reducing their impacts, it increases the resilience of the protected marine ecosystems, habitats and species to those threats and impacts that cannot be controlled.

To understand what management measures are appropriate, consideration needs to be given to:

- The ecological, social and economic objectives of the MPA.
- The threats and pressures impacting the MPA.
- The governance structure in place for the MPA and resources (such as personnel, funding and equipment) available to manage and enforce.
- Local stakeholder use of the MPA and wider marine environment.
- The legislation and policies that are in place to support management.

10.3 Management Principles

Creating a well-managed MPA requires a holistic approach that integrates ecological, biological, social and economic considerations. This approach cannot be successful without proper legislation, a functional institutional framework, sufficient capacity, financial resources effective evidence base and the active engagement of stakeholders that support the approach.

Management principles can help guide how MPAs are managed. These principles can be used to aid decision-making by the MPAs management authority to support sustainable development and collaboration between the authorities and local communities. Management principles can be largely split into two subcategories - Ecological Principles and Social Principles. They should be developed as part of the management planning process to ensure they are specific, appropriate and ideally agreed by all stakeholders.

10.3.1 Ecological Management Principles

The principles below are provided as an example and were developed for the Maldivian Government as part of their management planning process supported by the OCPP.[30]

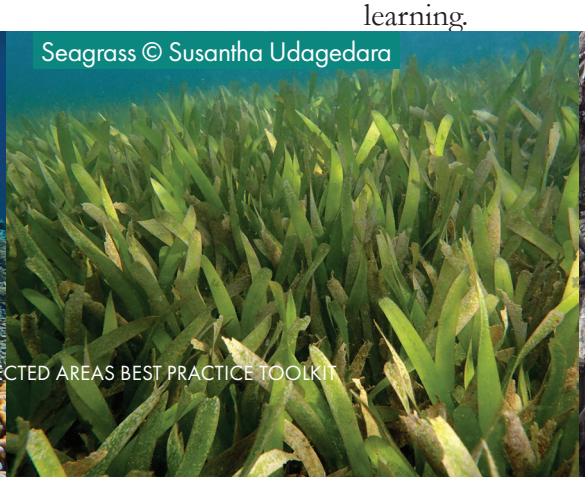
Ecosystem approach

An ecosystem approach is defined by the CBD as "a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way".[31] The ecosystem approach requires that the management of resources be applied to wider ecosystems rather than to individual species and that their management should be decentralised to the lowest appropriate level. The ecosystem approach also recognises the importance in maintaining the linkages and connectivity between component elements of the ecosystem (e.g., mangroves, seagrass beds and coral reefs). The application of this principle means that, for example, protecting a single reef alone will not be effective unless other reefs and associated habitats are also protected.

Adaptive and evidence-based management

Adaptive and evidence-based management is a participatory approach to management and is a particularly useful framework when there are multiple uncertainties or evidence gaps relating to the ecosystem or activity. It is a cyclical process which starts with a problem or management challenge being identified. Management is then designed based on existing evidence, often using a stakeholder led participatory approach. Once management is agreed and implemented, its performance is monitored through an evidence-based approach, and its success evaluated. The results of the evaluation can then influence potential redesign of the management measures, adjusting decisions based on technical learning.


Butterflyfish © Jamie Small


Seagrass © Susantha Udagedara

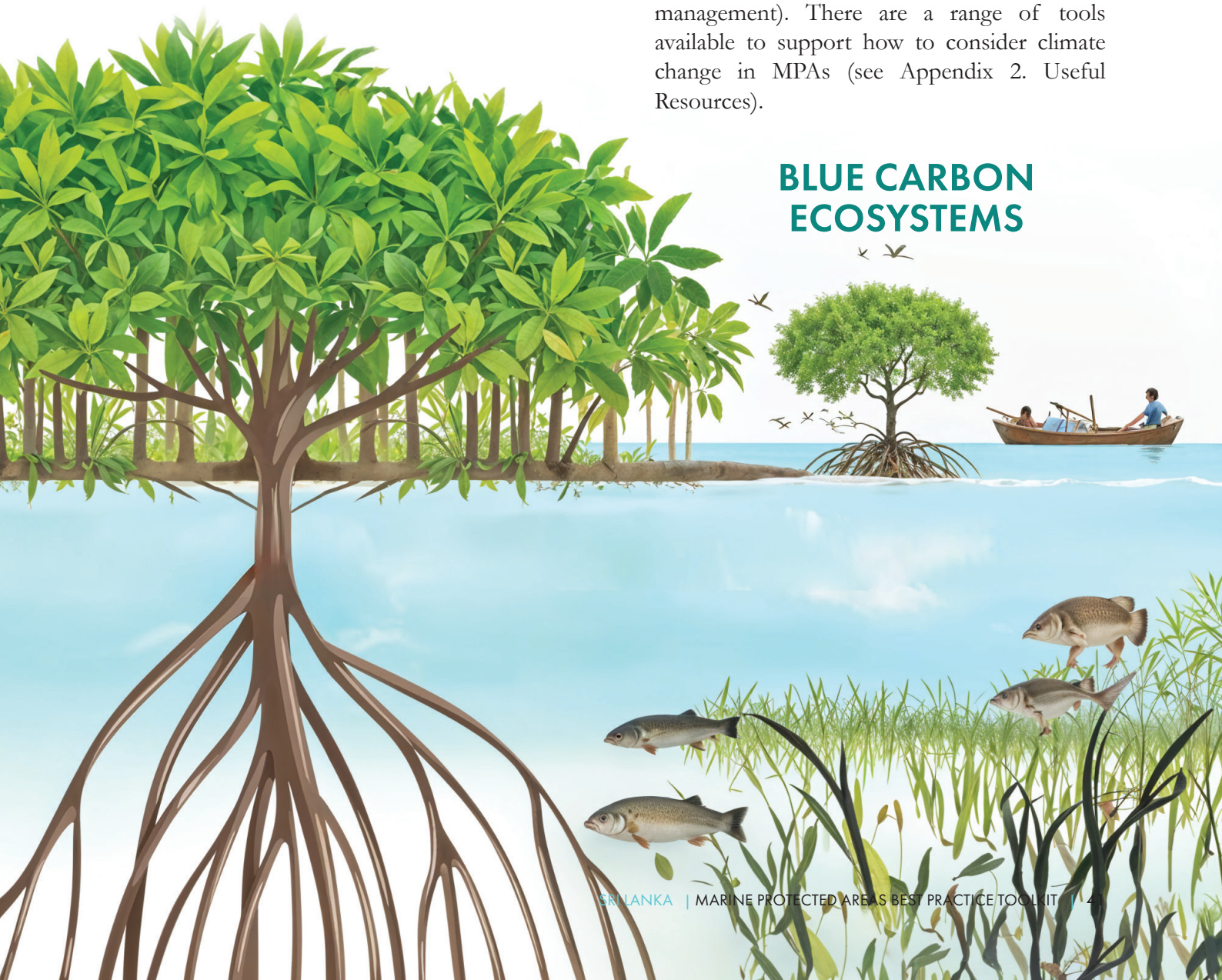

Mangroves © Jagath Kanahararachchi

Precautionary principle

Provides a critical safeguard for the sustainable utilisation of natural resources and for achieving environmental balance by managing risk for policy or decision makers. It ensures that if there are reasonable grounds for concern that any activity may cause harm to the environment, preventive measures should be taken in anticipation of the risk, even if scientific evidence is insufficient, inconclusive, or uncertain. It therefore gives policy / decision-makers the option to decide to restrict activities in situations where there is scientific uncertainty. The precautionary principle should be considered as part of a structured approach to an environmental risk assessment. It provides a framework for assessing situations where there is a plausible risk of environmental impact from activities and scientific uncertainty surrounding the evidence base about the environmental impact of those activities.[32]

Climate Change Aware

It is increasingly important to integrate climate change considerations into the design and management of MPAs. MPAs cannot halt the effects of climate change (e.g., ocean warming, acidification, sea level rise, increased frequency of coastal storms) but they can be used as a mitigation and adaptation tool to manage marine biodiversity in response to climate change and increase resilience to climate shocks. Research has shown that the solutions to help tackle climate change, such as increasing carbon sequestration and natural coastal protection, can be improved in fully or highly protected MPAs.[33] Site designation should consider climate change mitigation (e.g., protection of blue carbon ecosystems) and adaptation mechanisms (e.g., protecting climate refugia, increasing connectivity between MPAs or implementing buffer zones, reducing other stressors and ensuring adaptive management). There are a range of tools available to support how to consider climate change in MPAs (see Appendix 2. Useful Resources).



10.3.2 Social Management Principles

Sustainable development

Any activities within MPAs must have minimal impact on marine biodiversity, habitats and ecosystems and must bring equitable positive benefits to local communities. A holistic approach to management should consider multiple activities, balance environmental, socio-economic and cultural objectives, and apply the principles of ecosystem-based management. This will ensure that activities within the MPAs meet the needs of the present, without compromising the ability of future generations to meet their own needs.

Stakeholder and collaborative engagement

Stakeholder engagement is essential throughout the MPA designation and management processes. Engagement and capacity-building initiatives have the potential to empower stakeholders, promote collaboration, create a culture of marine stewardship and encourage alternative and sustainable livelihoods.[34] How management authorities engage with their stakeholders may be different for each site, usually a combination of public meetings, workshops, consultations, information brochures, individual interviews, surveys and site advisory committees are used. Inclusivity and equity requires all stakeholders to be engaged in the decision-making process.

Equitable management

MPAs can generate a flow of benefits for local communities and stakeholders including improved fisheries catches, sustainable livelihoods and ecosystem services. However, there may also be costs to the local communities, especially in the short-term when management is initially implemented.[34] It is important to ensure that these impacts (both positive and negative) are considered when planning management. This will ensure that local communities are not unnecessarily impacted by management actions and the benefits of an MPA are shared fairly and equitably amongst local communities and stakeholders.

10.4 Management Measures and Tools

Management measures describe the actions that are taken to make progress towards achieving MPA objectives. Deciding the correct management measure to take forward requires considering the MPA objectives, the prioritised threats, the management principles (if identified), the potential constraints (such as resources) and impacts the management will have (ecological and socio-economic).

It is important to consider:

- Whether the proposed actions will contribute to achieving the objectives.
- The identified constraints and whether the actions are realistic in the timeframe (considering staff time and resources).
- The management implications of each action.
- How acceptable the options are to politicians and the wider public.

There are a range of management tools, typically used in combination, that managers can use to manage the human impacts within their MPA (Table 8).

Such approaches are used to regulate access and avoid or minimise impacts associated with certain activities (such as recreation, tourism, fisheries or shipping) or to address pressures (such as overfishing or disturbance to sensitive marine species). Different tools may be appropriate for different sites and the level of management required will be dependent on the MPA objectives and the level of protection afforded e.g., multiuse or strict 'no take' for recovery purposes. Routine patrols and remote monitoring (such as using Video Management Systems on vessels) should be undertaken regularly to encourage and ensure compliance with the management tools (Section 10.5).

Table 8 Examples of management tools that can be used to support the objectives of an MPA.

Tool	Purpose
Zoning	• Ensure strict protection of a core zone, or zones as part of a larger multiple use MPA. • Provide protection for critical species and habitats whilst enabling sustainable human activities to continue in less sensitive areas. • Agreed during the planning stage. Clear demarcation of boundaries should occur. Zones can be incorporated into legislation or be on a voluntary basis. A zoning plan should be developed to identify the main objectives for each zone and defined by the activities that are allowed to operate within it.
Permits/licences *Type of activity* *Number of users* *Specify where/when activities can take place* *Conditions for activity*	• They regulate the types of activities allowed within an MPA and set out formal rules about how an activity can operate within an MPA. • They can be issued for a limited period or can be subject to renewal. • May require an environmental impact assessment in advance of decision making on the application. • Consider the cumulative impacts of different activities operating within an MPA. • Can be revoked if there is non-compliance with conditions and if any environmental impacts are caused by the activity. • Can include a requirement for some form of reporting and provide valuable data on human use patterns within the MPA over time which can be used to support effective management.
Voluntary measures *Codes of conduct/best practice guidance*	• Promote responsible behaviour. • Provides sense of responsibility to the users.
Education and awareness raising *Outreach activities* *Signage and communication materials*	• Promote responsible behaviour. • Include a range of stakeholders. • Encourage support and ownership of the MPA.

10.5 Compliance and Enforcement

Compliance management is another crucial part of effective MPA management, making sure that any individuals or users interacting with the MPA do so in accordance with legislation, regulations, permit conditions or lawful instructions. Numerous reviews[36,37,38] have found that insufficient enforcement and consequently illegal activities operating within an MPA is one of the main reasons for lack of MPA effectiveness. Whereas MPAs that are well enforced provide much greater conservation benefits. However, sometimes MPAs provide real challenges for compliance and enforcement due to their remote location or strict management, which means monitoring and surveillance is difficult and very expensive.

It is important to define and set out what compliance measures will be put in place to ensure that the site rules, regulations or permit conditions are complied with by all users.

Different approaches for ensuring compliance should be considered. For example:

- Encouraging voluntary compliance through stakeholder engagement and education programmes.
- Active monitoring and surveillance including routine patrols by enforcement officers and the use of technology to enhance enforcement. For example, assessing if remote sensing imagery could support identification of vessels in locations they shouldn't be.
- A graduated enforcement response starting from education, moving to warnings and then through to legal action.
- To ensure stakeholders and communities are aware of management measures the following information should be publicly available e.g., included in the MPA management plan:
- Information on which organisations are responsible for compliance and enforcement, how they interact and what enforcement powers they have.
- Implications for offences if using a graduated enforcement approach.
- Relevant legislation.
- Outline how information on enforcement actions taken will be recorded and reported.

10.6 Management Plans

Management plans should be succinct documents that identify the key features or values of the MPA, clearly establish the management objectives to be met and indicate the actions to be implemented. They also need to be flexible enough to cater for unforeseen events which might arise during the implementation of the plan.[39] A good management planning process which has the support of the staff and local people provides many benefits to the MPA and those who rely upon its good management including:

- More effective management where management decisions are based on a clear understanding of the MPA, its purpose and the important resources and values associated with it.
- A framework to guide the day-to-day operations and long-term management of the site.
- A useful document for new staff and stakeholders to understand the vision of the MPA and maintain the direction of management.
- Specific and measurable objectives that can help determine whether management is effective or whether changes in management are required.
- Improved use of financial and staff resources by prioritising management actions.
- Improved communications between MPA managers, stakeholders and communities.
- A mechanism for increased accountability on how the MPA will be managed, and by who.

Each management plan is unique and should reflect the individual needs of the site, however, there are some key components typically included in a management plan[17]:

Introduction and background

Provides a brief overview of the MPA, designation process, organisations or stakeholders involved and legal and policy context. This section also highlights the purpose and scope of the management plan.

Description of the site

» Presents a comprehensive description of the MPA's physical, biological and cultural characteristics, including landform, climate, habitats, species, ecological processes and associated threats, historical and religious features

» Summarises existing uses, both within and near the MPA.

Key values of the MPA

provides an overview of the key values for nature conservation and the associated ecosystem services and cultural values i.e., why the MPA is important, both to local communities and our broader society.

Constraints, opportunities, threats

The constraints on management should be identified, as should any major threats to the site's values.

Vision, Goals, and Objectives

Define a vision statement that describes the desired future state of the MPA. Establish specific goals and objectives that align with the vision, addressing conservation, sustainable use, stakeholder engagement, and other relevant aspects.

Governance

Identify relevant legislation and policy. Define the relevant organisations responsible for management, including who is responsible for what.

Management measures and actions

Outlines the specific management measures and actions required to achieve the stated goals and objectives. This may include regulations, enforcement strategies, fisheries management, pollution control, habitat restoration, research programs, and educational initiatives. Measures and actions must align with conservation objectives and be practical, feasible and enforceable (if applicable).

Stakeholder engagement and participation

Describes strategies for engaging and involving relevant stakeholders throughout the MPA management process. This includes local communities, indigenous groups, fishers, scientists, government agencies, non-governmental organisations, and tourism operators. Addresses mechanisms for consultation, collaboration, and building partnerships to foster effective co-management.

Communication and education

Considers steps to take to communicate the objectives and benefits of the MPAs to stakeholders. This not only includes the environmental benefits but the socio-economic benefits.

Compliance and enforcement

Defines the mechanisms for ensuring compliance with MPA regulations and management measures. Identifies responsible authorities, enforcement strategies and monitoring programs. Considers the capacity-building needs of enforcement agencies and the engagement of local communities as stewards of the MPA.

