JNCC Report 781

Development and testing of the Management Effectiveness of Protected and Conserved Areas (MEPCA) Indicator

Vol I

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Summary

Transformational change is required to protect global biodiversity, which has been declining faster in the last 50 years than at any other time in human history. In efforts to protect biodiversity, the global protected area (PA) network has expanded over the past few decades. In December 2022, the Convention on Biological Diversity (CBD) adopted a global target to ensure that at least 30% of terrestrial, inland water and of coastal and marine areas are "*effectively conserved and managed*" within PAs and other effective area-based conservation measures (OECMs) by 2030. This target – now Target 3 of the Kunming-Montreal Global Biodiversity Framework (GBF) requires appropriate indicators to measure progress.

To date, indicators of PA management effectiveness have largely focused on whether an assessment of management effectiveness is in place, rather than understanding how effective management is. The Joint Nature Conservation Committee (JNCC), in partnership with the Department for Environment, Food and Rural Affairs (Defra), address this gap by building on existing methods, including Protected Area Management Effectiveness (PAME) assessments, to develop and test a new global indicator that measures the effectiveness of protected and conserved areas (PCAs). A key aim of the indicator was to draw focus to the delivery of conservation outcomes, which are often difficult to measure and lacking from current management assessment methods that pertain more to process rather than outcomes. Additional aims included ensuring the indicator was relatively simple to measure, easy to understand, and flexible, so that it could be applied globally to marine, coastal and terrestrial PCAs and OECMs.

The Management Effectiveness of Protected and Conserved Areas (MEPCA) indicator (Figure 1) was initially developed based on the approach used by the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention). This method is constructed of four questions and has been successfully applied for several years to report on the status of Marine Protected Areas (MPAs) in the North-East Atlantic.

JNCC led engagement with PCA management authorities in Australia, the British Indian Ocean Territory, Canada, Costa Rica, Saint Helena, and Scotland to test the indicator, assess its global applicability and aid its further development. The indicator was further socialised via an online workshop in November 2022 and via presentations at MedPAN 2022, CBD COP15 in Montreal (2022), at the Fifth International Marine Protected Area Congress (IMPAC5) in Vancouver (2022) and at the Progress in Marine Conservation conference (2023). Feedback was used to update the indicator and inform guidance to reduce any subjectivity ensuring the metrics could be answered as reliably as possible.

The successful development of the indicator was recognised by its inclusion as a complementary indicator within the Monitoring Framework agreed at COP15 to be used to monitor progress for the implementation of the Kunming-Montreal Global Biodiversity Framework.
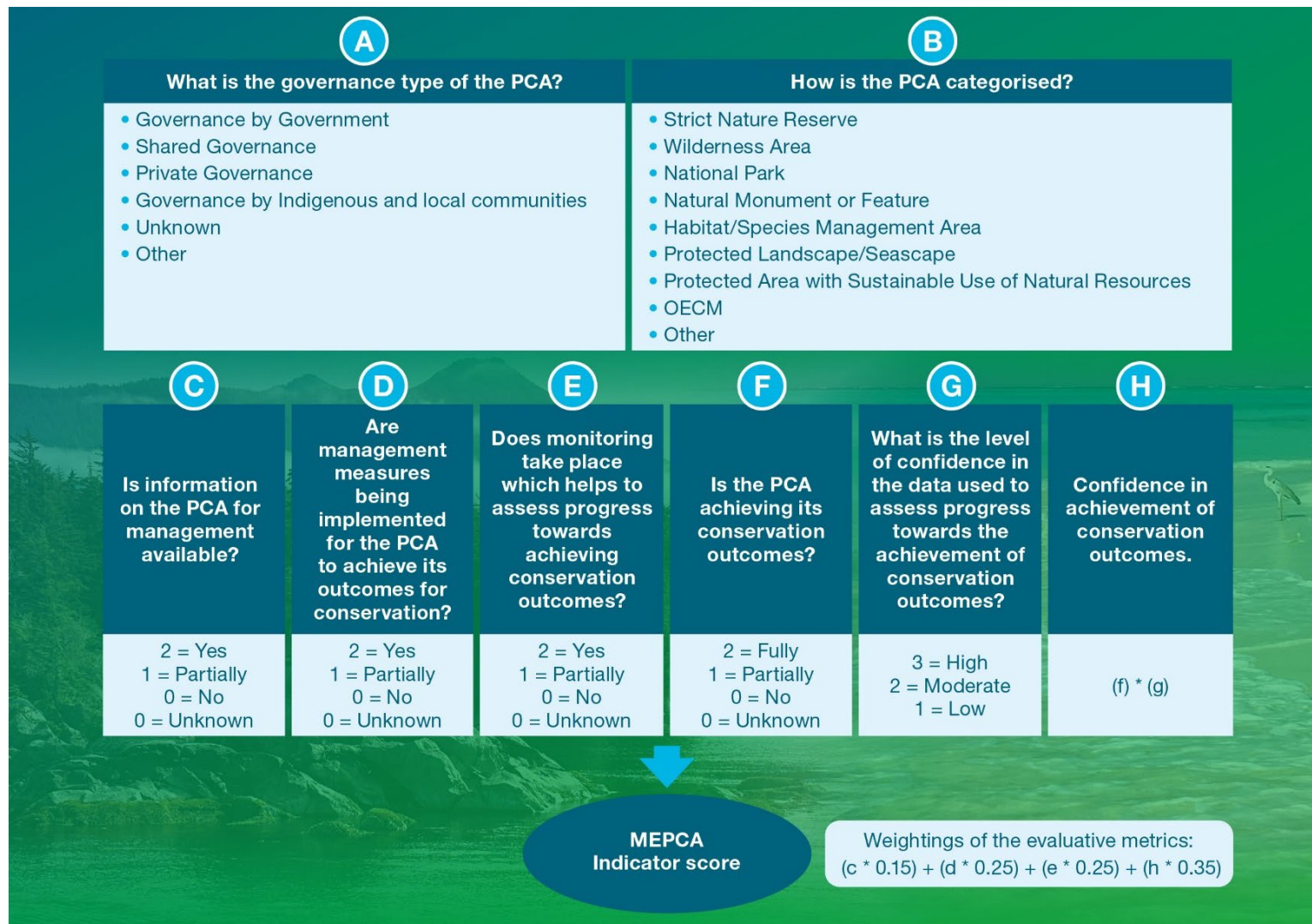
Figure 1. The Management Effectiveness of Protected and Conserved Areas (MEPCA) Indicator v1.

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Acronyms

Acronym	Definition
BIOT	British Indian Ocean Territory
CBD	Convention on Biological Diversity (1992)
CEPA	Government of Papua New Guinea's Conservation and Environmental Protection Authority
COP	Conference of the Parties
CPs	Contracting Parties
CRPAME assessment	Costa Rican Protected Area Management Effectiveness assessment
CWS	Canadian Wildlife Service
Defra	Department of Environment, Food and Rural Affairs
DR MPA	Demonstration and Research Marine Protected Area
ECCC	Environment and Climate Change Canada
ENRP	Environment, Natural Resources and Planning Portfolio
EoH	Enhancing our Heritage
GBF	Kunming-Montreal Global Biodiversity Framework
GD-PAME	Global Database on Protected Area Management Effectiveness
HELCOM	Baltic Marine Environment Protection Commission (Helsinki Commission)
ICG-MPA	Intersessional Correspondence Group on Marine Protected Areas
ICNH	Catalan Institution for Natural History
IMPAC5	5th International Marine Protected Areas Congress
IPA	Indigenous Protected Area
IPLCs	Indigenous Peoples and Local Communities
IUCN	International Union for the Conservation of Nature
IUCN-EARO	IUCN's Eastern African Regional Office
IUCN-WCPA	IUCN's World Commission on Protected Areas
IUU fishing	Illegal Unregulated Unreported fishing
JNCC	Joint Nature Conservation Committee
MBS	Migratory Bird Sanctuaries
MedPAN	Mediterranean Protected Areas Network
MEPCA indicator	Management Effectiveness of Protected and Conserved Areas Indicator
METT	Management Effectiveness Tracking Tool
METT-SA	South Africa's Management Effectiveness Tracking Tool
MMO	Marine Management Organization