Monitoring and evaluation

Establishes a monitoring and evaluation framework that enables an adaptive management framework. This will allow the assessment of effectiveness of management actions and progress towards conservation objectives. Identifies key indicators, data collection methods, reporting mechanisms, and review cycles.

Resources

Identifies the financial and personnel resources, infrastructure and equipment required for implementing the management plan.

Implementation timeline and responsibilities

Develops a timeline for implementing the management plan, including the sequencing of actions and key milestones. Clearly defines the roles and responsibilities of relevant stakeholders, agencies, and organisations involved in MPA management.

10.7 Case Study- Dogger Bank MPA Management, UK

The Dogger Bank MPA is located in the UK's Southern North Sea, and protects the largest sandbank in UK waters, extending into both Dutch and German waters. The MPA covers an area of 12,331km^2, with water depths ranging from 13m - 58m below sea level. The sandbank provides habitats for fish species such as cod, plaice, common skate and angel shark. It is an important location for sandeels, which are a vital food source for seabirds and marine mammals. A considerable number of oil and gas developments and renewable offshore wind farm turbines overlap with the MPA, and it is an important area for commercial fisheries.

The condition of the sandbank was assessed and found to be in unfavourable condition. A conservation objective for the MPA was set to restore the sandbank to favourable condition.

To assess threats to the restoration of the sandbank, a detailed evaluation of fishing activities in the MPA was conducted using data from landings records, vessel monitoring systems (VMS), and fisheries sightings. The analysis concluded that bottom towed fishing gear was incompatible with MPAs conservation objective. As a result, multiple management options were developed.

A public call for evidence was held to seek stakeholder views on the proposed management options. Stakeholders could also submit additional data for review. The three management options considered were:

1. No fisheries restrictions
2. Reduce/limit pressures from bottom towed fishing gear (e.g., introduce zoned management approach)
3. Remove/avoid pressures from bottom towed fishing gear via a whole site prohibition.

All stakeholder responses were reviewed and evidence used to update the fishing assessment. The final assessment concluded that option 3 (remove/avoid pressures from bottom towed fishing gear via a whole site prohibition) was the preferred option.

A formal consultation, lasting 8 weeks, was then held based on a whole site prohibition (Figure 13). The final decision by the UK Government, considering all the evidence and stakeholders views, was to introduce a bottom towed fishing gear closure across the whole MPA was implemented in June 2022.[40]

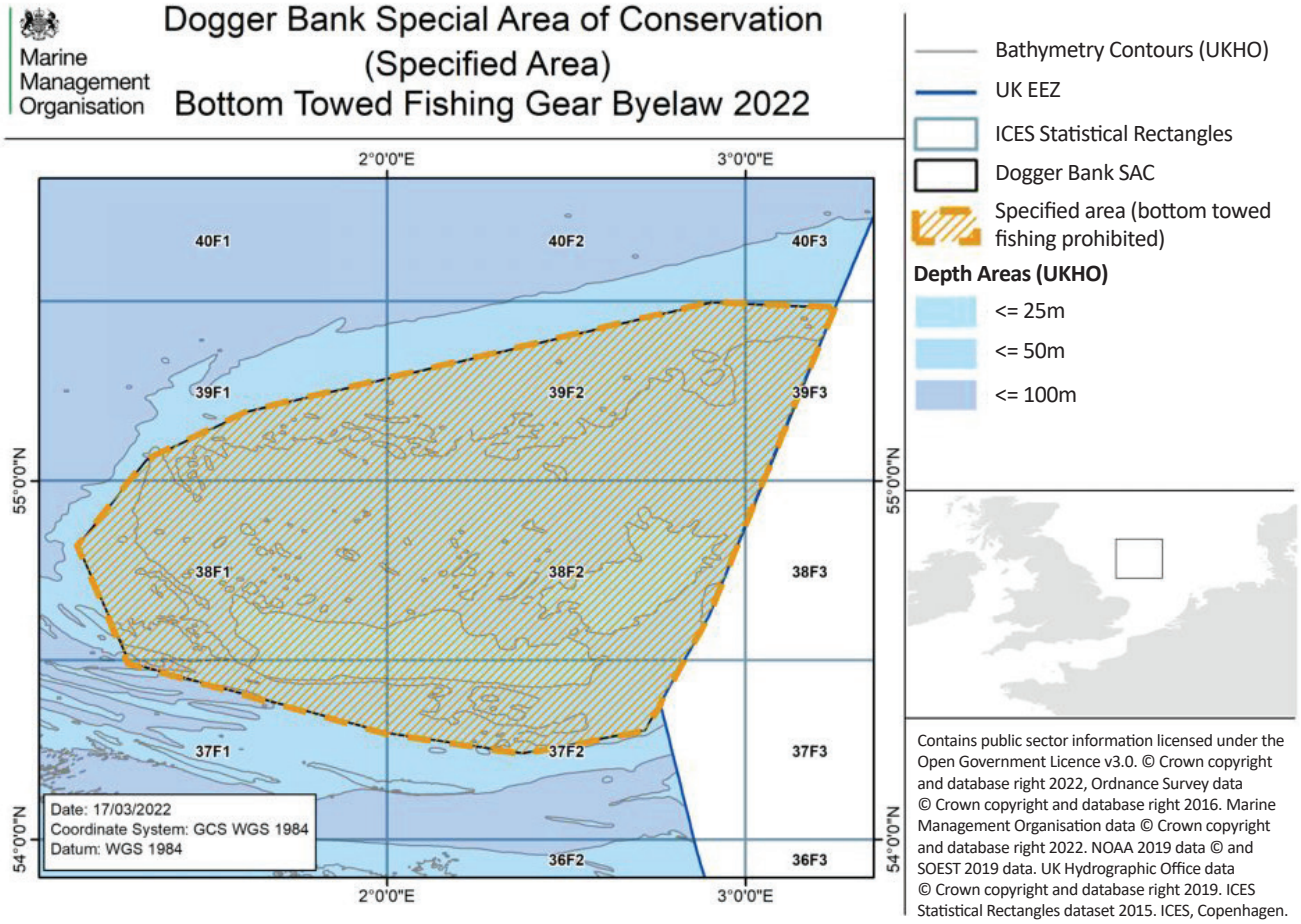


Figure 13 Dogger Bank MPA fisheries management proposal, as consulted on by the UK government in 2022.

10.8 Case Study- Managed Access Programme, Belize

Belize's Managed Access program is unique as it is a multispecies fishing rights system that applies to the entire territorial waters of Belize (Figure 14).[41]

It is a rights-based programme that regulates coastal fishing access in waters both within and outside MPAs. Marine Reserves in Belize have a zoned approach (Table 9), each consisting of multiple defined zones (generally Preservation / Replenishment, Conservation, General Use and, in one case, Special Management Zones). Protection Zones are non-extractive, whilst Conservation Zones allow sport and recreational fishing, as well as other recreational uses. The General Use Zones are open to licensed commercial fishermen using traditional fishing methods, based on customary use area under the Managed Access program.

A licensing system limits the areas in which fishers can fish and establishes catch limits for commercial species including lobster, conch, some fin fish and more recently sea cucumber (Holothurians). Program effectiveness is measured via collection and analysis of catch data from licensed fishers in the short-term, and the biological response and economic outcomes in the long-term.

The Belize Government is committed under the Belize Blue Bond,[42] to undertake an independent review of the Managed Access Programme to re-evaluate its effectiveness since establishment. OCPP are undertaking this review on behalf of the Belize Government, interviewing a range of stakeholders, with a focus on fishers and the implementing government authorities, to collate evidence and opinions. Recommendations will be provided to the Belize Government to improve the programme effectiveness and sustainability for the future.

Table 9 Zones found within Marine Reserves in Belize

Zone	Typical Use
General Use	Artisanal / commercial fishing is permitted. Bottom trawling and gill net use banned across Belize's territorial waters. Artisanal/ commercial does not allow fishing with the use of SCUBA or spear guns.
Conservation	Only non-extractive activities are permitted, including sport fishing and SCUBA.
Seasonal Closure	Seasonal closure for fisheries to protect spawning sites.
Preservation / Replenishment	No extraction.

Belize Blue Bond © D KL Chan

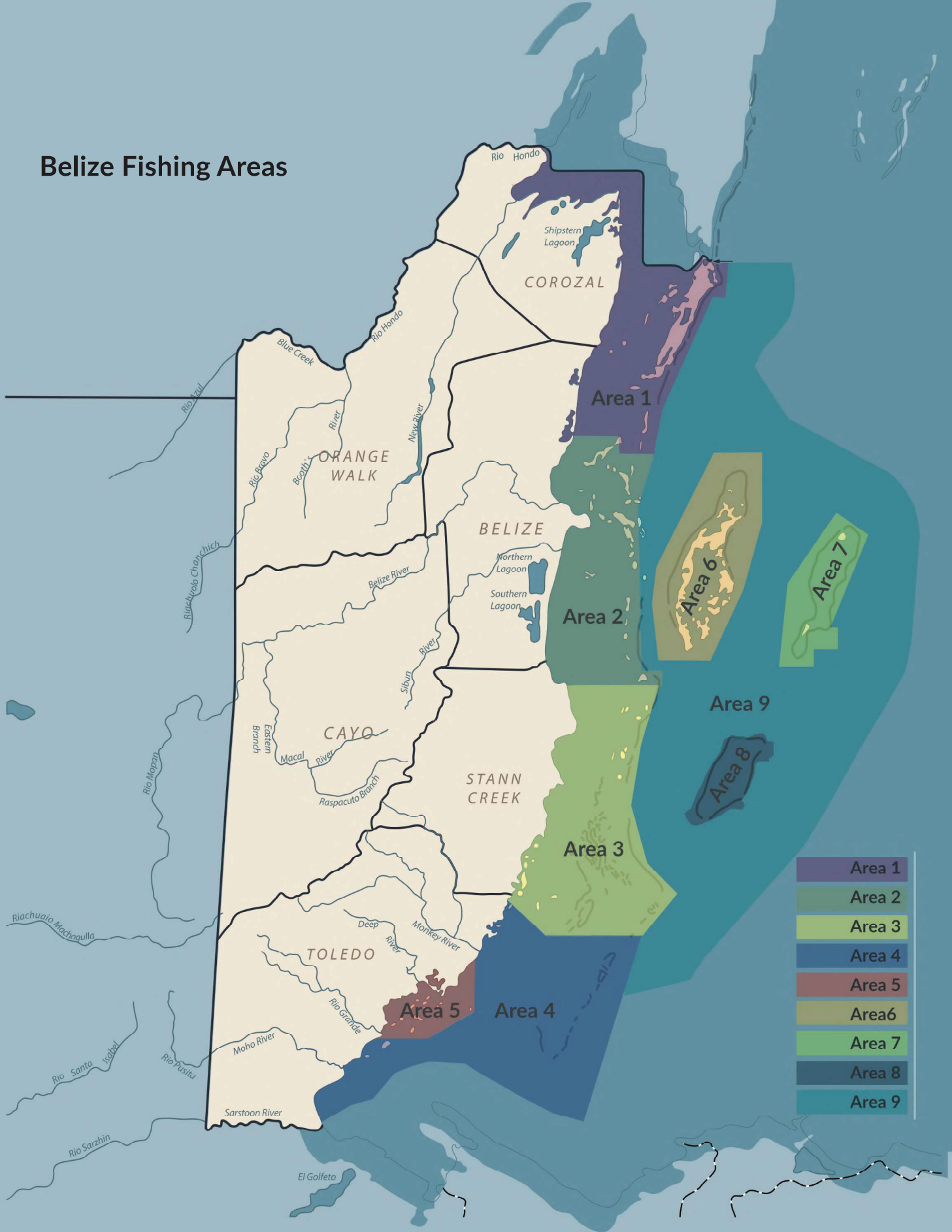
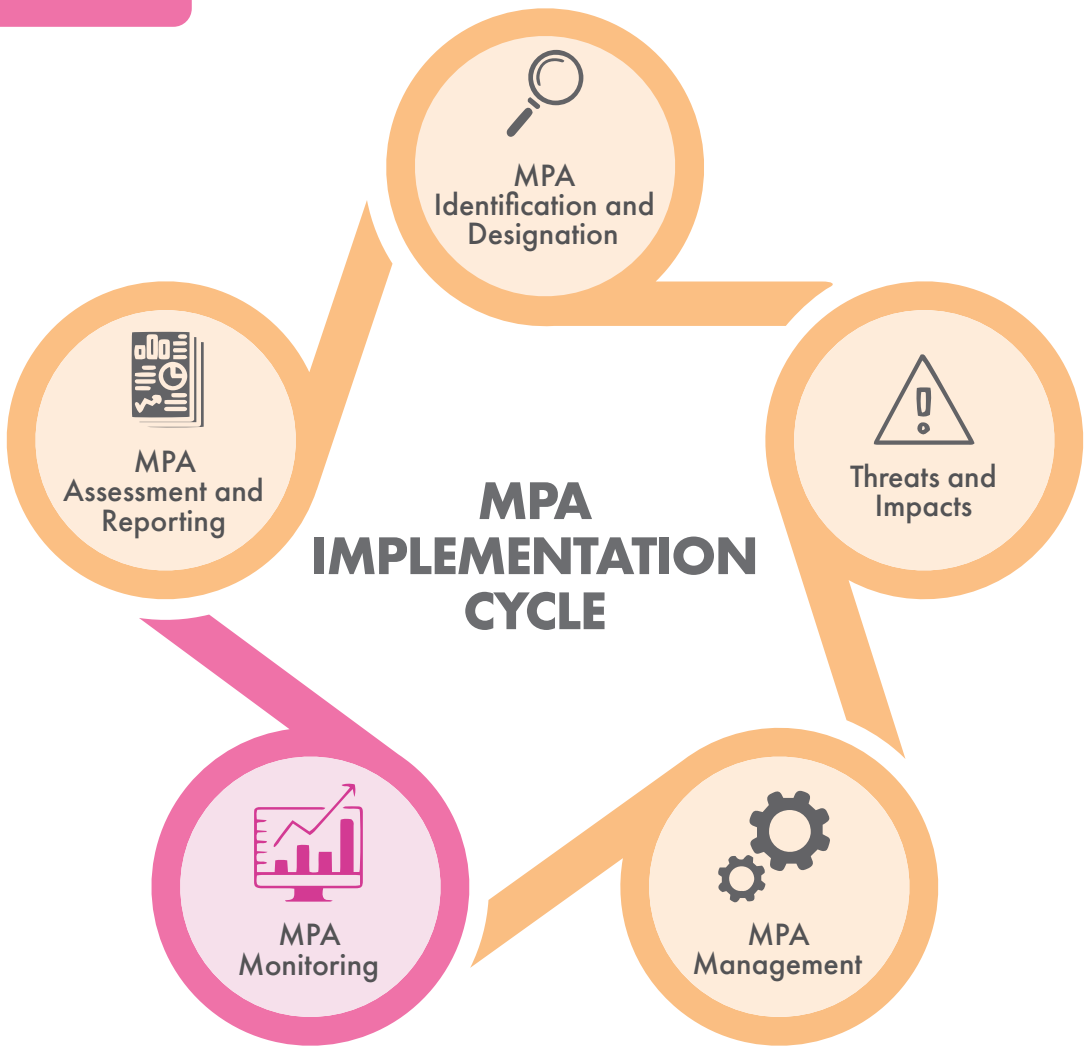


Figure 14 Managed Access areas in Belize. Map of the fishery zones implemented in 2016 under the managed access fisheries scheme. Commercial fishers are given access to two zones, selected by their own choice.[43]

11 MPA MONITORING



11.1 Learning objectives

- What, why and how to monitor.
- The different types and approaches to monitoring.
- Challenges associated with monitoring.
- The use of indicators.

11.2 What is monitoring?

Monitoring of MPAs involves the systematic collection and analysis of data to assess the status and effectiveness of these designated areas. Measuring and tracking ecological, socio-economic and management-related evidence and indicators.

11.3 Why do we monitor?

MPA monitoring plays a crucial role in the MPA Implementation cycle by providing insights into ecological changes, human activity impacts, and MPA management effectiveness over time.

Monitoring helps:

Assess conservation objectives:

- Helps evaluate whether conservation goals and objectives are being met or what the progress is towards achieving the objective, informs adaptive management strategies, and ensures the sustainable protection of marine ecosystems and biodiversity within MPAs.
- Provides feedback for adaptive management of the MPA by identifying necessary adjustments to management strategies and objectives.

Evaluate ecological health and resilience:

- Assess the status of key ecological indicators (described in Section 11.7).
- Tracking changes can help identify long-term trends and potential threats or pressures on marine ecosystems.
- Leads to more effective conservation and management actions through the feedback and incorporation of data.

Measure socioeconomic benefits and costs:

- Helps understand the interactions and impacts of MPAs on local communities and economies.
- Can include a cost/benefit analysis, ecosystem service valuation or stakeholder and local community engagement.
- Feeds into MPA planning and management to ensure a balanced approach:
  - » Ecological conservation, economic sustainability, and social well-being.
  - » Promotes inclusive decision-making processes and strengthens support.

Enhance management and policy decisions:

- Supports evidence–based decision making and policy development.
- Can highlight success or failure of specific management strategies.
- Adaptive management.
- Monitor management effectiveness.

11.4 Monitoring approaches

MPA monitoring encompasses various approaches designed to assess the effectiveness of conservation efforts and ensure the sustainable management of marine ecosystems.

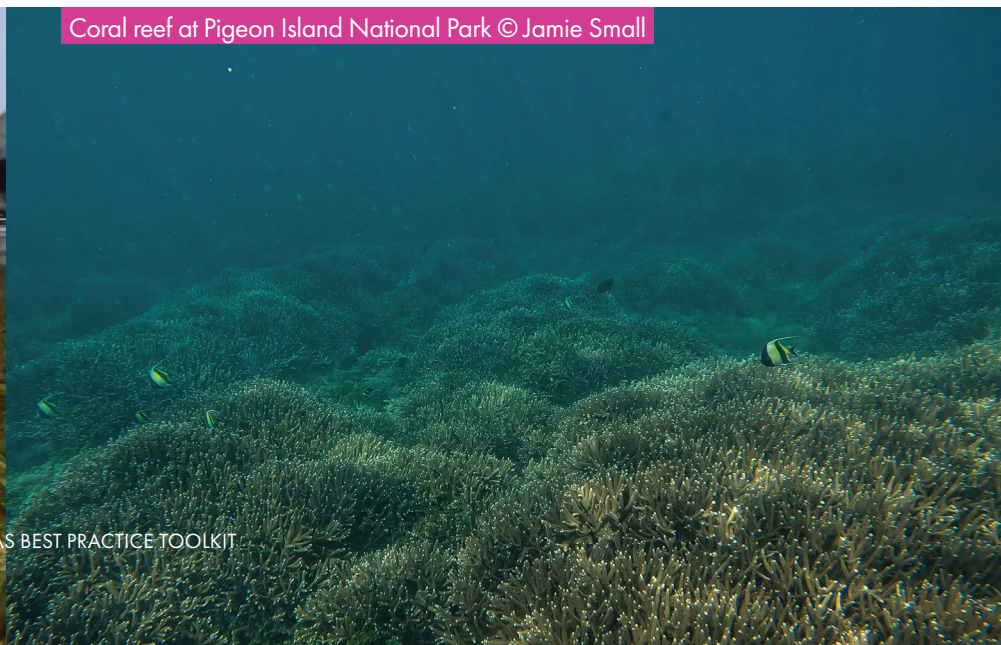
The right monitoring approach will depend on the conservation objectives of the MPA, the available resource and whether indicators and other tools are available.

The choice of monitoring approaches should consider the following:

- What are you trying to monitor?
- Does it have variable distribution in time and space? Is it static or mobile?
- What evidence/data do you already have?
- What are the threats or pressures?
- Do you have a reference site?
- Is management already in place?
- What resource and timing constraints are there?
- Are there standard methods or protocols that should be followed?

Using a range of methods enhances the evidence collecting and the ability to adaptively manage MPAs, ensuring the long-term sustainability of marine ecosystems. Table 10 provides an overview of the main types of monitoring.

Seagrass © Susantha Udagedara



Coral reef at Pigeon Island National Park © Jamie Small

Table 10 Common monitoring approaches and their potential uses and benefits.

Type of Monitoring	Description	Benefits	Uses
Field Surveys and Sampling	Conducting direct observations, underwater surveys, and biodiversity assessments.	Provides detailed information on species composition, abundance, and distribution. Allows for the assessment of habitat quality, including coral cover, seagrass extent, and mangrove health.	Evaluating the effectiveness of conservation measures in protecting key species, habitats and ecosystems. Monitoring changes in biodiversity over time and assessing the overall health of the ecosystem.
Remote Sensing Technologies	Utilises satellite imagery and other remote sensing tools to gather data on the physical and biological characteristics of MPAs and human activities in the area.	Enables large-scale and frequent monitoring of vast marine areas. Provides data on sea surface temperature, chlorophyll concentration, and other environmental parameters. Provides data on human activities in the area (vessels present)	Detecting changes in oceanographic conditions and identifying areas prone to coral bleaching or harmful algal blooms. Assessing the spatial extent and health of marine habitats. Can support the assessment of presence and distribution of human activities.
Citizen Science and Stakeholder Engagement	Engaging local communities, fishers, industry and other stakeholders in data collection and monitoring activities.	Enhances community participation and ownership in MPA monitoring. Increases the amount of data collected and expands the spatial coverage, often at minimal cost.	Gathering traditional ecological knowledge and incorporating local perspectives into monitoring efforts. Allows monitoring of socio-economic aspects of MPAs including impacts of management and progress on cultural, social and economic values of the MPA.
Genetic and Molecular Techniques	Molecular tools, such as DNA analysis and genetic markers.	Provides insights into genetic diversity, connectivity, and resilience of marine species. Helps identify species or populations at risk and assess the impact of human activities.	Understanding population dynamics and informing conservation strategies, such as designing effective networks of MPAs. Investigating the effectiveness of MPA zoning and management strategies in protecting genetic diversity and preventing overfishing.
Desk-based Reviews and Analysis	Reviews of available evidence and raw evidence analysis.	Translates raw monitoring data into usable trends and figures. Allows collation of previous evidence to inform current processes and may reduce current monitoring requirements.	Can be used across MPA monitoring, including ecological monitoring but also socio-economic monitoring.

11.5 What are indicators?

Indicators, in the context of MPAs, refer to specific metrics or parameters used to measure and track environmental changes (Table 11). These metrics serve as a valuable tool for answering various questions related to an MPA. Using indicators can streamline monitoring efforts.

By employing indicators, MPA managers can evaluate the condition of habitats, species, and ecosystems, analyse species distribution across time and space, and gauge the impact of human activities, contributing to a comprehensive understanding of the MPA's ecological dynamics.

Figure 15 shows an example of indicators, metrics and associated monitoring activities for an MPA for which the conservation objective is to maintain the seagrass in favourable condition.

Table 11 Example of biodiversity, habitat and human activities indicators.

Indicator theme	Types of indicators
Biodiversity indicators	Species richness, diversity indices, population abundance
	Presence and health of keystone species
	Changes in composition of ecological communities
Habitat indicators	Cover, extent or health of a habitat-forming species (coral cover, seagrass extent, health of mangroves)
	Physical characteristics (substrate complexity, …)
	Sedimentation rates and water clarity
Human activities and pressure	Fishing effort, catch composition
	Pollution levels (e.g. nutrient runoffs, oil spills, …)
	Tourism, recreational activities


Coral reef © Jagath Kanahararachchi


Coral reef © Jamie Small


Mangroves © Susantha Udagedara


Fishing © Ruwan Walpola


Fishing © Ruwan Walpola

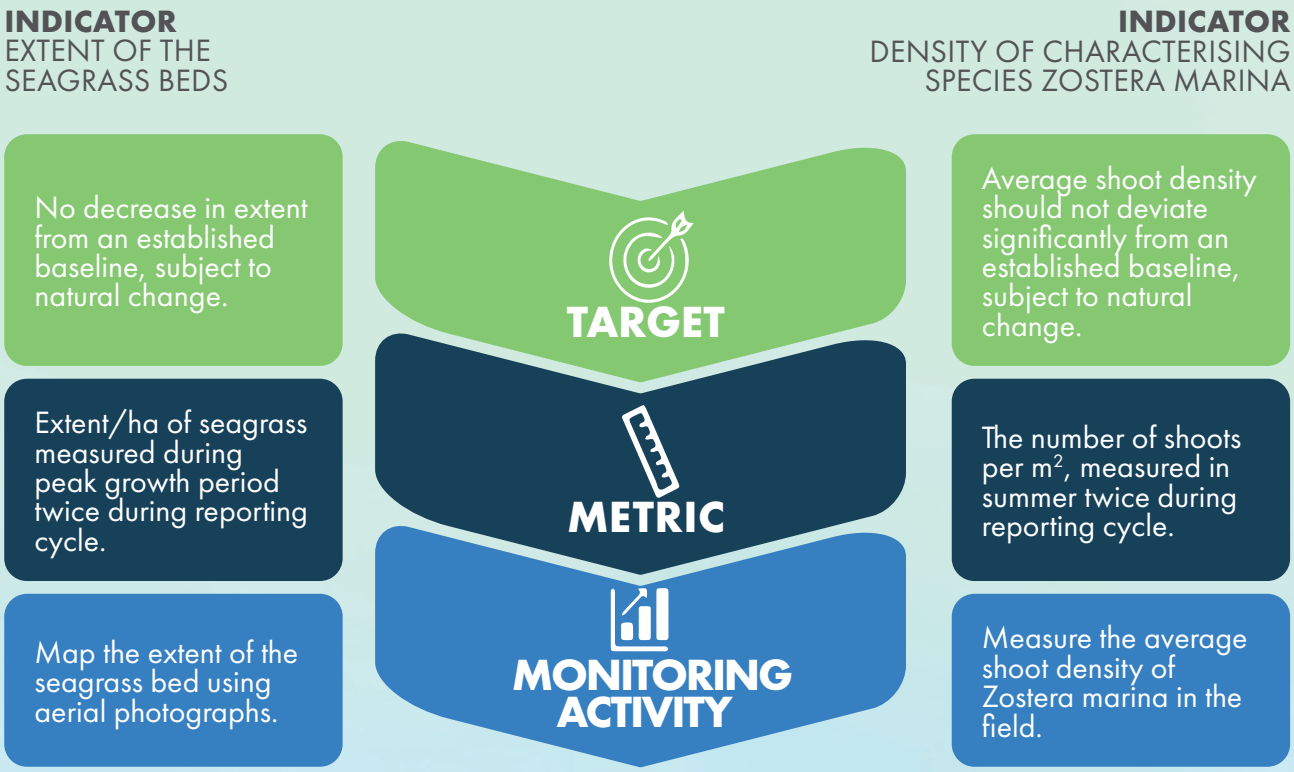
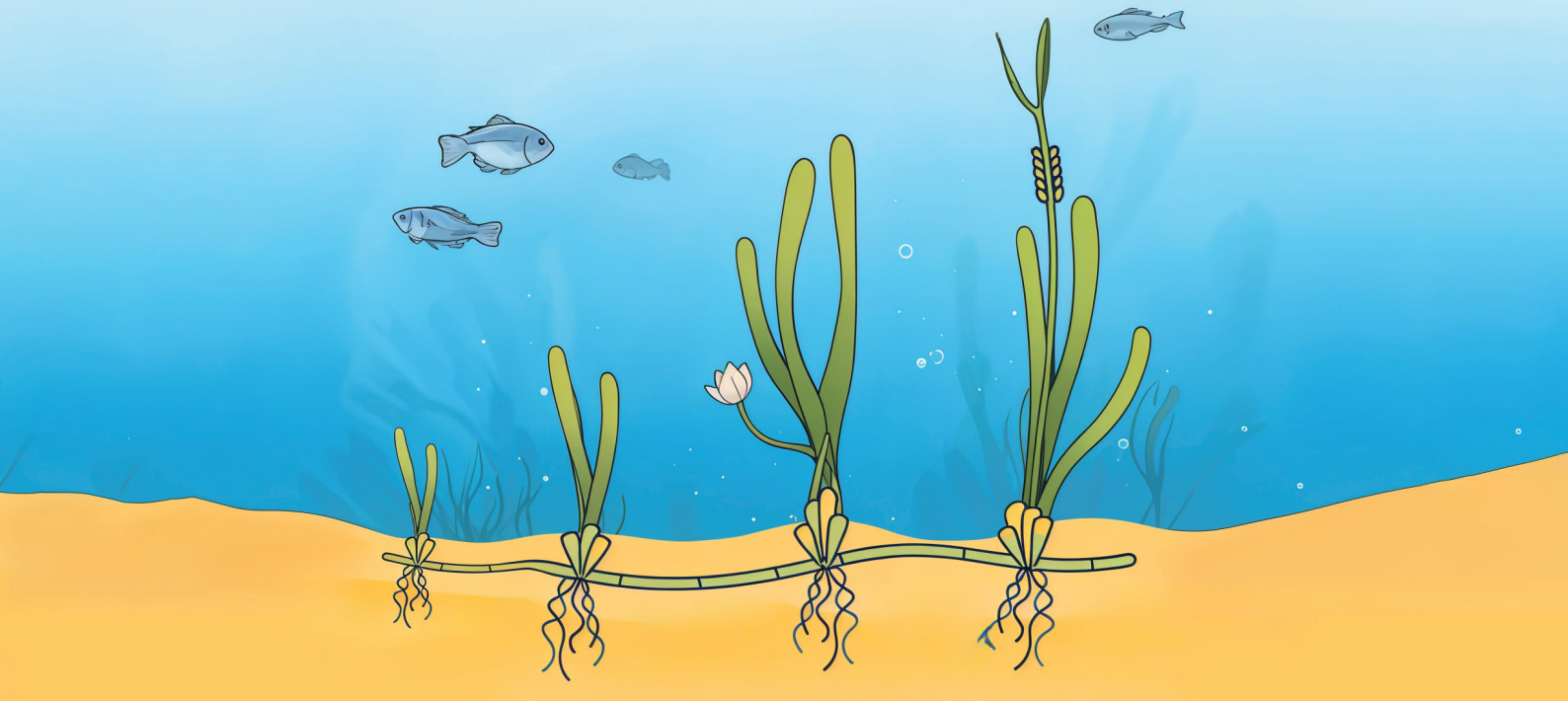


Figure 15 Example of indicators for monitoring seagrass habitats.

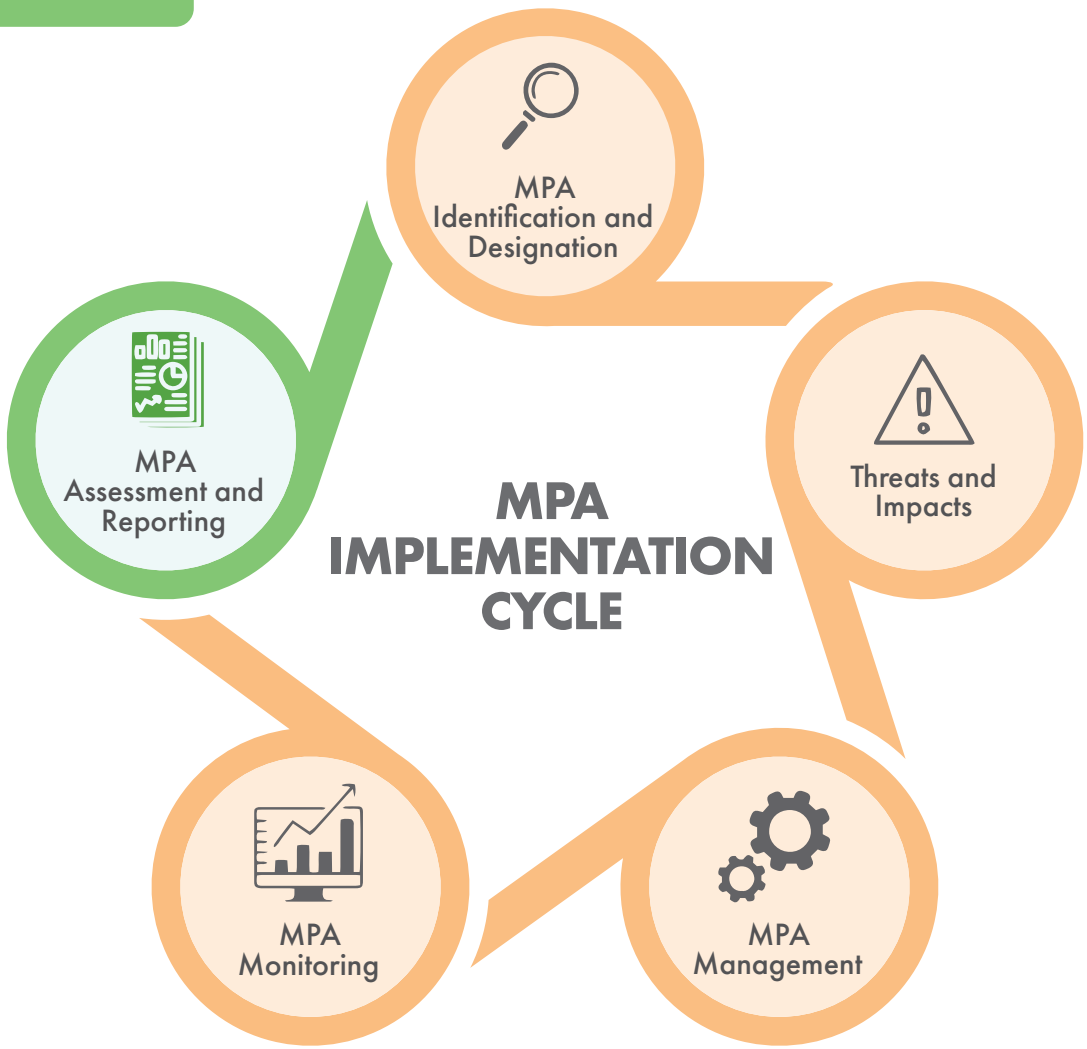


11.6 Data analysis and reporting

A critical part of MPA monitoring is the analysis and reporting of data as it plays a crucial role in conveying complex data gathered throughout the monitoring process in an understandable way to relevant stakeholders. This phase of monitoring is instrumental in deriving meaningful insights, identifying trends, recognising patterns, and pinpointing potential threats to the MPA. Data analysis and reporting also facilitates evidence-based decision making and adaptive management.