Acronym	Definition
MPA	Marine Protected Area
NGO	Non-Governmental Organization
NIAA	National Indigenous Australians Agency
NWA	National Wildlife Area
OECM	Other Effective area-based Conservation Measures
OSPAR	Oslo/Paris Convention for the Protection of the Marine Environment of the North-East Atlantic (1992)
PA	Protected Area
PAME	Protected Area Management Effectiveness
PCA	Protected and Conserved Areas
PNG-METT	Papua New Guinea Management Effectiveness Tracking Tool
RAPPAM	Rapid Assessment and Prioritization of Protected Area Management
SINAC	Sistema Nacional de Áreas de Conservación
UNDP	United National Development Programme
UNEP-WCMC	United Nations Environment Programme World Conservation Monitoring Centre
UNESCO	United Nations Educational, Scientific and Cultural Organization
WDPA	World Database on Protected Areas
WWF	World Wide Fund for Nature

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1. Introduction

Transformational change is required to protect global biodiversity, which has been declining faster in the last 50 years than at any other time in human history (IPBES 2019). In efforts to protect biodiversity, the global protected area (PA) network has expanded over the past few decades. As of September 2024, at least 17.51% of land and inland waters and 8.346% of global ocean were covered by PAs and other effective area-based conservation measures (OECMs[1]) (UNEP-WCMC & IUCN 2024). In recent years, there has been growing international interest to protect at least 30% globally of the land and of the ocean by 2030 (Dinerstein *et al.* 2019; Jones *et al.* 2020), culminating in the adoption of Target 3 (known as the 30by30 target) by the Convention on Biological Diversity (CBD) Conference of the Parties (COP) in December 2022 to conserve at least 30% of the world's land and of the ocean within PAs and OECMs by 2030 (CBD 2022). As global coverage of PAs and OECMs increases, it is vital to ensure that they are not only designated but are managed effectively to achieve positive outcomes for biodiversity.

The Kunming-Montreal Global Biodiversity Framework (GBF) contains 23 'Kunming-Montreal 2030 Global Targets' for urgent actions to conserve biodiversity (CBD 2022). Target 3 focusses on PAs and OECMs:

'Ensure and enable that by 2030 at least 30 per cent of terrestrial, inland water, and of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem functions and services, are effectively conserved and managed through ecologically representative, well-connected and equitably governed systems of protected areas and other effective area-based conservation measures, recognizing indigenous and traditional territories, where applicable, and integrated into wider landscapes, seascapes and the ocean, while ensuring that any sustainable use, where appropriate in such areas, is fully consistent with conservation outcomes, recognizing and respecting the rights of indigenous peoples and local communities, including over their traditional territories.'

Indicators are required to monitor how well this target is being met. Whilst there are well-established operational indicators to measure global coverage of terrestrial and marine PAs and OECMs (UNEP-WCMC & IUCN 2024)), there previously has been no widely adopted global indicator that measures how effectively these areas are conserved and managed.

Existing indicators of PA effectiveness have largely focused on whether an assessment of management effectiveness has taken place rather than understanding how effective the management is. The Global Database on Protected Area Management Effectiveness (GD-PAME; Coad *et al.* 2015) was developed as the official repository of assessments of PA management effectiveness and forms the basis of the existing Protected Area Management Effectiveness (PAME) indicator. However, the data on management effectiveness held within the GD-PAME were collected using various methods that were not originally designed for use as a global indicator, and consequently the PAME indicator only measures the number of protected areas for which an assessment has been undertaken. This has been likened to "*measuring progress on poverty alleviation by counting the number of people with a bank account rather than whether they have the resources to sustain themselves*" (Geldmann *et al.* 2021). Furthermore, existing methods of assessing PAME have focused

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[1] Definition, as adopted by CBD COP14 in November 2018: '*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*' (CBD 2018).

largely on management processes and insufficiently on biodiversity outcomes (Visconti *et al.* 2019). Therefore, an urgent need was identified for the development of a new indicator to allow the global community to track whether the world's Protected and Conserved Areas (PCAs), including OECMs, are effectively managed and achieving outcomes for biodiversity.

In response to this need, JNCC, commissioned by the Department for Environment, Food and Rural Affairs (Defra) have developed a new globally applicable indicator for both PAs and OECMs, referred to as Protected and Conserved Areas (PCAs), known as the Management Effectiveness of Protected and Conserved Areas (MEPCA) indicator. The MEPCA indicator was designed with a strong focus on achievement of conservation objectives and outcomes, to be applicable at the national and global level, for terrestrial, coastal and marine areas.

2. Review of Protected Area Management Effectiveness assessment methods

A review was completed of existing PAME methodologies to gain insights into the lessons learned and to inform the development of the MEPCA indicator. These include PAME assessments, which have been applied in different regions worldwide, such as the OSPAR Convention approach that has been successfully applied across MPAs in the North-East Atlantic.

PAME assessments evaluate how well PAs are managed and were originally developed to inform adaptive management of PAs at site or system level. The International Union for the Conservation of Nature World Commission on Protected Areas (IUCN-WCPA) developed a framework for the evaluation of PAME (Hockings *et al.* 2006) in the 1990s to encourage the use of standards for PA assessment and reporting and to allow consistency of approach across multiple assessment methodologies.

The IUCN-WCPA defined PAME as 'the assessment of how well an area is being managed – primarily the extent to which it is protecting values and achieving goals and objectives' (Hockings *et al.* 2006). The framework is based on three key themes: PA design and planning issues, adequacy and appropriateness of management systems and processes, and delivery of PA objectives including conservation of values. These three themes are captured by six key elements: context, planning, inputs, process, outputs and outcomes (Figure 2).

Figure 2. The six elements making up the IUCN-WCPA framework (Lacerda *et al.* 2007).

Although most PAME assessments are based on the IUCN-WCPA framework, there are now more than 70 PAME methodologies and toolkits that have been developed and applied in countries across the world. Each of these have been adapted to suit assessors' various needs and goals, catering to the wide range of PA sizes, habitats and governance types. PAME methodologies usually involve self-assessment surveys, which may include questions on progress towards specific management objectives and assessment of quantitative data if available. Assessments can then be scored to allow assessors to understand how well PAs are performing.

To support the MEPCA indicator development, five key PAME methodologies (Section 2.1) have been reviewed in detail along with a global evaluation (Section 2.2), and several country-specific case studies (Volume II, appendix 4)

2.1   Summary of Key PAME Methodologies

Of the over 70 different PAME methods, the commonly applied ones include: the Management Effectiveness Tracking Tool (METT), Rapid Assessment and Prioritization of Protected Area Management (RAPPAM), Enhancing Our Heritage Toolkit (EoH), IUCN Green List and the MPA Guide. This section provides further detail on each methodology.

Management Effectiveness Tracking Tool (METT)

The Management Effectiveness Tracking Tool (METT) is the most widely used PAME tool in the world, having been applied in over 5,000 PAs (Stolton *et al.* 2021). Parties to the CBD are encouraged to use the tool for consistency. It was initially developed by the World

Wildlife Fund (WWF) Alliance and the World Bank in 2002, as a site-based assessment tool to measure and monitor PAME over time (Stolton *et al.* 2007). Many reviews and improvements have been made to METT over the years, and the current version is called METT-4 (Stolton *et al.* 2021).

METT can be applied in all types of biomes, and governance, of PAs. It is a simple, cheap, and flexible method to provide a quick overview of PA effectiveness, with guidance indicating that the assessment takes about two days to complete. As the METT mainly relies on qualitative data, it largely depends on assessors' judgements and works best when a diverse group of stakeholders can input into the assessment, debating answers to questions carefully to reach consensus. The tool is more effective at addressing changes in a single PA over time, rather than comparing sites in detail. It can capture important strengths and weaknesses of management and help convert these into an action plan.

METT-4 is based in Excel, speeding up the process of inputting and analysing the data, providing consistency, and ensuring users fill out each part of the assessment as warning messages appear if a question has been missed. In response to feedback from users, more emphasis was placed on conservation outcomes in METT-4 than in previous versions, although measuring conservation outcomes is not the primary purpose of the tool. The METT consists of two main sections: datasheets of key information on the PA and an assessment form containing 38 questions that are scored (Figure 3).