It is important that monitoring results are effectively communicated to relevant stakeholders, ensuring a well-informed and collaborative approach to conservation efforts and raising awareness and support for the MPA (see Section 13).

12 MPA ASSESSMENT



The final stage of the MPA Implementation Cycle 'MPA Assessment and Reporting' has been split into two sections. For information on reporting please refer to Section 13.

12.1 Learning Objectives

- Understand what MPA assessments are and why they are important.
- Explore different types of assessments and their uses.
- Learn what Protected Area Management Effectiveness (PAME) evaluations are, their benefits and different methods.
- Enhance understanding of PAME evaluations through case studies from other countries.

12.2 What are MPA assessments?

Assessments are a vital step within the MPA Implementation Cycle. They make best use of evidence on human pressures and biological data collected throughout the implementation cycle to help understand whether management is effective and MPAs are moving towards meeting their objectives. They can take place at various scales, from site level to whole networks.

Assessments can be used for various purposes including to assess:

- The condition of the MPA's protected features e.g., habitats, species or whole ecosystems.
- Trends occurring in the MPA and outside such as is the biodiversity recovering, static or declining?

- Impacts of human activities on the MPA and any changes in human pressures.
- Overall effectiveness of management measures on achieving the MPA's objectives.

The results of MPA assessments are becoming increasingly important to support the evaluation of national, regional and global ambitions for marine protection.

12.3 Types of MPA assessments

There is a wide variety of assessment techniques and tools available to help assess different elements of the MPA or MPA network. The type of assessment will be driven by the desired outputs and uses of the assessment, and available evidence to input into the process. Some examples of assessments are provided below.

12.3.1 Stocktakes

Stocktakes involve creating an inventory of information on the MPA to help improve understanding of what is being protected and how, as well as to help identify gaps and needs within the MPA network. For example, a stocktake can help identify where additional MPAs could be located to expand the network or where management might be needed. Collated information could include what is protected across MPAs and how they are connected to national and international commitments, such as IUCN Red List species. Or collation of existing human activities data inside and outside an MPA to better understand how management could be implemented.

12.3.2 Condition Assessment

A condition assessment draws together all available evidence from environmental monitoring and research activities to determine the condition of a 'feature' such as a species, habitat or ecosystem that an MPA has been designated to protect. This type of assessment will help to identify whether the 'feature' is in 'good condition' or whether it needs to recover to reach 'good condition'. A condition assessment can also be used before an MPA is designated to help with the site selection process and to collate baseline data.

The frequency at which condition assessments are conducted will depend on the MPA 'feature' and could range from annual assessments to at least once every five years. Assessment results are then used to support the evaluation of management effectiveness and review of Management Plans.

12.3.3 Protected Area Management Effectiveness Evaluations

A Protected Area Management Effectiveness (PAME) evaluation is an assessment of how well a protected area is being managed, primarily the extent to which management is protecting values and achieving goals and objectives.[44]

Once an MPA has been designated and a Management Plan developed it is important to understand whether the plan is working and achieving the set objectives..

PAME evaluates three main themes:

1. MPA design
2. The suitability of management systems and processes – are they working and are they good enough?
3. The delivery of MPA objectives including conservation of values - what is being protected, usually natural e.g., species and habitats but it can also include cultural, social and economic values.

Further information on PAME evaluations can be found in Section 12.4.

12.3.4 Global Assessments Management Effectiveness of Protected and Conserved Areas (MEPCA)

MEPCA focuses on the achievement of conservation outcomes and is designed to use existing effectiveness assessments. It has been developed based on the existing qualitative OSPAR[45] management status four question approach (a method which assesses the management status of marine protected areas (MPAs) in the OSPAR North-East Atlantic region). The approach considers whether management information is documented, if management measures are in place, if monitoring is in place and whether the site is achieving its conservation outcomes.

The indicator has been trialled on 549 PCAs from 9 countries to assess its global applicability and aid its further development. The MEPCA indicator

is now listed as a complimentary indicator under Target 3 of The Kuming-Montreal Global Biodiversity monitoring framework.[46]

Key features of the MEPCA Indicator include:

1. Quantitative assessment: The tool provides measurable outputs to evaluate the management effectiveness of PCAs.
2. Global applicability: It can be used for marine, freshwater, and terrestrial protected areas, as well as Other Effective area-based Conservation Measures (OECMs).
3. Flexibility: The indicator can utilise existing PAME assessments or direct evidence for its evaluation.
4. Accessibility: Available in a spreadsheet format, the tool produces a straightforward 'pass' or 'inadequate' result for each assessed area.

12.4 PAME Evaluations

12.4.1Benefits of PAME evaluations

PAME evaluations can have multiple uses and benefits and is a vital tool in the MPA Implementation Cycle to support adaptive and responsive management.

For example:

If MPA management isn't working as well as planned then a PAME evaluation can help to:

- Adjust management actions.
- Set new priorities.
- Improve resourcing.
- Use staff and budget effectively by focusing on activities that will have the most impact.

If MPA management is working well a PAME evaluation is useful to:

- Highlight successes both locally and internationally.
- Support reporting e.g., for international commitments such as the 30 by 30 initiative.
- Help share knowledge, skills and experience with others involved in MPAs and marine conservation and management.
- Help to secure funding for the MPA by providing information for proposals and establishing accountability for expenditure.

A PAME evaluation is also a very good tool to help:

- Build support and trust with stakeholders and the local community by sharing information about what is being done to manage the MPA.
- Raise awareness of the MPA and its values and objectives.
- Promote accountability and transparency between the MPA management team and local community.

Irrespective of the main drivers for the use of the tool, PAME should be integrated into the MPA Implementation Cycle to track improvements over time. It is not a one-off exercise instead it should be a normal part of the day-to-day management of the MPA to allow the management team to respond to change effectively.

12.4.2 Global importance of PAME evaluations

PAME evaluations are used globally for all types of PCAs and are part of international best practice. A global database called GD-PAME,[47] run by UNEP-WCMC, is available for countries to submit details of their completed evaluations. This database is then used for reporting on the Target 3 of The Kunming- Montreal Global Biodiversity Target to measure global progress in protected area management effectiveness.

Regional databases also exist for recording PAME evaluations, and it is recommended that each country has their own form of national reporting available.

PAME is also a requirement for PAs to meet the globally recognised benchmark for effective and equitable MPAs through the IUCN Green List Standard.[48] This Standard focuses on 4 components (good governance, sound design and planning, effective management, successful conservation outcomes) and 50 criteria aimed at motivating improved performance and achievement of conservation objectives. To accomplish Green List status the protected area must undertake PAME evaluations.

12.4.3 What does a PAME evaluation involve?

PAME evaluations assess criteria across the MPA management cycle based on the idea that good MPA management follows a process with six distinct stages or elements (Figure 16).[44]

Once a PAME assessment is completed the results should be used to inform adaptive management. For example, using the information and actions identified in the PAME assessment to revisit the current MPA management plan or other documentation (such as an operational plan, budgets, engagement plans) to ensure all the evidence and actions are captured and updated.

PAME assessments should not been seen as one-off and ideally (dependent on method chosen) should be done at regular intervals to ensure continued assessment of MPA effectiveness.

Figure 16 Framework for assessing management effectiveness[44]

1. Context – where are we now?

This element provides the relevant background information needed to plan and implement management and focusses the evaluation on the most important aspects of management. It considers:

- The values and significance of the MPA from an ecological, social and cultural perspective.
- The threats to the MPA.
- External influences such as the economic position, policy environment and political stability.
- Who the key stakeholders are.

Some context elements are likely to be fairly constant, but others will change over time for example, some threats might decline while new pressures emerge, and this will have major implications for management.

2. Planning – where do we want to be and how will we get there?

This element of evaluation considers the design features of the MPA including the physical, legal and institutional factors which determine whether its management will be relatively straightforward or complicated.

An MPA that suffers from fundamental design flaws is unlikely to be effective, however efficiently the managing organisation operates, and so regular assessments of the quality of planning underpin much of what follows.

3. Inputs – what do we need?

This element investigates the adequacy of resources such as human capacity, facilities, information, equipment and budget for effective management. It considers:

- The level of resources needed.
- The extent to which these resources are available.
- Whether resources are being used and applied in the best way.

The level of resources available for management can have a major impact on effectiveness. Therefore, evaluations need to develop a clear and unbiased picture of the inputs available and to identify gaps and shortfalls.

4. Processes – how do we go about management?

The assessment of management processes focuses on the standard of management within a MPA system or site. It requires:

- A definition of what systems and standards are acceptable, and which are 'best practice'.
- Investigation of whether systems are being implemented, and standards are being met.
- Recommendations as to whether the systems and standards are appropriate or could be improved.

Adoption of the best possible management processes and systems is essential for good management. A regular audit of such systems can help to achieve better management outcomes.

5. Outputs – what were the results?

Outputs determine whether the MPA managers and other stakeholders have achieved what they set out to do. This type of information is most useful for evaluation purposes where pre-existing plans, targets or standards have been established against which achievement can be measured. In an ideal situation there will be a management plan or an annual operational plan with a clear set of targets that have either succeeded or failed.

Assessment of outputs looks at:

- The number or level of products and services delivered. For example, the number of people trained, meetings held with local communities, or the numbers of fisheries patrols undertaken.
- The extent to which stated actions, tasks and strategies were implemented.

6. Outcomes – what did we achieve?

An evaluation of the outcomes of management is vitally important because it measures the real effects of management actions.

The outcomes element looks at:

- Whether the condition of the values including biodiversity, socio-economic and cultural conditions has changed over time.
- The extent to which a threat has been reduced.
- The extent to which other objectives of management have been achieved.

Information on the condition of values can be determined from qualitative observations or opinions from experts as well as local knowledge or ideally from detailed scientific data from long-term monitoring programmes.

12.4.4 Stakeholder Input

As with all elements of the MPA Implementation Cycle, PAME evaluations are best achieved when stakeholders have been given an opportunity to input into the process. Ideally, managers at various organisational levels and representatives of interested stakeholders (e.g. local communities and Indigenous people, neighbours, NGOs, tourist operators, researchers) should all participate in the assessment process.

However, in some circumstances, involvement of a broad group of stakeholders is not possible. For example, involvement of local stakeholders will not always be practical if a large, system-wide evaluation is being undertaken.

Facilitated workshops or meetings with the MPA management team and stakeholders are usually held to help complete an evaluation. Workshop participants self-assess against either set criteria, indicators or questions, using agreed objectives or standards. Participants can also support identification of what actions are needed to reach each objective and improve management.

12.4.5 PAME Methodologies

There are over 70 different PAME methodologies used around the world as every country and protected area is unique, with different aims/objectives, cultural settings and management regimes. Methods can be global, regional, national or help assess specific purposes, such as community involvement or progress towards objectives.

Methods vary in the types and levels of detail needed, frequency of use, length of time to complete (rapid and detailed), cost and resources required. When choosing a method the following should be considered:

- What is the purpose of the PAME assessment? Do you need details?
- What data is available?
- What is the resource available to complete the assessment?
- What ranking or scoring system would be best?

12.4.6 Rapid PAME methodologies

The **main advantages** of rapid assessment methods are that:

- They are simple to complete and have minimal costs associated with them.
- They are quick – some can be completed in a couple of hours whilst others take a few days.
- Questions in rapid assessments can often be completed without the need for any additional research, but where possible quantitative data should be used to support the assessment.
- They provide MPA managers with a mechanism for monitoring progress over time and to scope out issues and identify additional needs.

The **main disadvantages** of rapid assessment methods include:

- The main criticism of rapid assessment methods is that they are too limited to allow for a detailed evaluation of outcomes and so shouldn't be used as the sole basis for adaptive management.
- As they are a self-assessment tool with results being mainly qualitative, they can attract criticism around bias.
- Bias can be addressed by using quantitative data where possible and completing the evaluations in a workshop setting involving the MPA staff and key stakeholders including marine resource users or it might be beneficial to involve external facilitators who will be impartial.

Management Effectiveness Tracking Tool (METT)

- One of the most well-known and commonly used methods globally.
- It has been used to assess management effectiveness in over 5,000 protected areas in over 170 countries.
- The METT includes all six elements of the Management Framework.
- Excel based format and designed to be simple.
- 38 questions that are each scored 0-3.
- Designed for MPA managers.
- No additional research is needed.
- Latest version is the METT-4, launched in 2021.

Mediterranean MPA Score Card

- Used by the Mediterranean Protected Areas Network (MedPAN).
- Based on the METT but MPA specific.
- Covers all six components of the Management Framework.
- Series of questions based on 18 indicators.
- Scored based responses ranked 0-3.
- Uses available information.
- Used by MPA staff and stakeholders.
- Can be completed in short period e.g., workshop or staff meeting.

Compass Tool

- Originally developed and used by the French Global Environment Facility.
- Adapted by WWF specifically for the UK.
- Questionnaire format.
- Assesses three stages of MPA establishment:
- Creation phase
- Pioneer phase
- Self sufficiency
- 38 criteria.
- Score between 0-3.
- Stakeholders complete questionnaires.

12.4.7 Detailed PAME Methodologies

The main advantages of detailed evaluations are:

- Detailed evaluation methods provide a robust and very comprehensive view of MPA management effectiveness.
- They allow for a detailed assessment of the outcomes and so give a good understanding of the condition of the MPA and how it has changed over time.
- This means that the results of the evaluation can effectively be used to inform adaptive management.

The main disadvantages of detailed evaluations are:

- The downside of these evaluations is that they take a considerable amount of time and financial resources.
- They require a high level of technical capacity to complete them with specialist input.
- A large amount of data collection is needed including field trips which can be costly.

Some detailed assessments can take a year to complete

Great Barrier Reef Outlook Report

- Assessment of reef health and management.
- Undertaken every five years by independent assessors.
- Assesses around 87 different components of the GBR's ecosystem and heritage values and their links with other environmental, social and economic values.
- Considers all six elements of the Management Framework.
- Uses a four-point rating scale against 49 indicators.
- Requires a large amount of evidence over the 5-year period.
- Interviews with stakeholders.
- Results discussed with Managers and ratings can be adjusted as appropriate.

How is Your MPA Doing?

- Created by IUCN, WWF, and NOAA.
- Designed for MPA managers.
- Presents flexible approach to be adapted to different types of MPA.
- Focuses on the outputs and outcomes elements of the Management Framework based on 42 indicators.
- Recommended MPA managers and staff complete the evaluation with marine biologists and social scientists.
- Takes 8-12 months to complete evaluation process.