METT scores per question	Year of Assessment	0		☐ Show Guidance
No. Question	**Maximum METT score**	**Your METT score** (this column will be filled automatically as the METT is completed)	**Your METT score from last assessment (if available)**	**Management element**
1 Does the PA have legal status or is it established through "other effective means"?	3	0		Planning
2 Is management undertaken to achieve the objectives of the protected area?	3	0		Planning
3 Are appropriate regulations/controls in place to manage use and activities in accordance with the management objectives of the protected area?	3	0		Process
4 Does land and sea use planning outside of the protected area recognise the protected area and contribute to the achievement of management objectives?	3	0		Planning
5 Is the protected area the right size and shape to protect species, habitats, ecological processes and water catchments of key conservation concern?	3	0		Planning
6 Is the boundary known and demarcated?	3	0		Process
7 Is there a management plan or equivalent and is it being implemented?	3	0		Planning
7a-c Additional points: Planning process	3	0		Planning
8 Is there a regular work plan and is it being implemented?	3	0		Planning
9 Do you have enough information to manage the area?	3	0		Inputs
10 Are there enough people to manage the protected area?	3	0		Inputs

Figure 3. First 10 questions in the METT-4 questionnaire (Stolton *et al.* 2021).

Rapid Assessment and Prioritization of Protected Area Management (RAPPAM)

Rapid Assessment and Prioritization of Protected Area Management (RAPPAM) is a commonly used PAME assessment method developed by WWF (Evrin 2003). Initially developed for PAs in forests, it has since been adapted and applied to other biomes including savannahs and wetlands. RAPPAM is consistent with the IUCN-WCPA framework and is designed to assess a whole system (multiple sites) to identify the main trends and issues that must be addressed to improve management effectiveness.

The RAPPAM method has five steps: (1) Determining the scope of the assessment, (2) Assessing existing information for each PA, (3) Administering the Rapid Assessment questionnaire (Figure 4), (4) Analysing the findings, and (5) Identifying next steps and recommendations. RAPPAM is usually implemented through interactive workshops with PA managers, policy managers and other stakeholders. The broad representation of stakeholders at these workshops can strengthen support for implementation.

RAPPAM may be most effective when comparing PAs with similar objectives and thus is often used to assess a full network of PAs. Although RAPPAM was not developed to provide detailed adaptive management guidance at the site level, it can be used to develop site-level monitoring tools.

Figure 4. A section of RAPPAM relating to Protected Area (PA) objectives (Evrin, 2003).

Enhancing Our Heritage (EoH) Toolkit

The Enhancing Our Heritage (EoH) Toolkit was developed by the UNESCO World Heritage Centre, IUCN and other partners, including PA managers at World Heritage sites in Africa, South Asia and Latin America (Hockings *et al.* 2008).

The toolkit was designed to provide information on condition and management of World Heritage Sites to assist managers in effectively dealing with management challenges to reach their management objectives. The toolkit is based around the IUCN-WCPA framework and is based on 'learning by doing'. The toolkit consists of 12 tools, from tool (1) Identifying site values and management objectives, to tool (12) Review of management effectiveness assessment results.

IUCN Green List

The IUCN Green List of Protected and Conserved Areas (the 'Green List') has been developed as a global standard for assessing and recognizing well-managed and effectively conserved PCAs. It provides a framework for measuring the effectiveness of PCAs and recognises those that meet the "global standard" of governance, management, and conservation outcomes (Hockings *et al.* 2019).

The Green List was developed by the IUCN Global Protected Areas Programme and WCPA. After a pilot phase from 2012 to 2014, the "global standard" was approved by the IUCN council in 2017 (IUCN and WCPA, 2017). The overarching aim of the Green List Programme is to increase the proportions of PCAs that deliver successful conservation outcomes.

To reach its goals, the programme developed a "standard", the IUCN Green List Standard. Its aim is to provide a universal and adaptable measure of effectiveness of management and conservation outcomes (IUCN & WCPA 2017).

The IUCN Green List Standard is built around four components. The first three components (Good Governance, Sound Design and Planning, and Effective Management) work together to reach the fourth component, Successful Conservation Outcomes (Figure 5). A total of 17 criteria are spread across the different components, supported by indicators allowing to measure the performance of the sites. The "Effective Management" component is the largest, as it contains seven criteria (Figure 6).
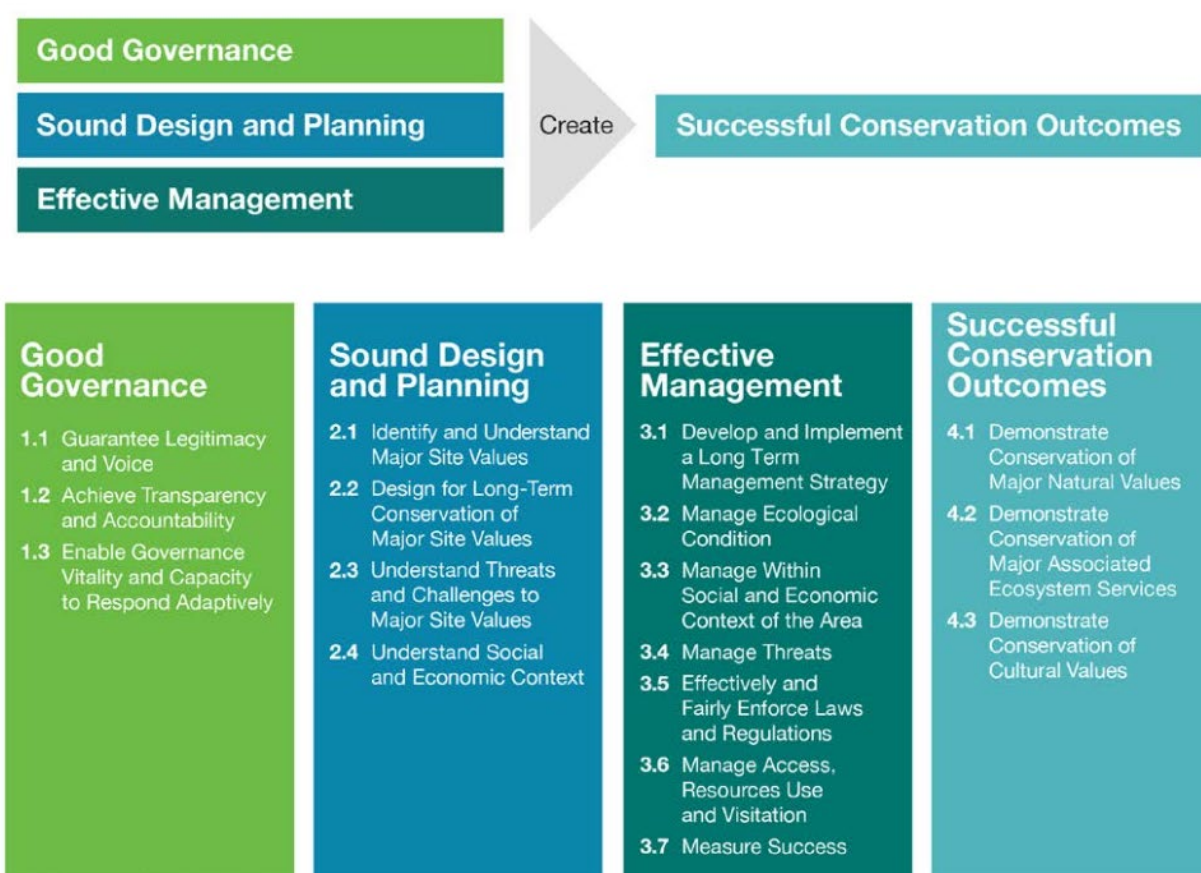
Figure 5. The four components of the Green List standard and 17 associated criteria (IUCN & WCPA 2017). A total of 50 potential indicators help to assess whether PCAs meet the criteria.

Component 3: **Effective Management**

Green List sites are managed effectively

Criterion 3.1 **Develop and Implement a Long-Term Management Strategy**	The site has a long-term strategy that provides a clear explanation of the overall goals and objectives of management (explicitly including the conservation of the area's major values and achievement of its social and economic goals and objectives). This is reflected in an up-to-date management plan or its functional equivalent, which: • Provides clear and appropriate management directions: Strategies and actions specified in plans, policies and procedures are appropriate and sufficient to achieve the planned goals and objectives for the area. • Demonstrates adequate capacity to manage effectively: Key strategies and associated activities to achieve goals and objectives in the long-term are supported by adequate financial and human resources, adequate staff competency, capacity development and training; appropriate access to equipment and adequate infrastructure; and measures are in place to deal with critical shortfalls.
Criterion 3.2 **Manage Ecological Condition**	Management can clearly demonstrate that ecological attributes and processes are being managed to maintain the area's major natural values and associated ecosystem services.
Criterion 3.3 **Manage Within the Social and Economic Context of the Area**	Management can clearly demonstrate that: - Rights-holders and stakeholders are recognized and engaged effectively by management, and their interests are fairly and fully considered; - The social and economic benefits of the area are recognized, promoted and are being maintained, OR, where such maintenance is incompatible with the maintenance of the area's natural values, any restrictions are designed and implemented in consultation with, and preferably following the free, prior and informed consent of right-holders and stakeholders.
Criterion 3.4 **Manage Threats**	Threats are being actively and effectively responded to, so that their impact is not compromising the maintenance of major site values or the achievement of the area's goals and objectives.
Criterion 3.5 **Effectively and Fairly Enforce Laws and Regulations**	Relevant laws, regulations and restrictions are fairly and effectively applied in all aspects of the protected area management and operations.
Criterion 3.6 **Manage Access, Resource Use and Visitation**	When permitted, activities within the area that involve direct access to resources are compatible with and support the achievement of the area's conservation goals and objectives, meet the needs of users, and are properly regulated. When permitted, tourism and visitor management are compatible with and support the achievement of the area's conservation goals and objectives.
Criterion 3.7 **Measure Success**	Monitoring, evaluation and learning provide an objective basis for determining measures of success. Monitoring and assessment programmes should be capable of providing data on: – Whether each of the site's major values is being successfully protected; – Level and intensity of threats; and – Achievement of management goals and objectives. As appropriate, thresholds may be determined by changes in major values over a specified time period compared to those anticipated without the protected and conserved area.

Figure 6. Description of the seven criteria in the Green List Effective Management Component (IUCN & WCPA 2017).

The IUCN Green List Standard also aims to provide an assurance that PCAs "are effectively and equitably managed and achieving successful conservation of their values" through an evaluation process. Throughout three different phases, the PCAs are evaluated against the indicators of the 17 criteria, and an assessment (including a stakeholder consultation) is conducted by an Expert Assessment Group for the Green List (EAGLE) (IUCN & WCPA 2017). After the certification has been gained, the candidate site receives the "IUCN Green List" status for a period of five years. The Green List aims to provide continuous support to

ensure the sites maintain or move towards achieving their conservation outcomes (Hockings *et al.* 2019).

While the certification process may not be achievable for all PCAs, the aim of the standard is that it can still lead to better conservation outcomes by acting as a framework and an ideal to shape management objectives around (Hockings *et al.* 2019).

MPA Guide

The MPA Guide, written by Grorud-Colvert *et al.* (2021), is a science-driven framework, derived from literature reviews and expert working group products, which can be used by scientists, managers, policymakers, and communities to aid in the design and evaluation of marine protected areas (MPAs). It complements the IUCN PA categories to provide a comprehensive view of an MPA.

The IUCN definition of an MPA 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*'. The MPA guide states that if an MPA meets the IUCN definition of an MPA then it will fit into a **Stage** of establishment and a **Level** of protection at a point in time.

The **Stages** of establishment, which relate to an MPA's position in the MPA cycle, are as follows:

1. Proposed or committed by governing or organising body

2. Designated by law or other authoritative rulemaking

3. Implemented with regulations

4. Actively managed with monitoring and adaptive management

Note that these stages are equivalent to questions in the OSPAR management status approach, which assesses the management status of OSPAR MPAs, as discussed below in Section 2.3. Stages (i) and (ii) in the MPA Guide are equivalent to Question 1 in the OSPAR management status approach, (iii) is equivalent to Question 2, and (iii) and (iv) are equivalent to Question 3.

The MPA guide states that the **Levels** of MPA protection, which can be determined according to the activities that are allowed in an MPA, are as follows:

1. Fully protected – no impact from extractive or destructive activities

2. Highly protected – minimal impact

3. Lightly protected – moderate impact

4. Minimally protected – high total impact

The **Conditions** that enable effective MPAs vary with the MPA **Stage** of establishment. These conditions include how an MPA is effectively planned, designed, implemented, governed and managed to achieve desired ecological outcomes and human well-being outcomes that result. The **Outcomes** of an MPA depends directly on the **Stage**, **Level** and **Conditions** (Figure 7).
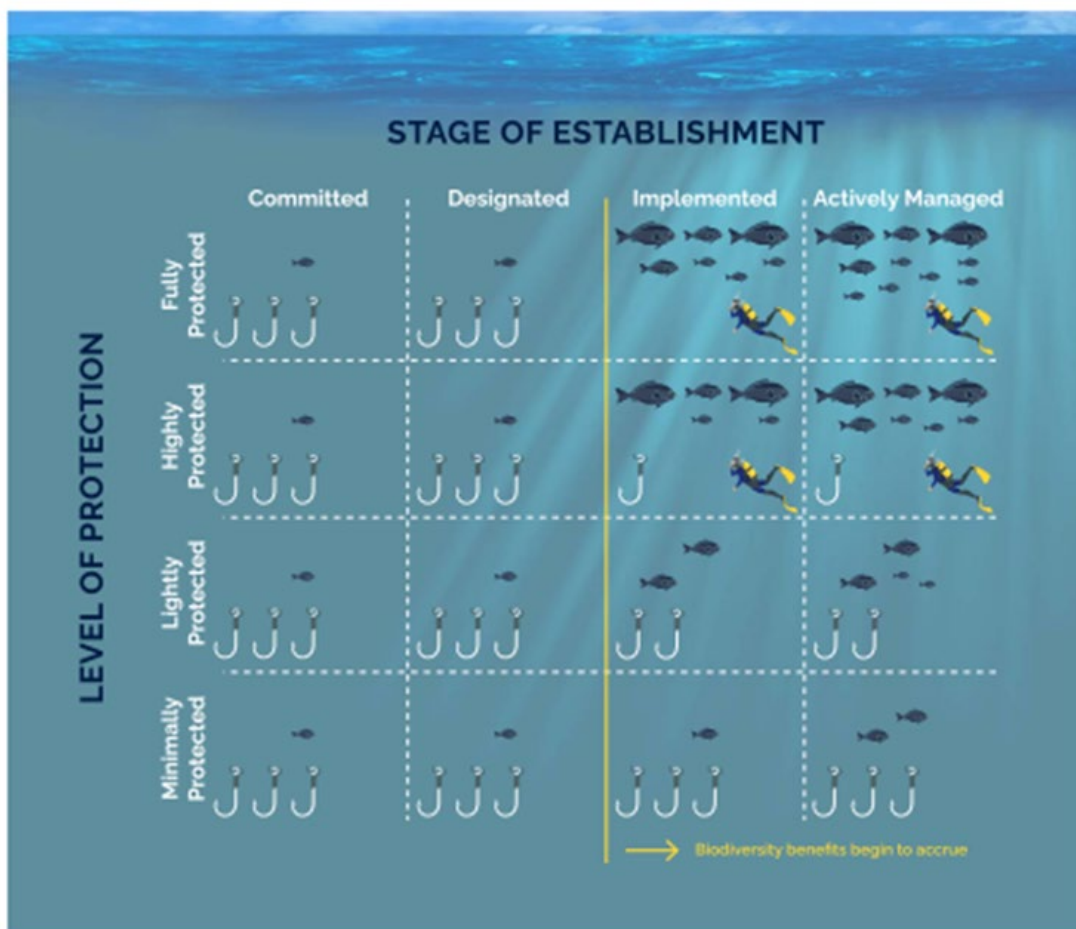
Figure 7. The Outcomes of an MPA may sit in one of 16 cells according to the MPA's Level and Stage, as long as Conditions are in place (Grorud-Colvert *et al.* 2021).

An aim of the MPA guide is for countries to incorporate *Stage* of establishment and *Level* of protection into global reporting towards international targets, including using them as indicators of progress towards meeting CBD targets. The framework could be used to create new MPAs or strengthen existing MPAs, and it could be applied similarly to terrestrial PCAs.

2.2   A Global Study into Management Effectiveness Evaluations

A Global Study on the management effectiveness of PAs was conducted in cooperation with many people around the world between 2005 and 2010 (Leverington *et al.* 2010). The study involved collating available information from 9000 PAME assessments from 140 countries, reviewing 70 PAME methodologies, creating a database on management effectiveness linked to the World Database on Protected Areas, and developing a common reporting format to determine the status of PAs on a country and system-wide scale.