12.4.8 Network Wide PAME Methodology

Rapid Assessment and Prioritisation of Protected Area Management (RAPPAM)

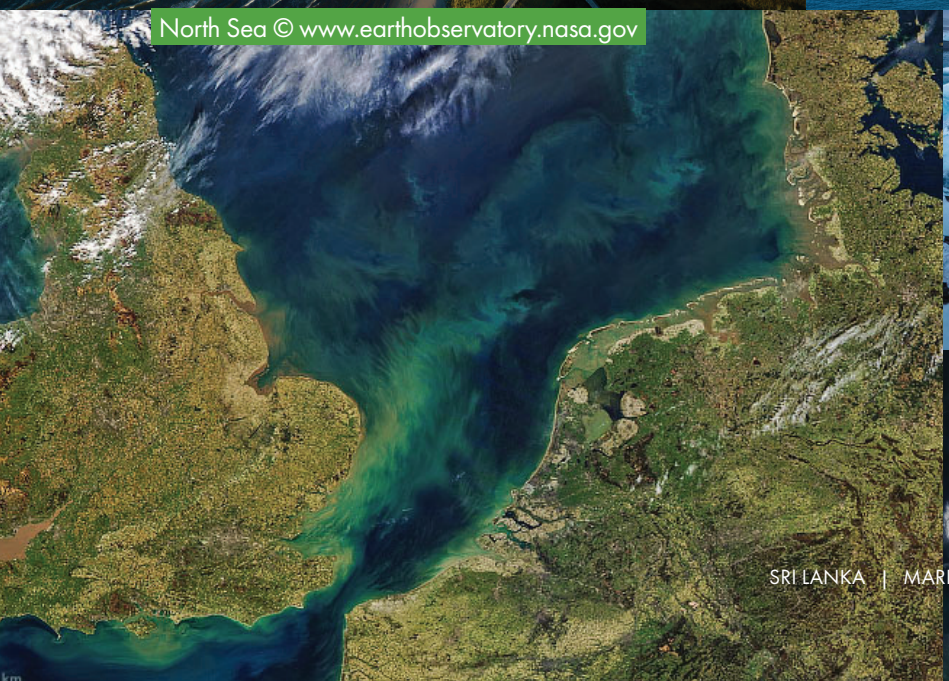
PAME evaluations can also be used at a network level. RAPPAM (Rapid Assessment and Prioritisation of Protected Area Management) is one such methodology that provides broad level comparisons across many protected areas based on a series of questions. RAPPAM provides managers and policy makers a relatively quick and easy method to identify key trends and issues that need to be addressed to improve management effectiveness in a given protected area system or groups of protected areas. It is a decision support tool for setting priorities and allocating resources throughout the system to improve management.

12.5 Case study- OSPAR MPA Network

OSPAR (Convention for the Protection of the Marine Environment of the North-East Atlantic) is a Convention formed by 15 countries across Europe, including the United Kingdom, to protect and conserve the marine area of the North East Atlantic (Arctic, North Sea, Celtic Seas, Bay of Biscay, wider Atlantic). An extensive network of over 580 MPAs has been established (Figure 17).


Atlantic © Envato Elements


Bay of Biscay © LPeak


North Sea © www.earthobservatory.nasa.gov


Arctic © Wirestock


Celtic Seas © www.earthobservatory.nasa.gov

To evaluate the degree to which OSPAR MPAs are considered to be well-managed a questionnaire-based tool was developed in 2016 to evaluate management effectiveness. This tool is used by each contracting party to assess their national MPA network on a two-year cycle. The results are then combined across the entire OSPAR network to achieve a regional evaluation.

The questionnaire consists of four questions:

- **Is management documented?**
- **Is management being implemented?**
- **Is monitoring in place?** This includes ecological and compliance monitoring.
- **Is the MPA achieving its conservation objectives?**

The 2023 report and assessment of the status of the OSPAR MPA network can be viewed in the OSPAR Assessment Portal[49] (Figure 18).

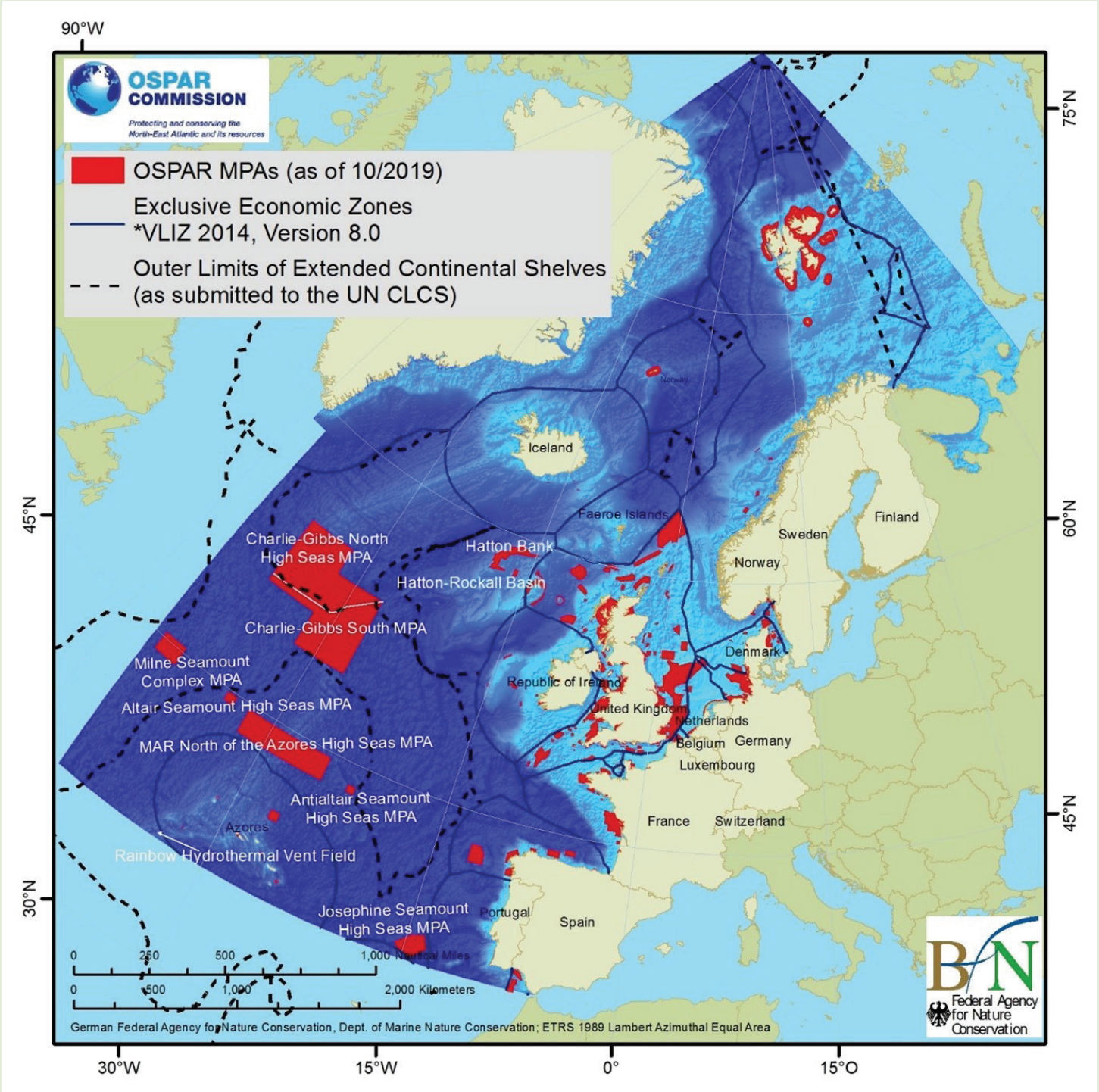


Figure 17 The OSPAR MPA network map from 2019

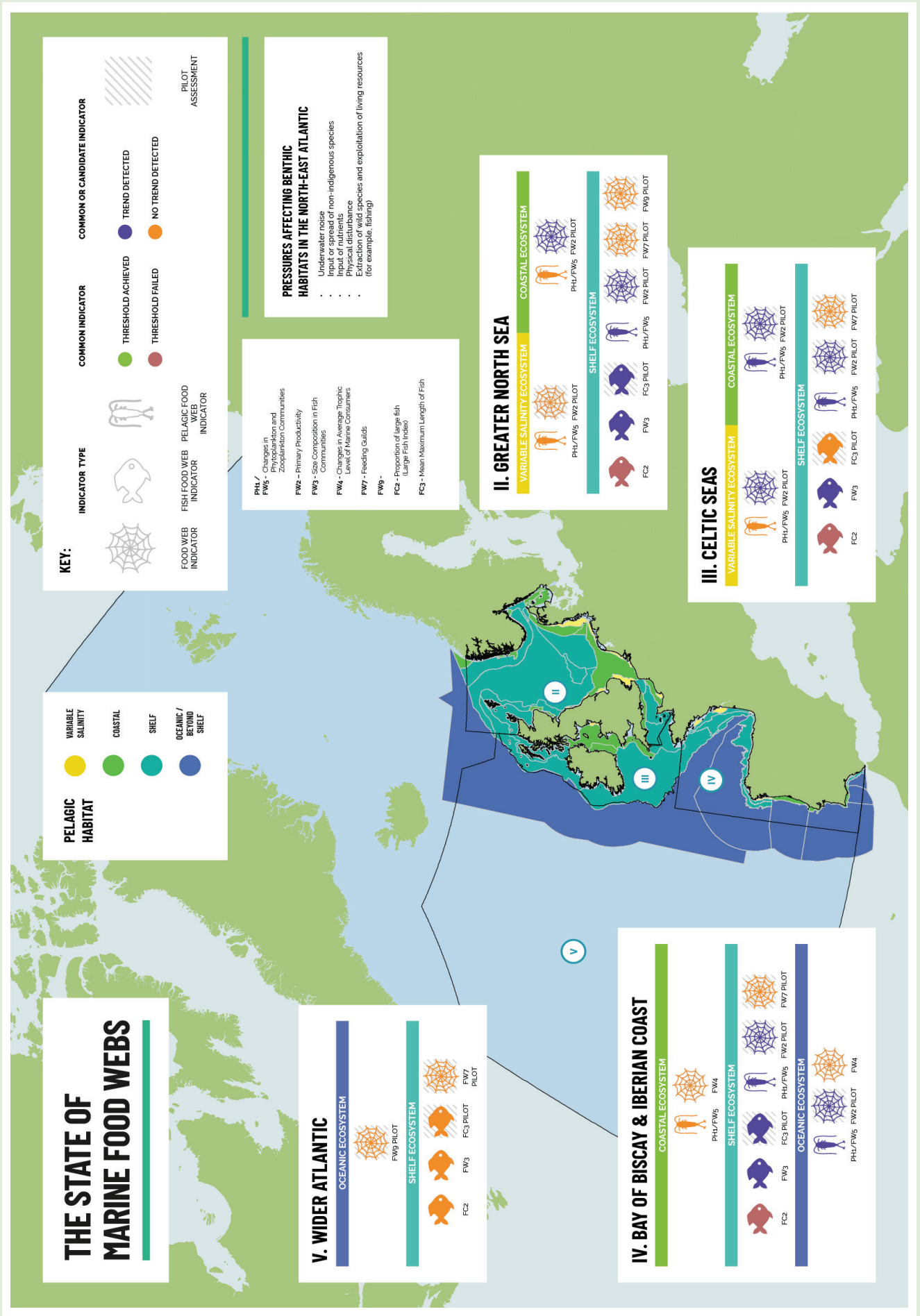


Figure 18 The state of marine food webs for the OSPAR region, taken from the 2023 quality status report.

12.6 Case study- Sri Lanka METT-4 Evaluations

Between 2023 and 2024 the OCPP and DWC evaluated the management effectiveness of five MPAs in Sri Lanka. The aim was to increase understanding on how the MPAs function, determine how well they are being managed, highlight key success areas, and provide recommendations on how management improvements.

The five MPAs were:

1. **Adam's Bridge National Park** designated in 2015 to protect a unique array of coastal and marine ecosystems including seagrass beds and sandbars that provide important breeding grounds for seabirds.

2. **Great Basses and Little Basses Marine Sanctuary** designated in 2019 to protect two sandstone and limestone reefs. The reefs comprise of a variety of corals and reef fishes, and the area is also culturally significant due to its historical features.

3. **Kalpitiya Bar Reef Marine Sanctuary** designated in 1992 to protect a diverse marine ecosystem including shallow reefs. The area is also important for marine mammals, supporting local livelihoods through whale watching tourism.

4. **Kayankerni Marine Sanctuary** designated in 2019 to protect seagrass meadows, coral reefs and associated biodiversity.

5. **Pigeon Island National Park** designated in 2003 to protect coral reefs and two islands (Pigeon Island and Crow Island). The coral reef ecosystem is amongst the healthiest in Sri Lanka and is a significant tourist destination.


Adam's Bridge National Park © Mamic


Great Basses and Little Basses Marine Sanctuary © Jagath Kanahara-Arachchi


Kalpitiya Bar Reef Marine Sanctuary © Trabantos


Kayankerni Marine Sanctuary © 2025 Blue Resources Trust


Pigeon Island National Park © JNCC

To assess management effectiveness METT-4 was used. Evaluations for Adam's Bridge Marine Sanctuary and Great Basses and Little Basses Marine Sanctuary were completed as part of a training initiative for DWC Rangers to learn how to use the METT-4. These evaluations were completed at a government level using ranger expert knowledge and published literature.

The remaining three evaluations were completed using published literature and stakeholder knowledge through workshops and meetings. The evaluation process followed three main steps as outlined in Figure 19. Stakeholder engagement was a key step in the evaluation process. Over 80 stakeholders ranging from government and NGOs to representatives of local tourism and fishing industries contributed to the evaluations of the MPAs.

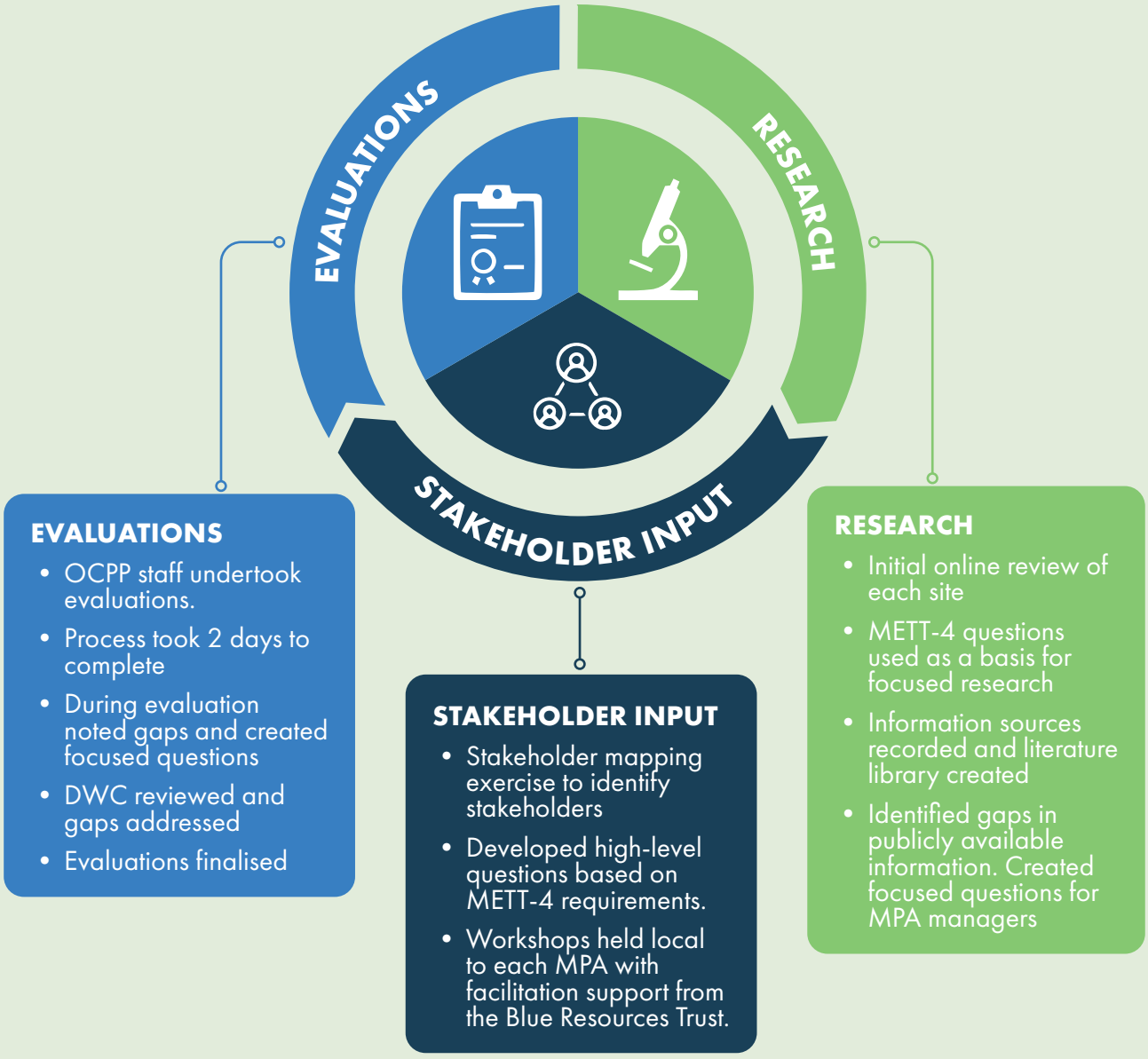


Figure 19 Key steps followed to complete METT-4 evaluations for three MPAs in Sri Lanka in 2024

The METT-4 evaluations will be used by the DWC to prioritise actions to improve management effectiveness across different aspects of the MPA Implementation Cycle. The results have also been shared with NGOs working on marine conservation programmes linked to each MPA, to incorporate actions into their programmes.

Posters summarising the key results for each MPA have also been shared in the local communities of each MPA to ensure stakeholders who inputted into the evaluation process are informed of the results of their contributions (Figure 19).

Figure 20 Poster showing the summary results from Pigeon Island National Park METT-4 assessment.

13 MPA REPORTING AND OUTREACH

13.1 Learning objectives

- Why reporting of MPA information including results of management is important.
- How can you use a wide range of outputs to ensure all stakeholders can access the information.

13.2 Why is it important?

Effective MPA reporting and information sharing to a wide range of stakeholders is vital throughout the whole of the MPA Implementation Cycle. Section 5 on stakeholder engagement covers in detail how to identify and successfully engage relevant stakeholders.

This section provides further information on types of MPA reporting and outreach.

Effective MPA reporting and outreach:

Builds Relationships and Trust

Reporting on MPAs can help to foster open and transparent communication channels to build relationships and trust with stakeholders.

Clear Message and Information Sharing

Effective reporting ensures the right information is reaching the right stakeholders, and that information is not taken out of context or misinterpreted.

Highlights the Benefits, Costs and Importance

Reporting and outreach communicates the benefits, costs and importance of MPAs to stakeholders, ensuring the positive impact of MPAs on local communities, livelihoods, and quality of life are recognised and communicated. Honestly acknowledging and communicating the potential negative impacts and costs of an MPA on communities is also important to maintain trust between MPA managers and communities and to resolve issues quickly.

Opportunities

By improving stakeholders' awareness of work on and the status of MPAs, it can facilitate opportunities to collaborate. This could include sharing data and new areas of research, introduction of nature-based solutions for shared problems and highlighting sustainable economic benefits.

Capacity Building

Effective reporting and outreach can strengthen local communities' capacity to support and actively engage in MPA activities and decision-making processes.

Evaluation and Feedback

Open communication and feedback from stakeholders can support the improvement of MPA management, monitoring and reporting.

13.3 Types of reporting and outreach

Reporting and outreach are critical for all stages of the MPA Implementation Cycle. For example, it can improve general environmental awareness, whilst encouraging behaviour that is consistent with the objectives of the MPA and enabling effective public participation in decision-making.

Reporting on MPAs can come in various forms including websites, reports, research papers, posters, social media posts, media campaigns (social media, newspapers, television, radio etc.), and educational programmes.

It is best practice that information is shared on MPA objectives, protected features, regulations, and the importance of marine conservation. As well as, incorporating local knowledge, traditional practices, cultural values and socio-economic information.

Whist developing an MPA reports or outreach, it is important to think about the audience. The reports and outreach materials should be tailored, considering language, formality and content, to each stakeholder group, such as local communities, and marine resource user groups.

13.4 Case Study- Sri Lanka Climate Change Education Packs

The OCPP in partnership with the Central Environmental Authority (CEA), the Ministry of Environment and the Ministry of Education of Sri Lanka has developed education packs to support the teaching of climate change and the marine environment in the school curriculum.

The packs consist of four lessons of which each lesson provides an informative short video accompanied by a more detailed workbook for students to work through. The secondary school pack naturally, provides more advanced content and a series of quizzes and experiments to test the students learning. Each video and booklet has been created in English, Tamil and Sinhala.

The themes of the lessons cover:

1. What is climate change?
2. Climate change and humans
3. Climate change and the marine environment
4. Climate change solutions

As well as providing an engaging learning tool for school children the materials can also be accessed by the public to build greater understanding about climate change and its effects on the marine environment and people of Sri Lanka.

To access the climate change video series, use the following links:

Primary School Climate Change Lessons

Secondary School Climate Change Lessons

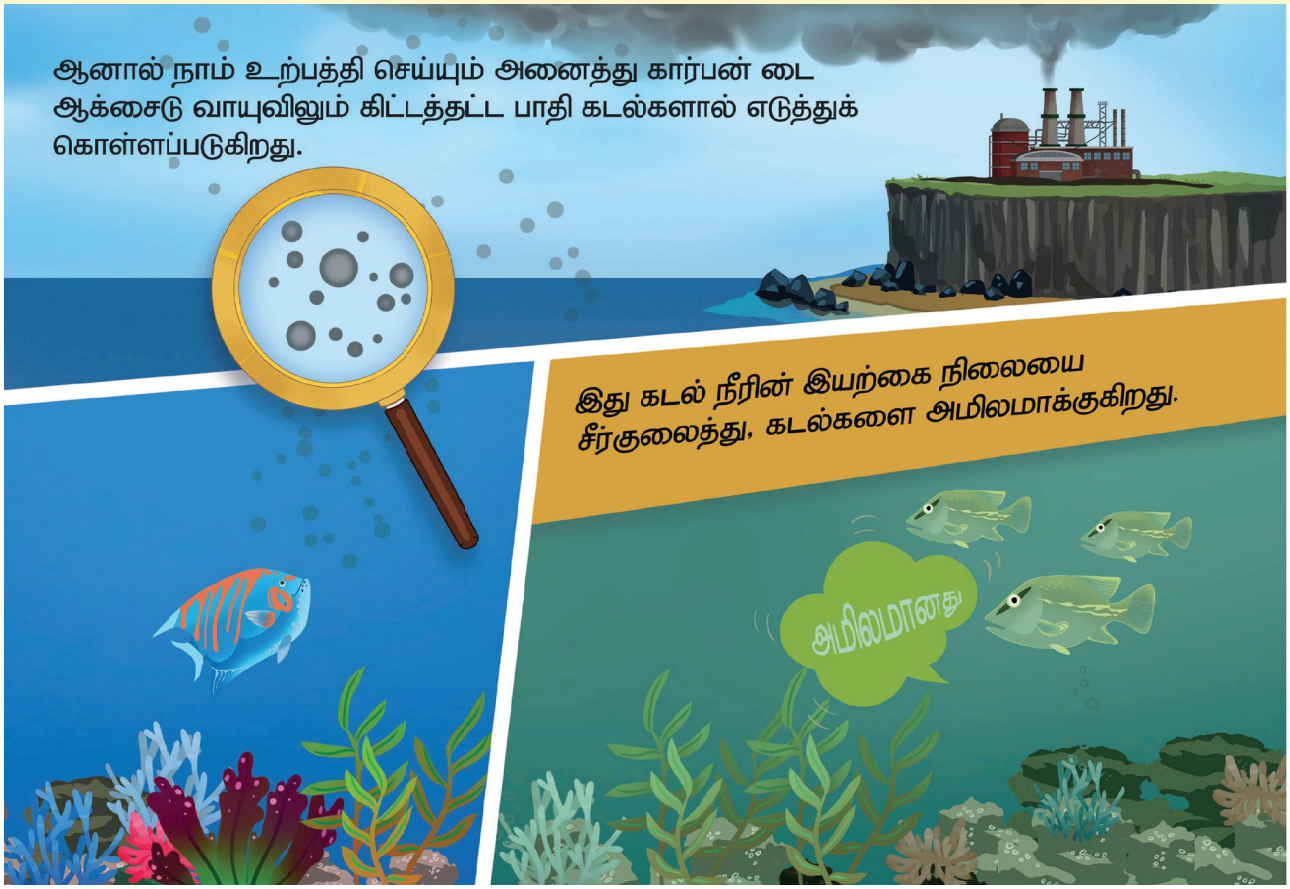


Figure 21 An example of a workbook page from lesson one of the climate change education pack developed by the OCPP, CEA, Ministry of Environment and Ministry of Education of Sri Lanka. Workbooks were created in Sinhala, Tamil and English. This example shows the Tamil version.

දේශගුණික විපර්යාස අවම කිරීම සඳහා ශ්‍රී ලංකාව කුමක් සිදුකරයි ද?

ලෝකයේ වෙනත් රටවල් මෙන් ම ශ්‍රී ලංකාව ද දේශගුණික විපර්යාසවල බලපෑම් අවම කිරීම සඳහා වැදගත් පියවර ගනිමින් සිටියි. ගැටලුව විසඳීමේ හදිසි අවශ්‍යතාවය පිළිබඳ වැඩෙන දැනුවත්භාවයත් සමග, ශ්‍රී ලංකා රජය විසින් හරිතාගාර වායු විමෝචනය අඩු කිරීම, තිරසාර සංවර්ධනය දිරිගැන්වීම සහ දේශගුණික විපර්යාසවල බලපෑම්වලට හැඩගැසීමේ හැකියාව ඉලක්ක කරගත් පියවර මාලාවක් ක්‍රියාත්මක කිරීම සඳහා මුල පුරා ඇත. දේශගුණික විපර්යාසයන්ට එරෙහිව සටන් කිරීම සඳහා ශ්‍රී ලංකාව විසින් ගනු ලබන ප්‍රධාන ක්‍රියාමාර්ග කිහිපයක් පහත දැක්වේ.

පැරිස් ගිවිසුම සඳහා ඇති ශ්‍රී ලංකාවේ බැඳීම

පැරිස් ගිවිසුම යටතේ සිය වගකීම් ඉටු කිරීමට සහ දේශගුණික විපර්යාසවල බලපෑම්වලට විසඳුම් සෙවීම සඳහා දැඩි ක්‍රියාමාර්ග ගැනීමට ශ්‍රී ලංකාව බැඳී සිටියි.

පැරිස් ගිවිසුම යටතේ එහි බැඳීම්වල කොටසක් ලෙස, ශ්‍රී ලංකාව සිය ජාතික වශයෙන් නිර්ණය කළ දායකත්ව (NDC) ඉදිරිපත් කරමින් 2030 වර්ෂය වන විට හරිතාගාර වායු විමෝචනය 4%කින් අඩු කිරීමට ප්‍රතිඥා දී ඇත. *[9]*

දේශගුණික විපර්යාස සම්බන්ධ ප්‍රතිපත්ති සහ වැඩසටහන් සම්බන්ධීකරණය කිරීම සහ ක්‍රියාත්මක කිරීම සඳහා පරිසර අමාත්‍යාංශය යටතේ ජාතික දේශගුණික විපර්යාස ලේකම් කාර්යාලයක් ද රට තුළ ස්ථාපිත කර ඇත. බලශක්ති කාර්යක්ෂමතාව වැඩි දියුණු කරමින් සහ තිරසාර ප්‍රවාහනය දිරිගන්වමින් රටේ බලශක්ති මිශ්‍රණයේ පුනර්ජනනීය බලශක්තියේ කොටස වැඩි කිරීම සඳහා රජය විවිධ වැඩසටහන් ක්‍රියාත්මක කරයි.

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Figure 22 An example of a workbook page from lesson four of the climate change education packs developed by the OCPP, CEA, Ministry of Environment and Ministry of Education of Sri Lanka. Workbooks were created in Sinhala, Tamil and English. This example shows the Sinhala version.

දේශගුණික විපර්යාසවල බලපෑම් අවම කිරීම සඳහා ශ්‍රී ලංකාවේ මුලපිරීම්

1 **පුනර්ජනනීය බලශක්තිය දිරිගැන්වීම:** ශ්‍රී ලංකාව 2030 වසර වන විට රටේ විදුලි බලයෙන් 70%ක් පුනර්ජනනීය බලශක්ති ප්‍රභවයන්ගෙන් උත්පාදනය කර ගැනීමේ ඉලක්කයක් තබා ගෙන සිටියි. *[10]* මෙම ඉලක්කය සපුරා ගැනීම සඳහා සූර්ය ශක්තිය, සුළං, ජල හා අනෙකුත් පුනර්ජනනීය බලශක්ති ප්‍රභවයන් සංවර්ධනය කිරීම සඳහා රජය දිරිගැන්වීම් සිදු කරයි.

2 **වනරෝපණය සහ ප්‍රති වනරෝපණය:** කාබන් විමෝචනය අඩු කිරීමට සහ දේශගුණික විපර්යාසවල බලපෑම් අවම කිරීමට උපකාරී වන, වනාන්තර ආවරණය වැඩි කිරීම සඳහා රජය විසින් වනරෝපණ සහ ප්‍රති වනරෝපණ වැඩසටහන් කිහිපයක් දියත් කර ඇත.

3 **අපද්‍රව්‍ය කළමනාකරණය:** අලුතින් ජනනය වන අපද්‍රව්‍ය ප්‍රමාණය අවම කිරීමටත් ප්‍රතිචක්‍රීකරණය කරන ලද හෝ නැවත භාවිතා කරන අපද්‍රව්‍ය ප්‍රමාණය වැඩි කිරීම සඳහාත් ශ්‍රී ලංකාව විසින් වඩා හොඳ අපද්‍රව්‍ය කළමනාකරණ පරිවයන් දිරිගැන්වීම සිදු කරයි.

4 **හරිත ප්‍රවාහනය:** ප්‍රවාහනයෙන් සිදුවන කාබන් විමෝචනය අවම කිරීම සඳහා ශ්‍රී ලංකාව විසින් විද්‍යුත් වාහන භාවිතය සහ පොදු ප්‍රවාහන පද්ධති වැඩිදියුණු කිරීම සඳහා දිරිගැන්වීම් සිදු කරයි. *[11]*

5 **දේශගුණික ඔරොත්තු දීමේ හැකියාව:** වඩා හොඳ යටිතල පහසුකම් සහ ආපදා අවදානම් අවම කිරීමේ ක්‍රියාමාර්ග හරහා මුහුදු මට්ටම ඉහළ යාම සහ දරුණු කාලගුණික තත්වයන් වැනි දේශගුණික විපර්යාස මගින් ඇතිවන බලපෑම්වලට ප්‍රජාවන්ගේ ඔරොත්තු දීමේ හැකියාව වැඩි කිරීමට රජය විසින් පියවර ගනිමින් සිටියි. *[12]*

13.5 Case Study- Healthy Reefs Initiative Report Cards

The Healthy Reefs Initiative[50] is focused on the Mesoamerican Reef Ecosystem (which includes Mexico, Belize, Honduras and Guatemala) and was launched in 2003 with the main goals to:

1. Promote the adaption and application of the Healthy Reefs indicators by mangers, policy makers and other leaders concerned with the integrity of the Mesoamerican Reef Ecosystem.
2. Standardise the analysis and interpretation of reliable scientific data to improve the reef ecosystem management.
3. Serve as an open forum for information sharing and networking among science and conservation partners.

The Healthy Reef Initiative collates the data and evidence collected by a wide range of partner organisations (over 40 NGOs) across the Mesoamerican reef and produces report cards annually to summarise the condition and health of the reef at a large scale and the research and data that is being collected (Figure 23).