To develop the common reporting format, a translation tool was used in Excel to distil results from diverse methodologies and scoring systems, enabling global reporting on a summary set of 14 indicators with 45 headline indicators that represented the major themes of the thousands of indicators used (Figure 8). One of the 14 summary indicators incorporated conservation outcomes, in which a headline indicator accounted for the proportion of stated objectives achieved. Protective area management was evaluated on a common scale of 0 to 1 for each headline indicator. The global assessment revealed that the average score for the proportion of stated objectives achieved was 0.58, and that PA management left 'much to be desired'.

The global assessment was successful at gaining insight into the progress of PA management on a country and system-wide scale, and at enabling cross-analysis of results. However, since PA systems often have their own individual circumstances for which assessments are tailored, developing a global indicator to encompass all these needs can be challenging. It can also be difficult to encourage people to adopt new or additional assessment methods when they have previously applied and accepted other methods. Very simple assessment tools, with only a few indicators, may be appropriate to prioritise and report across many PAs. Evaluations should not cause friction or lose trust between parties, and situations should be handled sensitively when assessments reveal negative trends. It is essential that evaluation findings are implemented in the field to strengthen PA management.
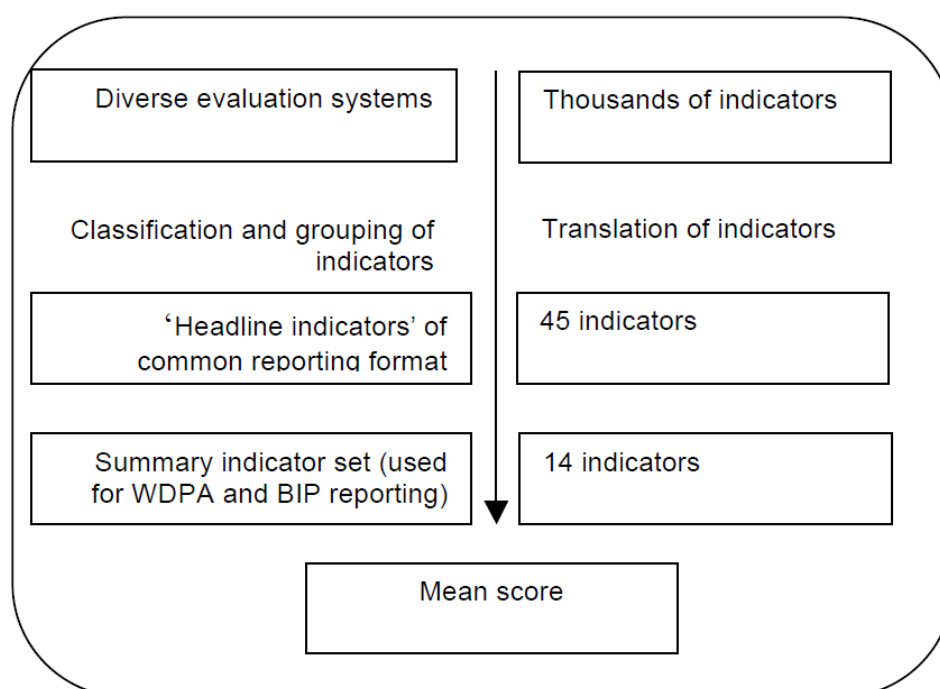
Figure 8. Summary of the method used to develop a common reporting format to assess the effectiveness of protected areas on a global scale (Leverington *et al.* 2010).

2.3 OSPAR Management Status Approach

As of 2022, a network of MPAs covered 10.9% of the OSPAR maritime area. At the OSPAR Ministerial Meeting 2021 in Cascais, Portugal, Ministers committed to ensuring that the OSPAR MPA network is effectively managed to achieve its conservation objectives. The OSPAR Intersessional Correspondence Group on Marine Protected Areas (ICG-MPA) developed a questionnaire-based approach to assess how many of the OSPAR MPAs are well-managed. While there is no formal agreement on what constitutes 'well-managed', the questionnaire poses four key questions that reflect progress around the implementation cycle of an MPA.

The results of the management status questionnaire are published every two years and can be found as Status Reports on the OSPAR website (OSPAR Commission [online], 2024). The UK, on behalf of the ICG-MPA, collates the results from the Contracting Parties and drafts the chapter on management status.

The management status results from each of the four questions are presented primarily as percentages:

- In 2016, full management information was received for 73% of 448 OSPAR MPAs (OSPAR Commission 2017).

- In 2018, full management information was received for 82% of 496 OSPAR MPAs (OSPAR Commission 2019).

- In 2021, full management information was received for 91% of 581 OSPAR MPAs (Hennicke *et al.* 2022).

- In 2023, full management information was received for 85% of 615 OSPAR MPAs (OSPAR Commission 2024).

The OSPAR management status questionnaire is split into two broad themes: 'consideration of the implementation of the MPA cycle' and a 'review as to whether the MPA is meeting its conservation objectives'. Questions A and B refer to the implementation of the cycle and questions C and D refer to meeting the conservation objectives. It is stated in the Status Reports that 'well-managed' is not specifically defined across the Contracting Parties (OSPAR Commission 2024). Differences in the interpretation of this term could cause bias in the responses. Question D, 'is the MPA moving towards, or has it reached its conservation objectives?', could have the greatest variability in interpretation due to its ambiguity.

The Contracting Parties are asked to respond to each of the four questions as: 'Yes, Partial, No, or Unknown'. Each question also has an accompanying 'comments' section which can be used to add additional information or to justify answers. A response of 'No response' is given when no information has been reported to OSPAR. An accompanying guidance document defines each response and gives examples of what evidence is needed to report against each answer to the four questions.

The guidance document is useful as it provides examples from different Contracting Parties' OSPAR MPA management status assessments (OSPAR Commission 2018). However, since OSPAR MPAs are all governed by Government, no examples are provided for assessments of PAs with other forms of governance.

The 'comments' section, which accompanies each response (A – D) in the questionnaire, allows Contracting Parties to provide contextual information that supports the understanding of the results. The information is used to support the management status reporting and to provide qualitative rationale behind each response.

The four main questions asked in the OSPAR management status questionnaire are summarised below.

A. Is MPA management documented?

This question explores whether information concerning the management of an OSPAR MPA has been published. Management, in this context, is interpreted as establishing the conservation objectives for protected features, documenting known pressures and threats that could affect protected features, listing management actions to address known pressures and threats, and finally showing spatial information on the distribution of protected features within a given OSPAR MPA.

B. Are measures to achieve conservation objectives being implemented?

This question explores whether specific management actions have been identified and put into place by site managers by a legal mechanism or other effective means to address known pressures and threats.

C.   Is monitoring in place to assess if measures are working?

This question explores whether specific monitoring focussed on the ecological status of protected features of the OSPAR MPA has taken place, or as a minimum, whether there is a means of monitoring the compliance of site users with implemented measures.

D. Is the MPA moving towards, or has it reached its conservation objectives?

This question explores whether information collected on the ecological status of the protected features of the OSPAR MPA shows the achievement of, or indicates movement towards achieving, a site's conservation objectives.

Confidence Scores

Since 2021, Contracting Parties have been asked to provide a confidence score for the achievement of conservation objectives (as reported in question D). The guidance document provides examples of which confidence score to apply, depending on the available monitoring data, to each MPA's conservation objectives. The responses range from *'High'*, *'Moderate'*, and *'Low'* to *'Not Applicable'*.