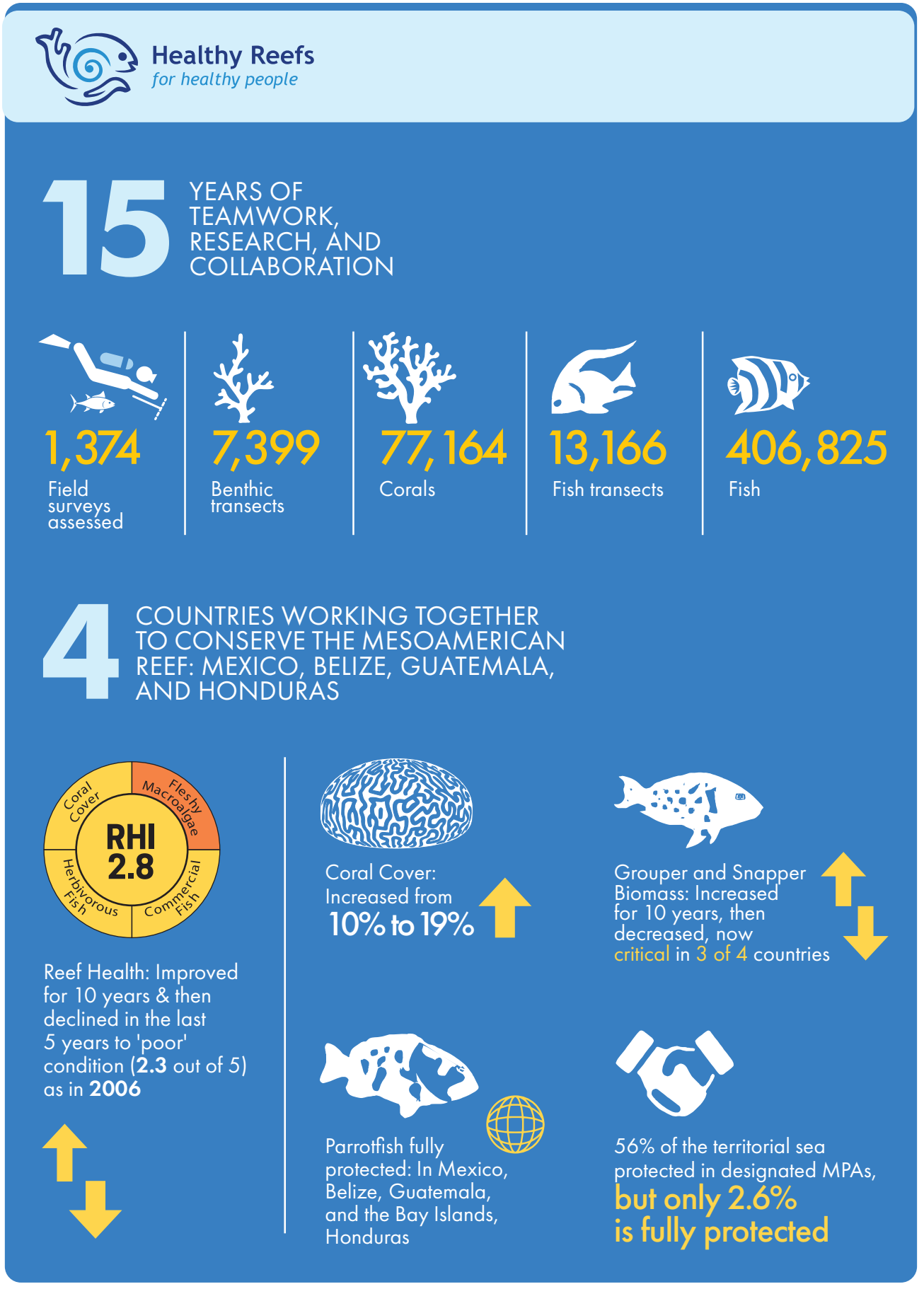


Figure 23 A summary of the data collected and the trends observed across the Mesoamerican Barrier Reef since the Healthy Reef Initiative began.

Whilst the data, evidence and research behind the annual report cards can be complex, the report cards use of simple graphs, bright colours and symbols to summarise the information, make them an effective method for communicating complex messages to a range of marine stakeholders (Figure 24).

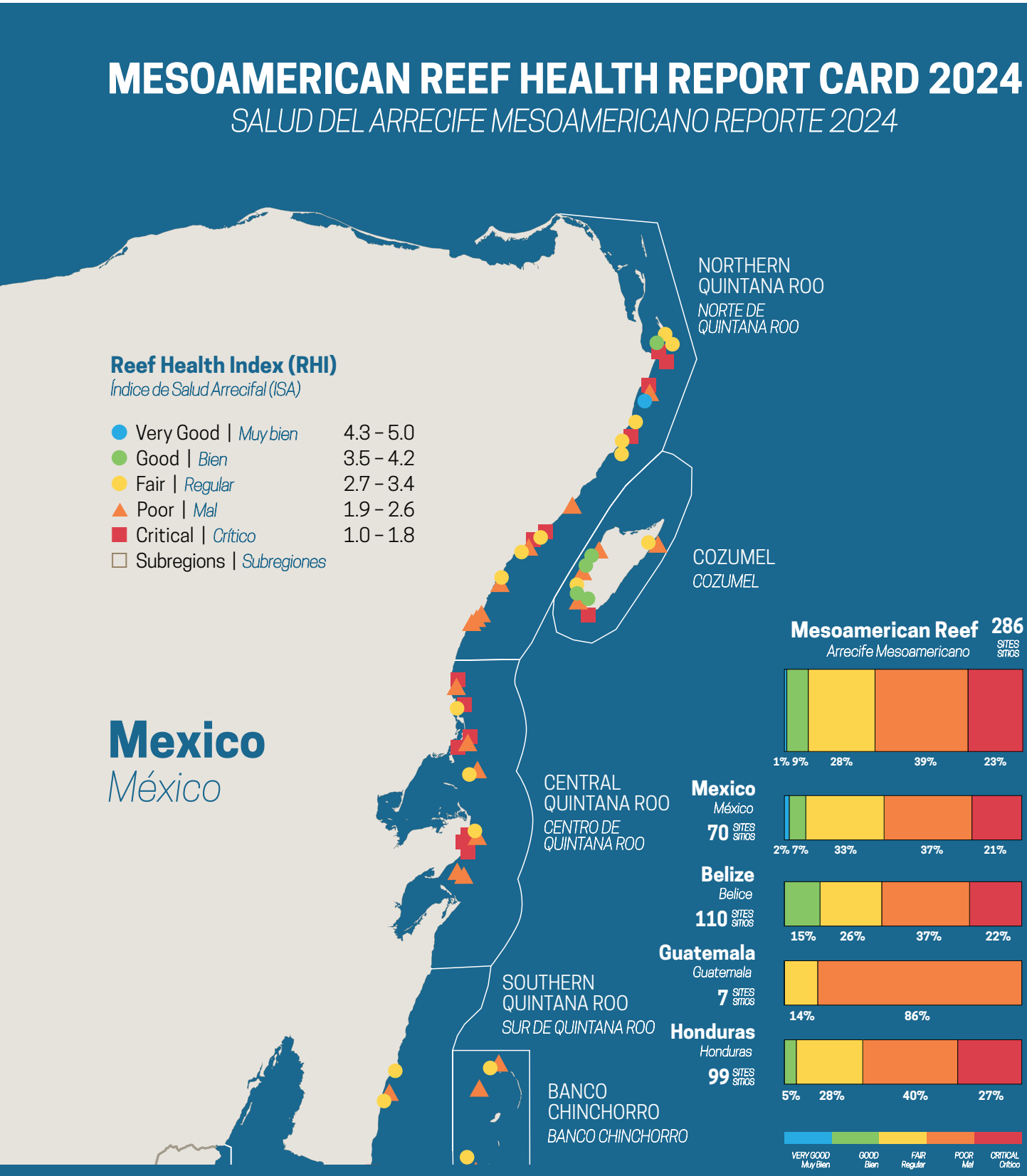


Figure 24 One page of the Mesoamerican Reef report card from 2022.

APPENDIX 1. OVERVIEW OF MPAS IN SRI LANKA

Overview of marine protected areas in Sri Lanka and their associated area, year of declaration and description of marine environment. Descriptions have been summarised from 'A Directory of Marine Protected Areas in Sri Lanka 2023'[51]

Marine National Parks


Adam's Bridge © Google Maps

01 Adam's Bridge Marine National Park

Total Declared Area	Marine Area
18,990 ha	18,990 ha

Percentage of Marine Area out of Total Declared Area | 100%

Date of Declaration 22.06.2015

- Transboundary reserve with India.
- Consists of limestone shoals and sand dunes.
- Important migratory route and breeding ground for several migratory bird species.
- Shallow waters host several fish species, seagrasses, dolphins, dugongs and turtles.

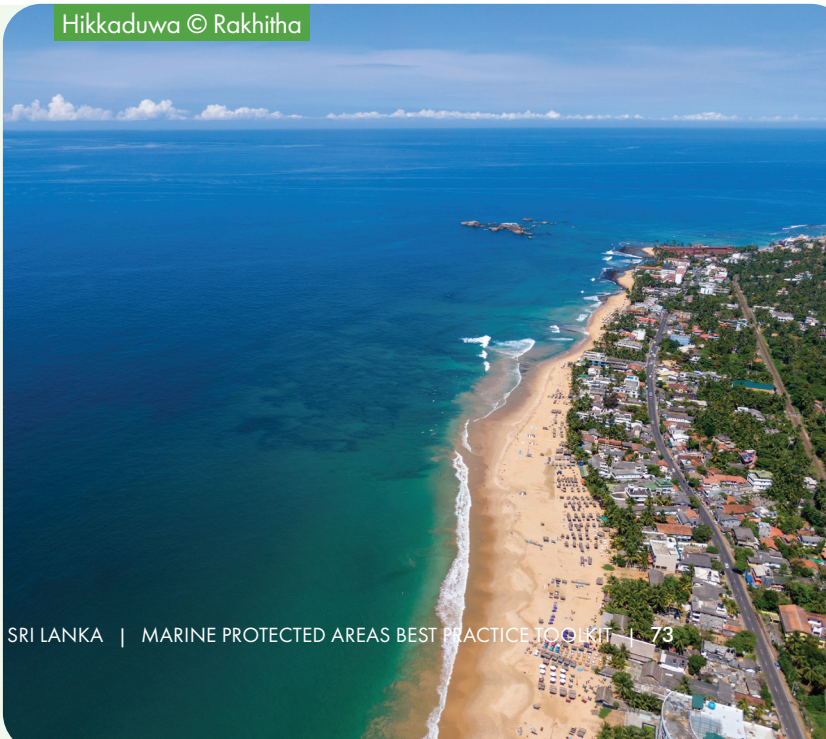
02 Hikkaduwa Marine National Park

Total Declared Area	Marine Area
101.58 ha	101.58 ha

Percentage of Marine Area out of Total Declared Area | 100%

Date of Declaration 08.10.2002

- Consists of coral reefs, beaches, wetlands and rocky islets.
- Contains important seabird roosting sites.
- Sanctuary for several commercially important fish species.


Hikkaduwa © Rakhitha

03 Pigeon Island Marine National Park

Total Declared Area	Marine Area
471.43 ha	471.43 ha

Percentage of Marine Area out of Total Declared Area | 100%

Date of Declaration 04.06.2003

- Consists of two small islands, several rocky islets, coral reefs and sandy beaches.
- Important region for several bird species.

Pigeon Island © DPiceylon

National Parks (with marine component)

Beach at Bundala national park © Trabantos

04 Bundala National Park

Total Declared Area	Marine Area
9137.98 ha	1644.83 ha

Percentage of Marine Area out of Total Declared Area | 18%

Date of Declaration 04.01.1993

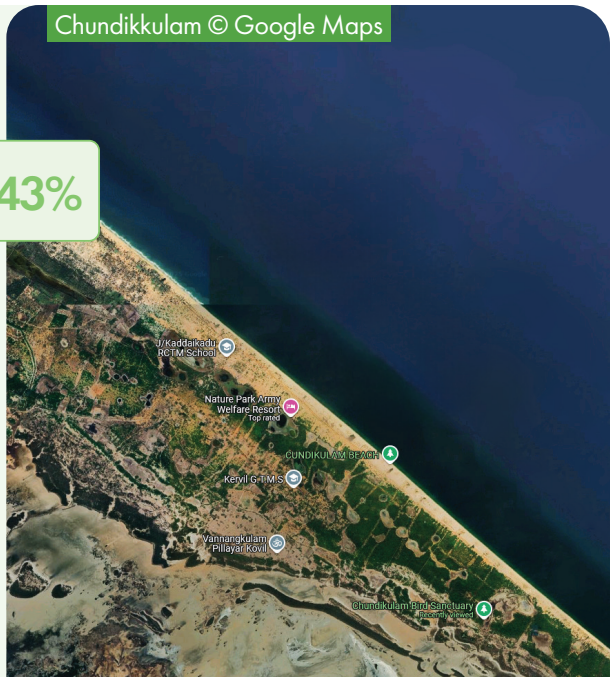
- Consists of three main relief zones namely the beach and sand dune area, immediate inland coastal plain including the Bundala lagoon area and the hinterland area.
- The Park contains seven different terrestrial vegetation types and six wetland types (salt marsh, mangrove, brackish water lagoons, sandy and rocky seashore, seasonal water holes and tanks, salterns).
- Important habitat for several bird and animals' species and a critical breeding ground for turtles.

05 Chundikkulam National Park

Total Declared Area	Marine Area	Percentage of Marine Area out of Total Declared Area
19565.33 ha	8606.3 ha	43%

Date of Declaration 22.06.2015

- Consists of the Chundikkulam Lagoon located in Northern Sri Lanka.
- The lagoon is surrounded by mangrove swamps, seagrass beds, palm plantations and scrub forests.
- Important feeding and roosting location for several resident bird species.



Chundikkulam © Google Maps

Tranquil Beach on Delft Island © Thilina Salgadu

06 Delft Island National Park

Total Declared Area	Marine Area	Percentage of Marine Area out of Total Declared Area
1846.28 ha	123.88 ha	6.71%

Date of Declaration 22.06.2015

- Consists of a section of Delft Island and a small 100 m belt of the adjacent sea.
- Area is made up of wetlands, semi-arid tropical vegetation, coral rubble and sandy beaches.
- Important migratory route for several bird species.
- Only place in Sri Lanka that contains wild ponies.

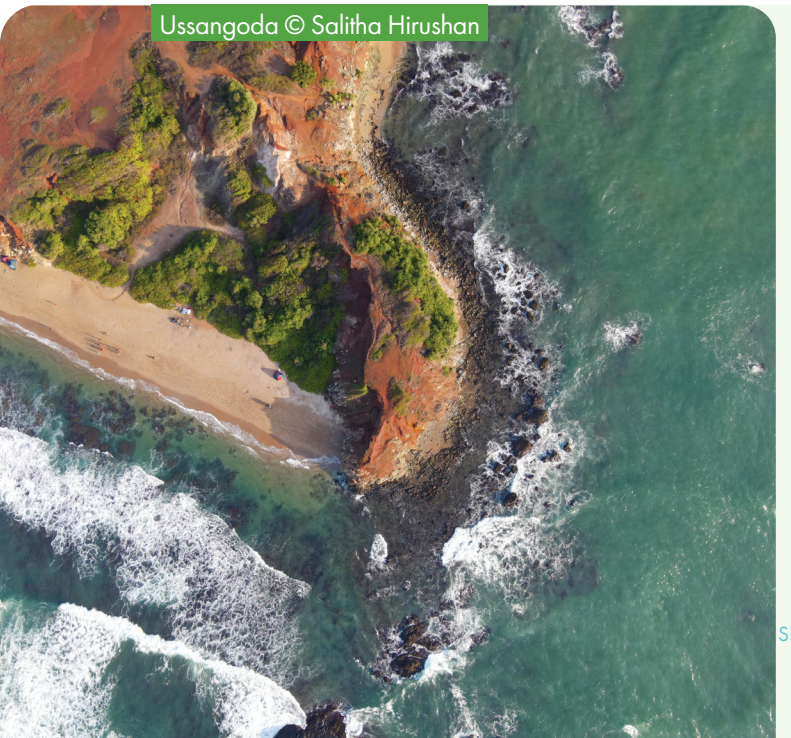
07 Kumana National Park

Total Declared Area	Marine Area	Percentage of Marine Area out of Total Declared Area
88129.49 ha	352.51 ha	0.4%

Date of Declaration 05.07.2006

- Primarily a land-based park located on the southeastern coast.
- The area contains several lagoons, estuaries, mangroves, salt marshes, sand dunes, scrubland and forest vegetation.
- One of the most important nesting and breeding grounds for resident and migratory waterbirds.
- Provides critical feeding and resting habitats for several endangered species of turtles.
- Home to several threatened species including the Mugger Crocodile (Crocodylus palustris), the Lesser Adjutant (Leptoptilus javanicus), and the endangered Fishing Cat (Prionailurus viverrinus)

Kumana © Jagath Kanahararachchi



Ussangoda © Salitha Hirushan

08 Ussangoda National Park

Total Declared Area	Marine Area	Percentage of Marine Area out of Total Declared Area
349.08 ha	200 ha	57%

Date of Declaration 06.05.2010

- Consists of a large rocky coral reef that forms a sheltered reef lagoon.
- Provides shelter to an array of fish and invertebrate species.