The results for each question in the OSPAR management status questionnaire are presented as 'barometers' (Figure 9), displaying the percentages of Yes and Partial responses. The percentages of all possible responses for each question are displayed in pie charts (Figure 10).
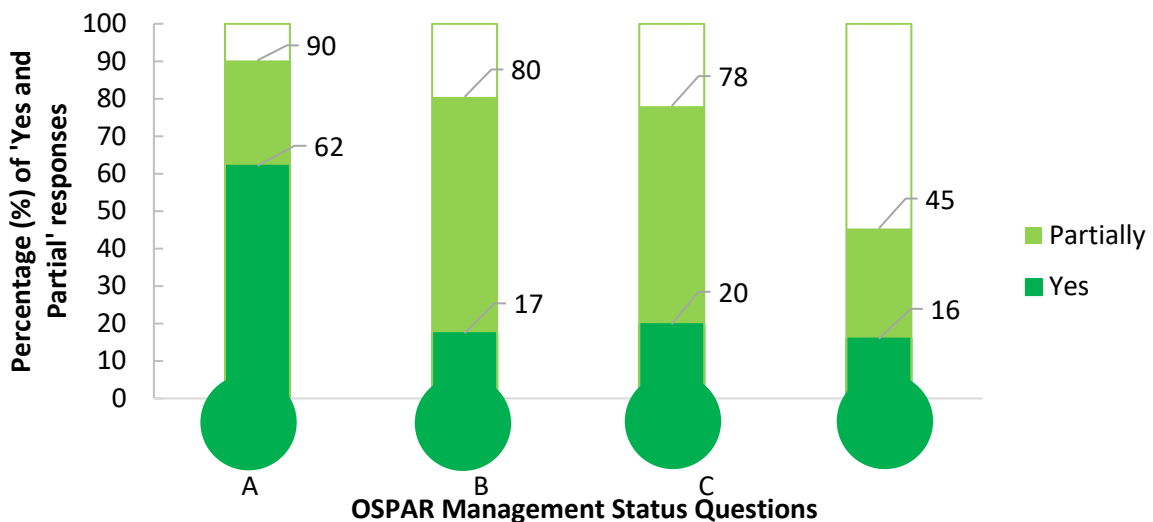
Figure 9. 2023 OSPAR MPA Management Barometer (OSPAR Commission 2024).
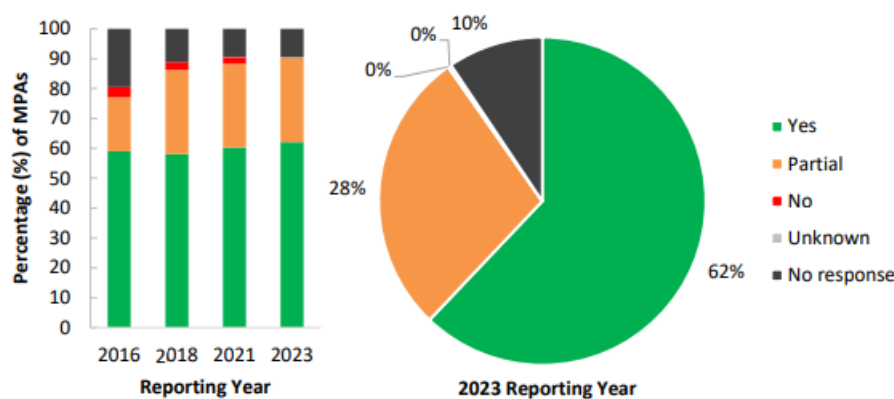
Figure 10. Results from 2023 OSPAR MPA Management Status question one: 'Is the MPA management documented?' (OSPAR Commission 2024).

Displaying the results of the four questions in bars and pie charts is a beneficial way to visually represent the responses. Presenting results as simple outputs, like a pie chart along with accompanying reference text, can help engage stakeholders and policymakers (van der Liden *et al.* 2014). Results are not statistically analysed but comments are qualitatively reviewed, justifying the reported category selection per question of each site's management status.

As the OSPAR management status reporting only refers to MPAs, which are managed solely by Governments, it is currently unknown whether the methodology can be used to indicate the effectiveness of management of PAs with other governance types.

2.4 Summary

PAME assessments provide valuable opportunities for PA managers to share knowledge, build capacity, and raise the management standards of their PAs. The assessments are advantageous in that they are highly flexible and can be adapted to suit assessors' different needs and goals. The assessments do not always require large amounts of resources to complete, enabling all, from individuals to Governments, to undertake them. The key benefit of PAME assessments is that they provide a baseline for uniform reporting, which can help guide monitoring and management objectives.

However, due to their flexibility, PAME assessments are inconsistent in the results they achieve globally. Assessments are often completed using qualitative data, and outcomes could therefore be considered as subjective, such as when based on local opinion or when lacking in evidence. This can reduce the confidence of assessment outcomes. However, ensuring assessments are completed by a wide range of PA users can balance any potential bias issues. PAME assessments have also largely focussed on whether management is in place rather than understanding how effective the management is. PAME assessments are generally weak at measuring biodiversity objectives, potentially resulting in inefficient assessment of conservation objectives.

Developing a new indicator that builds on existing assessment frameworks will be vital to assess the current effectiveness of PCAs on a global scale. Reviewing experiences of applying PAME assessments around the world highlighted gaps in current assessments. It is crucial that the MEPCA indicator carefully draws focus to the delivery of conservation outcomes, which are considered difficult to measure and are largely lacking from existing methods. The review also highlighted the gap in management effectiveness methodologies for OECMs, so this could be a factor included in the development of the MEPCA indicator.

The OSPAR management status approach was considered the most suitable framework in which to base the MEPCA indicator, largely due to its simple approach of using four questions to give a general overview of MPA effectiveness, and the fact that the indicator had successfully been applied across a large number of MPAs across the North-East Atlantic. It was considered that the indicator could be developed by altering question wording, adding additional questions, and incorporating metrics, to maximise its global applicability across different countries and PCA types (including differing governance and area types), and to put a greater focus on assessing the achievement of conservation outcomes by creating a quantitative approach.

3.   Indicator Development

During its development, the MEPCA indicator progressed through seven iterations with the key changes presented in Figure 11. This development has changed the indicator from being composed of four metrics to eight, to facilitate the calculation of a more applicable final score for each PCA. Greatest emphasis has been placed on the achievement of conservation objectives through the weightings applied.

Versions 0.1 to 0.4 of the indicator were largely based on lessons learnt from the OSPAR approach and existing PAME methodologies, summarised in Section 2. Version 0.4 of the MEPCA Indicator was then trialled with PCA case studies from Canada, Costa Rica, St Helena, British Indian Ocean Territory (BIOT) and the North-East Atlantic via OSPAR (Germany, Spain, Sweden and the UK). Further detail on these case studies is presented in Volume II: Appendix 4. Changes through version 0.5 to 0.6 focussed on refinements to supporting definitions and metric weightings. Finally, version 0.7 saw the removal of weighted Governance categories.

A schematic of the indicator is presented at the beginning of this report (Figure 1) and supported with Section 4, while supporting definitions are presented in Volume II: Appendix 2.

3.1   Key Considerations

Based on a review of lessons learnt from existing PA management effectiveness approaches (Section 2 of this report and Vol II Appendix 3), the following key points were taken into consideration when developing the MEPCA indicator:

3.1.1   Metrics

- The indicator needed to go beyond accounting that management effectiveness assessments have been undertaken and focus specifically on achievement of (or progress towards achieving) ecological conservation outcomes devised for a given PCA.

- The metrics needed to be simple to complete and avoid ambiguity in answers, and therefore should be accompanied by a clear, concise guidance document as well as supporting definitions.

- The indicator should be applicable to all PCAs.

- Guidance documentation would further benefit from worked examples and case studies, where regional PAME assessments with similar questions to the indicator metrics could be presented as proxies to complete the MEPCA indicator assessment.

- The OSPAR four question approach needed to be adapted to be inclusive of the full variety of PCAs. Once the diversity of area types have been listed and definitions confirmed, the questions should be reviewed for their applicability across the full range of area types and adapted accordingly.

- The use of weightings for responses to the OSPAR four questions should be considered. The application of weightings could vary between different governance types of PCA (such as Government or community led), if deemed applicable.

- The OSPAR approach currently provides a confidence score for the achievement of conservation objectives. As the new MEPCA indicator is to be used globally, for a range of PCAs, it may be helpful to request a confidence score for some or all of the metrics.

- Drawing from METT-4 and similar PAME self-assessments, as part of the MEPCA indicator, metrics should be accompanied by comment sections where managers can explain the rationales for metric scores produced and reference evidence to validate their self-assessment.

3.1.2   Accessibility

- Cloud sharing could help to increase the efficiency and effectiveness of participation with the new indicator (Arienze 2012). The use of online platforms to use the indicator would need to be free and easy to access across the participating countries.

- The indicator could be translated into a variety of languages which could help increase participation of a wider audience, however this could come with its own challenges. Research has shown that there are a variety of difficulties associated with language differences in qualitative research (Van Nes, *et al.* 2010). The interpretation of a metric, guidance document or definition could be lost, therefore it is recommended that all responses are submitted in English.

- By using an online portal, indicator responses could be collated quicker. This would reduce the resource needed to sort the data and can also allow participating countries to edit their data even after they have submitted it. Once a deadline for responses has been reached, the data could then be downloaded by the organiser to analyse and interpret.

- The visual presentation of the MEPCA indicator could mimic the OSPAR MPA reporting style (see Section 2.3), or other management effectiveness assessments. This would be dependent upon how the metrics are adapted and if the barometer/pie charts would still present the results appropriately.
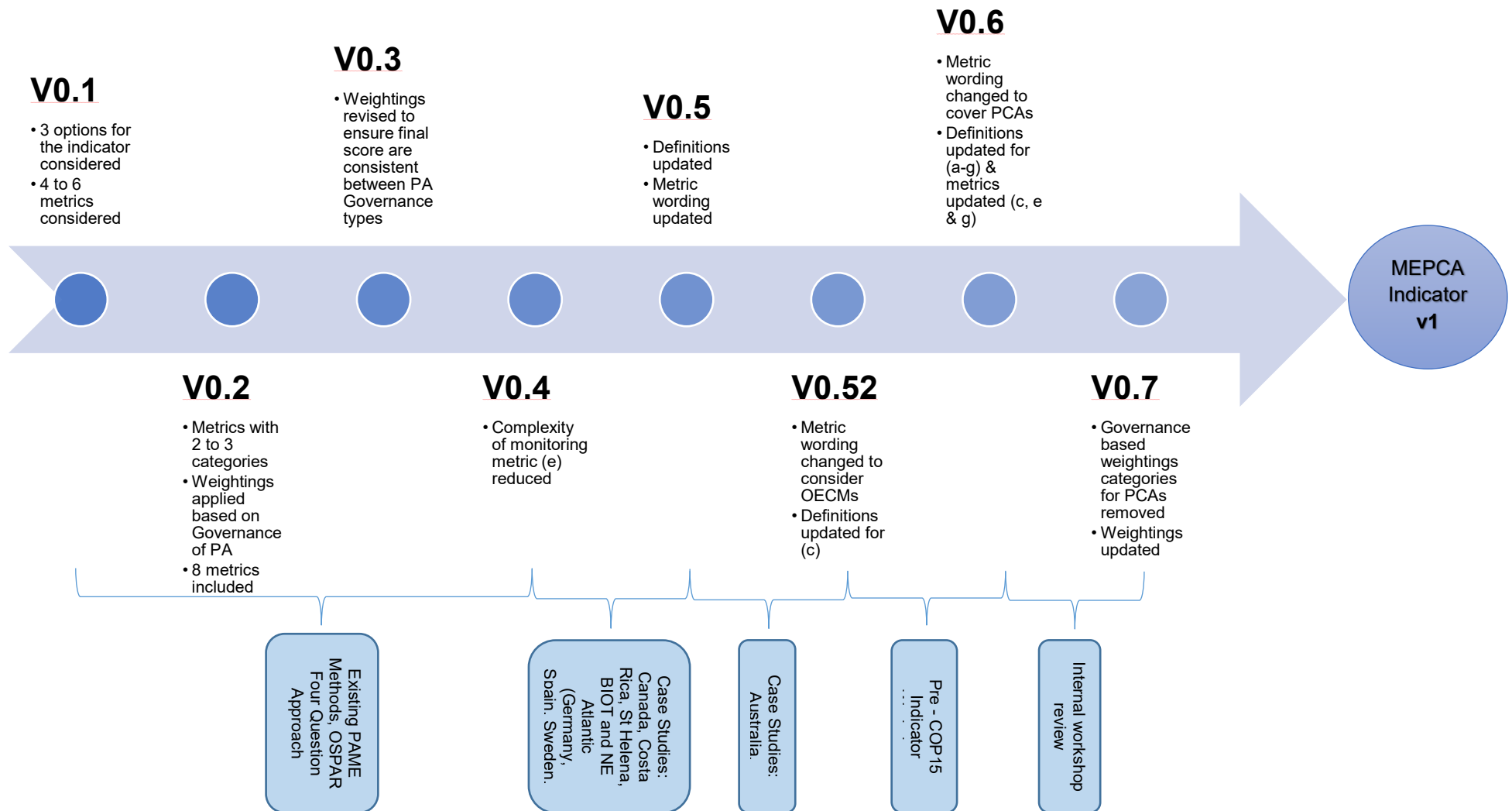
Figure 11. Key changes made to the MEPCA Indicator during its development.

3.2   Early Development Stage (v0.1 to v0.3)

The OSPAR management status approach (detailed in Section 2.3) assessing MPA management has been successfully applied across MPAs in the North-East Atlantic since 2017. This simple four question approach forms the basis of the development of the MEPCA indicator. Questions and methodologies from the more extensive PAME methodologies have provided further steer in its design resulting in the key changes from v0.1 – v0.3 of the indicator development (see Vol II: Appendix 4.1 for further information).

Initially, each of the four OSPAR qualitative questions were translated to quantitative metrics using expert judgement (Table 1). Several approaches were considered to determine the most suitable way to apply a quantitative scale and combine metrics to produce an overall score. Approaches ranged from a simple scoring category with two or three options for each metric, which would then be summed to create the overall indicator score, to a more advanced quantitative assessment where each metric would be based on a more direct score (i.e. the number of features meeting conservation objectives, with weightings then applied). Ultimately, it was decided that a combination of the simple and advanced approach was most suitable for this indicator.

Table 1. Corresponding OSPAR approach (monitoring MPA management status) questions to metrics and associated scoring of MEPCA indicator (v0.3)

OSPAR four questions	Corresponding MEPCA Indicator metric	Possible responses for the MEPCA indicator
N/A	**a) What is the governance type of the area?**	Governance by Government
		Shared Governance
		Private Governance
		Governance by Indigenous peoples and/or local communities
		Unknown
		Other
N/A	**b) How is the area categorised?**	Strict Nature Reserve
		Wilderness Area
		National Park
		Natural Monument
		Habitat/Species Management
		Protected Landscape/Seascape
		Protected Area with Sustainable Use of Natural Resources
		OECM (Other Effective Area-based Conservation Methods)

OSPAR four questions	Corresponding MEPCA Indicator metric	Possible responses for the MEPCA indicator
		Other
Is the MPA management documented?	**c) Is information on the protected or conserved area for management available?**	2 = Yes
		1 = Partially
		0 = No
		0 = Unknown
Are the measures to achieve the conservation objectives being implemented?	**d) Are management measures being implemented for the area to achieve its objectives for conservation?**	2 = Yes
		1 = Partially
		0 = No
		0 = Unknown
Is monitoring in place to assess if measures are working?	**e) Does monitoring take place which helps to assesses progress towards achieving conservation outcomes?**	2 = Yes
		1 = Partially
		0 = No
		0 = Unknown
Is the MPA moving towards, or has it reached its conservation objectives?	**f) Is the area achieving its conservation outcomes?**	2 = Fully
		1 = Partially
		0 = No
		0 = Unknown
Confidence assessment	**g) What is the level of confidence in the data used to assess progress towards the achievement of conservation outcomes?**	3 = High
		2 = Moderate
		1 = Low
		0 = Not applicable
N/A	**h) Confidence in achievement of conservation outcomes**	f) * g)

3.3   Mid Development Stage (v0.4 to v0.6)

It was critical that the MEPCA indicator was adaptable to existing practices and approaches in a broad range of global contexts and therein does not increase the reporting burden on countries. As such, part of the development had been trialling the approach presented in this report in real world examples. These detailed case studies are presented in Volume II: Appendix 4 of this report, while the key findings and subsequent influence on the indicator development are provided in this section.

Two different approaches to trialling the indicator were taken. One approach was for data to be sent to JNCC and trialled by the team; the other approach was to send the indicator components to the in-country specialists to input their data themselves. The use of these two

different approaches in themselves led to useful outputs in terms of considerations for how the indicator is used in the future.

3.3.1   Case Study Example

Responses for the metrics of the MEPCA indicator for a PCA can be derived from assessments already being conducted in a region, such as from existing PAME assessments. Many countries use management effectiveness assessments that are bespoke to the individual countries' needs. These assessments are often intentionally much more extensive in scope than the MEPCA indicator. This example shows how a community-led PA in Canada can have a MEPCA indicator score from using existing data from a country-specific PAME assessment. (Further details on this case study, and others, can be found in Volume II: Appendix 4).