09 Yala National Park

Total Declared Area	Marine Area
241868.47 ha	241.86 ha

Percentage of Marine Area out of Total Declared Area: 0.1%

Date of Declaration 25.02.1938

Beach at Yala National Park © Esala Kaluperuma

Marine Sanctuaries

10 Godawaya Sanctuary

Total Declared Area	Marine Area
230.99 ha	192 ha

Percentage of Marine Area out of Total Declared Area: 83%

Date of Declaration 25.05.2006

- Consists of a sandy beach and nearby coral reefs.
- Declared primarily to protect endangered turtles that use the beach for nesting and the nearby coral reefs for foraging and resting.
- Home to the largest population of leatherback turtles in Sri Lanka.

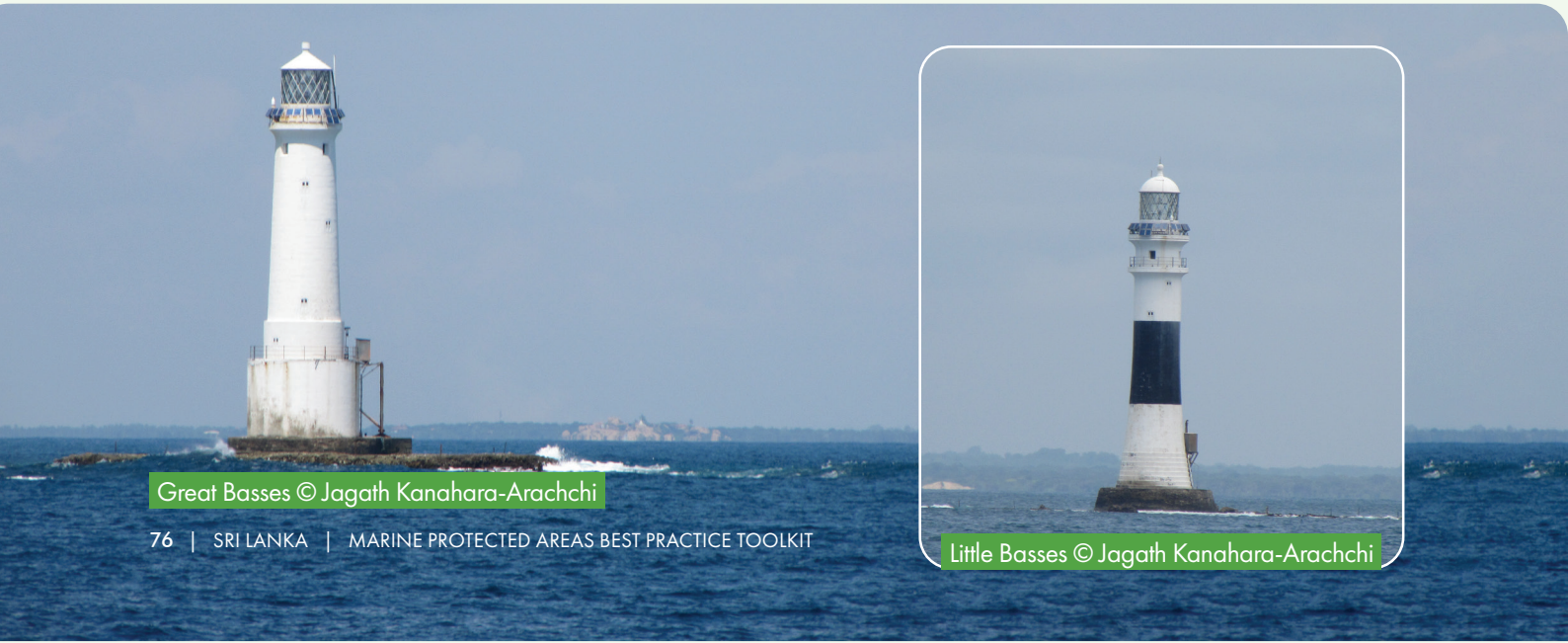
11 Great Basses & Little Basses Sanctuary

Total Declared Area	Marine Area
67282.3 ha	67282.3 ha

Percentage of Marine Area out of Total Declared Area: 43%

Date of Declaration 11.10.2019

- Consists of two long sandstone and limestone reefs.
- Declared to protect the two reefs.
- Critical habitats for many marine organisms.



Great Basses © Jagath Kanahara-Arachchi

Little Basses © Jagath Kanahara-Arachchi

A large rock located inside Kalametiya Bird Sanctuary © Chaminda Silva

12 Kalamatiya Sanctuary

Total Declared Area	Marine Area
2525.00 ha	328.25 ha

Percentage of Marine Area out of Total Declared Area | 13%

Date of Declaration 28.06.1984

- Consists of the Kalametiya and Lunma Lagoons and some of the surrounding area.
- The area contains coral reefs, sandy beaches, wetlands, mangrove swamps shallow coastal water, salt marshes and reed beds.
- Important location for resident and migratory waterbirds and several prawn and fish species.

13 Kalpitiya Bar Reef Sanctuary - welipara

Total Declared Area	Marine Area
30670 ha	30670 ha

Percentage of Marine Area out of Total Declared Area | 100%

Date of Declaration 03.04.1992

- Consists of a complex range of offshore reefs that make up one of the largest reef systems in Sri Lanka known as the Bar Reef.
- The Bar Reef has the highest biological diversity in all Sri Lanka.
- Reefs are made up of shallow reefs and sandstone habitats.

Aerial view of Kalpitiya beach and lagoon © Trabantos

14 Kayankerni Sanctuary

Total Declared Area	Marine Area
953.25 ha	1952 ha

Percentage of Marine Area out of Total Declared Area | 99%

Date of Declaration 11.04.2019

- Consists of an offshore reef made up of reef complexes and shoals.
- Provides critical habitats for a high diversity of fish and invertebrates.

15 Kokilai Sanctuary

Total Declared Area: 1995 ha

Marine Area: 1995 ha

Percentage of Marine Area out of Total Declared Area: 100%

Date of Declaration 18.05.1951

- Consists of the Kokkilai Lagoon a large estuarine lagoon and surrounding area.
- The area contains seagrass beds, oyster beds, mangrove swamps, deltas, mudflats, scrub forests, and open forests.
- Declared primarily to protect important habitats for migratory and resident waterbirds. Famous wintering area for large numbers of greater flamingos.

16 Kudumbigala Panama Sanctuary

Total Declared Area: 6533.91 ha

Marine Area: 326.6 ha

Percentage of Marine Area out of Total Declared Area: 5%

Date of Declaration 20.02.2006

- Located primarily on land with extensive shoreline coverage.
- Area is made up of wetlands, lagoons, estuaries, mangroves, salt marshes, sand dunes, scrubland and forest vegetation.
- Important feeding and resting habitats for turtles and fish species.

17 Little Sobar Island & Great Sobar Island Sanctuary

Total Declared Area: 6.47 ha

Marine Area: 6.47 ha

Percentage of Marine Area out of Total Declared Area: 100%

Date of Declaration 21.06.1963

- Consists of two islands and surrounding waters.
- Declared for historical and archaeological reasons.
- Coral reefs located within the sanctuary do provide critical protection to several fish and invertebrate species.

18 Nimalawa Sanctuary

Total Declared Area: 1066.00 ha

Marine Area: 36.24 ha

Percentage of Marine Area out of Total Declared Area: 3.4%

Date of Declaration 18.02.1993

19 Paraitive Sanctuary

Total Declared Area: 97.1 ha

Marine Area: 97.1 ha

Percentage of Marine Area out of Total Declared Area: 100%

Date of Declaration 18.05.1973

- Consists of a small island and surrounding area with potential coral reefs and seagrass meadows.

20 Rekawa Sanctuary

Total Declared Area	Marine Area	Percentage of Marine Area out of Total Declared Area
271 ha	226 ha	83%

Date of Declaration 25.05.2006

- Consists of a sandy beach and adjacent water.
- Declared primarily to protect endangered turtles that use the beach for nesting.

21 Rocky Island Sanctuary

Total Declared Area	Marine Area	Percentage of Marine Area out of Total Declared Area
1.2 ha	1.2 ha	100%

Date of Declaration 25.10.1940

- Consists of a small offshore island.
- Important area for seabirds.

Rumassala © Winner Igor

22 Rumassala Sanctuary

Total Declared Area	Marine Area	Percentage of Marine Area out of Total Declared Area
170.7 ha	160 ha	94%

Date of Declaration 03.01.2003

- Consists of a small near-shore coral reef and hilly headland.
- The hilly headland has several endemic, endangered and medicinally important trees.
- Reef provides important habitat for several fish species.

23 Seruwila Sanctuary

Total Declared Area	Marine Area	Percentage of Marine Area out of Total Declared Area
15539.9 ha	606.05 ha	3.9%

Date of Declaration 10.09.1970

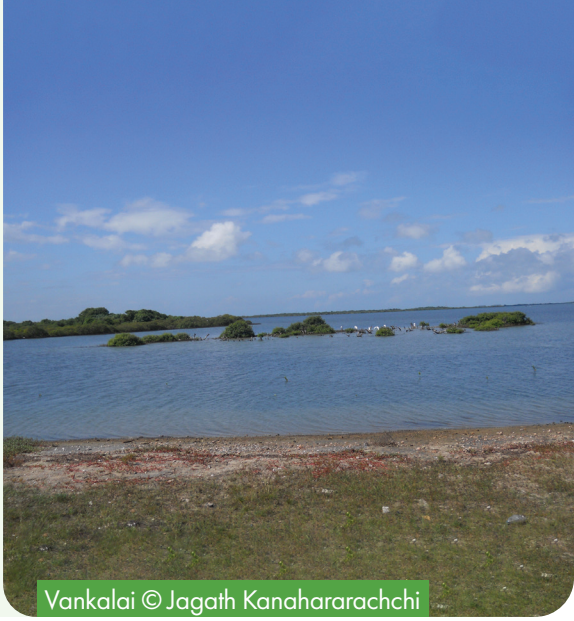
- Consists of parts of the coastal lagoon Ullackalie.
- The area contains extensive mangroves and shallow water habitats.
- Provides important habitats for large waterbirds (migratory and resident), migratory ducks and shorebirds.

24 Vankali Sanctuary

Total Declared Area 4838.95 ha | Marine Area 3014 ha | Percentage of Marine Area out of Total Declared Area 62%

Date of Declaration 08.09.2008

- Consists of the area between Mannar island and the mainland including the causeway.
- Area is made up of several ecosystems including arid-zone thorn scrubland and pastures, maritime grasslands, sand dunes, mangroves, salt marshes, wetlands, lagoons, tidal flats and sea-grass beds.
- Important habitat for several resident and migratory waterbird species, various species of fish, turtles and dugongs.



Vankalai © Jagath Kanahararachchi

Nature Reserves

25 Nagarkovil Nature Reserve

Total Declared Area 7882 ha | Marine Area 5242 ha | Percentage of Marine Area out of Total Declared Area 66%

Date of Declaration 01.03.2016

- Consists of the Jaffna Lagoon, part of the lagoon and sea shoreline.

26 Nandikadal Nature Reserve

Total Declared Area 4141.67 ha | Marine Area 3602 ha | Percentage of Marine Area out of Total Declared Area 87%

Date of Declaration 24.01.2017

- Consists of the Nanthi Kadal Lagoon.
- Proposed as a sanctuary in 2010 due to presence of migratory and resident birds that use the area for feeding and roosting.

27 Nayaru Nature Reserve

Total Declared Area 4464.35 ha | Marine Area 1116.08 ha | Percentage of Marine Area out of Total Declared Area 25%

Date of Declaration 24.01.2017

- Consists of the Nayaru Lagoon and surrounding area.
- It contains important wetland and mangrove habitats.
- Important location for several migratory and resident birds that use the area for feeding and roosting.

28 Vidathalthive Nature Reserve

Total Declared Area 29180 ha | Marine Area 22412 ha | Percentage of Marine Area out of Total Declared Area 77%

Date of Declaration 01.03.2016

- Covers a large area of open sea with some terrestrial land.
- Made up of seagrass meadows, mangroves and coral reef island.
- Home to the largest mangrove ecosystem in Sri Lank and the only location in the country where mangroves grow facing the sea.
- The seagrasses are critical habitat for dugongs whilst the mangroves provide shelter to several juvenile fish and crustacean species.

APPENDIX 2. USEFUL RESOURCES

Sri Lankan Environmental Legislation

- National Environmental Action Plan 2022-2030: Pathway to sustainable development. The Ministry of Environments action plan provides useful summaries of Sri Lanka's legislation and commitments across all environmental elements.
- The Protection and Conservation of Marine Environment in Sri Lanka; A Law and Policy Review is a review completed by Environmental Foundation (Guaranteed) Ltd under the COLBRI project in 2022 and provides detailed overview of marine policy and legislation in Sri Lankan, including MPAs.

Stakeholder Engagement

- The MPA Fisheries Management Toolkit provides a resource for those involved in, and affected by, fisheries management decision-making. This toolkit lays out the key elements to consider in establishing a participatory approach to implementing management in MPAs, including developing active stakeholder participation in MPA Management. Whilst the MPA Fisheries Management Toolkit was designed for application in UK waters the general topics and information are transferable internationally.
- The Biodiversa+ Stakeholder Engagement Handbook is designed to assist research teams identify relevant stakeholders to engage with in order to enhance the impact of their work.
- WWF/NOAA Stakeholder Engagement describes participatory approaches for the planning and development of MPAs.
- OSPAR guidance highlights good practice for communicating with stakeholders on the establishment and management of MPAs.
- Pacific handbook for gender equity and social inclusion in coastal fisheries and aquaculture gives practical guidance on improving gender and social inclusion in coastal fisheries and aquaculture for staff working in fisheries agencies in Pacific Island countries and territories.

MPAs and PAs

- The MPA Guide a science-based tool and framework to identify different types of MPAs and connect these types of MPAs with the outcomes they are expected to achieve.
- Marine Protection Glossary is a website hosted by Marine Protection Atlas that brings together various marine protection definitions and categories.
- IUCN Guidelines for Applying Protected Area Management Categories

MPAs and Climate Change

- The Climate Change Resilience and Adaption Planning Tool is designed to support MPAs in considering climate change as they work to improve their immediate and ongoing management.
- International Partnership on MPAs, Biodiversity and Climate Change collates evidence to support decision makers understand the role of MPAs and biodiversity in tackling climate change.
- Climate Adaption Knowledge Exchange collates resources, case studies and tools to support understanding on climate adaption.

MPA Governance

- Enabling Effective and Equitable Marine Protected Areas: guidance on combining governance approaches. Provides a practical guide on MPA governance approaches.

MPA Management

- Maldives National Framework For Management of Protected & Conserved Areas 2024-2029 an example of management framework from the Maldives.
- Maldives National Management Plan Guidance for Protected and Conserved Areas. 2024 is developed to help site managers in writing and developing management plans.
- Marine Mammals Management Toolkit to develop the technical capacities of managers, policy makers and marine practitioners.

Examples of management plans

- The Ascension Island Marine Protected Area Management Plan 2021-2026
- Coral Sea Marine Park Management Plan 2018, Australia
- Management Plan Glover's Reef Marine Reserve 2019-2023, Belize
- Papahānaumokuākea Marine National Monument Management Plan 2008, United States

MPA Assessments

- The Northern Island MPA Network Stocktake was completed in 2018 by JNCC to support Northern Island to identify if further MPA designations would be required to meet national and international commitments.
- SAGE (Site-level Assessment of Governance and Equity) focuses on the evaluation and improvement of governance and equity of measures to conserve biodiversity, ecosystem services and any associated measures to support conservation such as benefit sharing schemes.

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The Ocean Country Partnership Programme (OCPP) is a bilateral technical assistance and capacity building programme that provides tailored support to countries to manage the marine environment more sustainably, including by strengthening marine science expertise, developing science-based policy and management tools and creating educational resources for coastal communities. The OCPP delivers work under three thematic areas: biodiversity, marine pollution, and sustainable seafood. Funding is provided through the overarching Blue Planet Fund (BPF) by the UK Department for the Environment, Food and Rural Affairs (Defra).

UK International Development

Partnership | Progress | Prosperity