The case study was a collaboration between JNCC and Environment and Climate Change Canada (ECCC). JNCC received the full scores for 124 PAs following a 2020 examination of the sites from the regional management effectiveness assessment: Canada-METT. Using a Canada-METT guideline document, JNCC selected questions from the assessment which most closely satisfied the MEPCA indicator metrics (v0.4). The matching of metrics is presented as an example in Figure 12 using Akpait, a (IUCN Ib) National Wildlife Area which shares governance between indigenous communities and Government. The site received a score of 54.04% in the Canada-METT and 67.6% in the MEPCA indicator (v0.4). Overall, the scoring counts for Canada-METT and MEPCA indicator are very similar in most cases.

c) Is management information documented?	Q7 of Canada METT used: Is there a management plan and is it being implemented?	Canada METT score 1/3 (MEPCA Score 1/2)
d) Are management measures being actively implemented?	Q4 of Canada METT used: Is management undertaken according to agreed objectives?	Canada METT score 2/3 (MEPCA Score 1/2)
e) Is ecological/environmental monitoring in place?	Q7c of Canada METT used: The results of (ecological) monitoring, research and evaluation are routinely incorporated into planning.	Canada METT score 1/1 (MEPCA Score 2/2)
f) Is the site achieving its conservation objectives?	Q5 of Canada METT used: Is the PA the right size and shape to protect species, habitats, ecological processes and water catchments of key conservation concern?	Canada METT score 3/3 (MEPCA Score 2/2)
g) What level of confidence is associated with achievement of conservation objectives?	Q9 of Canada METT used: Do you have enough information to manage the area?	Canada METT score 2/3 (MEPCA Score "Moderate" 2/3)

Government: $(c * 0.15) + (d * 0.25) + (e * 0.25) + ((f * g) * 0.35)$
Government: $(1 * 0.15) + (1 * 0.25) + (2 * 0.25) + ((2 * 2) * 0.35) = 2.30$ (or 67.6%)

Figure 12. Akpait, a (IUCN Ib) National Wildlife Area which shares governance between indigenous communities and Government Canada-METT and MEPCA indicator (v0.4) scores.

3.3.2   Updates to MEPCA Indicator following Case Studies

Trialling v0.4 the of the MEPCA indicator across the five case study areas, using pre-existing in-country assessment tools and/or expert judgements, provided a variety of recommendations for improvements to the indicator. Often these recommendations related to the need for increased clarity of metrics, and accompanying guidance, so that in country assessors fully understand the content and context of the metrics and can most appropriately answer them using their existing resources. These recommendations made it possible to improve the function and applicability of the indicator with the following key changes being made in v0.5 of the indicator:

Metric a) and metric b): Categorising PCAs

During the Canada and Costa Rica studies (Volume II: Appendix 4.2 and 4.3), it was identified that it would be useful to add an 'N/A' or 'Other' answers to metrics a) and b) to account for any PCAs that do not conform to the governance and PCA type options already listed. To minimise any inconsistencies in interpretations, it would be beneficial to clarify in

the metric a) guidelines that PCAs co-managed between Government and community should be categorised by the primary governor (governed by Government), whereas the 'Shared governance' category should be used to classify PCAs that have a shared governance between non-Government parties.

The OSPAR case study (Volume II: Appendix 4.1) only reviewed MPAs that were governed by Government therefore, it could not give insight into the 'community-led' metric indicator, or other types of PCAs listed within metrics a) and b).

Change for Indicator v0.5 = addition of 'Other' category to metric a) and b)

Metric c): Documenting management measures

When Sistema Nacional de Áreas de Conservación (SINAC) in Costa Rica completed the MEPCA indicator, the team assumed that there was a requirement to have completed a PAME assessment to obtain a full score for metric c). This assumption did not reflect how the indicator was intended to be used. To address this difference in interpretation, it was recommended that the accompanying guidance to this metric may need to differentiate between types of documentation and evidence that could be used, including PAME assessments, management plans and expert opinion.

Change for Indicator v0.5 = no change, stakeholder engagement required

Metric d): Implementation of active management

When SINAC trialled the MEPCA indicator, they selected and averaged Costa Rican Protected Area Management Effectiveness (CRPAME) questions to use as proxy metrics. The CRPAME questions used did not completely align with the indicator metrics. This led to low scores being given for some PCAs, which did not reflect the target of metric d). By defining that active management relates to meeting ecological outcomes, rather than managerial and administrative ones, the risk of unfair scoring was reduced in v0.5 of the indicator.

Through discussions on the BIOT case study (Volume II: Appendix 4.5), it was identified that in addition to guidance changes, altering the wording of metric d), from 'Are management measures being actively implemented?' to 'Are appropriate management measures being activity implemented in efforts for the site to achieve its conservation objectives?', would better suit the indicator aims. This changed the focus from having any form of management in place, to having management that addresses the PCA's conservation objectives – which should relate to the level of human activities occurring in the site.

Change for Indicator v0.5 = amended wording to 'Are appropriate management measures being activity implemented in efforts for the site to achieve its conservation objectives?'

Metric e): ecological monitoring

For metric e) on ecological monitoring, in the Canada case study the 'Partial' option could potentially be removed if it is considered unlikely that enough information will be provided to ascertain differences between 'Partial' and 'Yes'.

In the Costa Rica study, trials with this metric used a proxy question that focused on "ecological integrity" with a similar scoring system to v0.4, therefore further thought must be given to the scoring for this metric to ensure it can be answered in a similar manner by different countries and organisations.

Change for Indicator v0.5 = the wording of this metric and its supporting definitions has been updated to allow more flexibility

Metrics f) and g): achievement of conservation objectives and confidence

For both the Canada and Costa Rica case studies, it could be argued that metrics f) and g) of the indicator could use expert judgement to provide more reliable answers, rather than supplementing scores from PAME assessments. The Environment and Climate Change Canada (ECCC) PAME assessment questions selected (see Volume II: Appendices, Table A-6 of this report) did not directly match to answer the achievement of conservation objectives and using the total Costa Rican CRPAME scores as a proxy, also gave outcome scores that accounted for factors which were not required in our indicator and were overly stringent compared to the MEPCA indicator scoring system. The importance of acquiring expert judgement either in addition to or where suitable PAME assessment questions are unavailable, will be made clear in the MEPCA indicator guidance. Noting where feasible as much quantitative data as possible should be used.

When expert judgement is used, limiting bias is particularly important to consider, as identified through investigations with St Helena (Vol II: Appendices 4.4), as the individuals completing the indicator may have different views based on their respective knowledge and experiences with the PA. For an assessment to be representative, persons from all relevant stakeholder groups (such as management authorities, users, fishers, and NGOs) should participate in the workshops.

Throughout the case studies, the need to broaden and clarify the definitions for low, moderate and high confidence in metric g) was identified, to better reflect the level of detail provided by PAME assessments.

Change for Indicator v0.5 = supporting definitions for confidence have been reduced in complexity to improve applicability and based on existing OSPAR definitions.

Non-metric specific recommendations

After obtaining scores from completing the MEPCA indicator, some PCA agencies from the above case studies noted that it would be useful to add explanations for different outcomes, so that the indices are easier to interpret. This could involve examining the formula and researching where the appropriate cut off points should be between PCA management effectiveness being classed as 'inadequate', with 'deficiencies' or 'adequate'. Providing these interpretations to scoring could help facilitate development of a plan to improve management effectiveness so that PCAs are more likely to achieve their conservation objectives and should be evaluated when considering presentation of the indicator and integration with other component indicators.

3.3.3 Weightings and Definitions Workshop

To further develop the MEPCA indicator (v0.52 to v0.6), JNCC worked with the CBD Secretariat to invite participants to a virtual workshop held on two separate occasions to maximise global attendance (31 October and 2 November 2022). The purpose of the workshop was to provide participants with an overview of the work undertaken to date and to further discuss two key aspects of the indicator:

1) The supporting definitions associated with the different metrics that are used to measure effectiveness of PAs and OECMs; and

2) The weightings applied to the different metrics a) associated with different governance types of conserved areas b) highlighting the focus on achievement of conservation outcomes

The objectives of the workshops were to:

- Socialise the indicator with international experts on PA and OECM management effectiveness,

- Gather feedback on the indicator development, and

- Gain expert opinion on any updates required to the indicator metrics and definitions.

During both days of the workshop, participants were divided into two focus groups led by facilitators. Each group had the opportunity to join both focus sessions, concentrating on the following two topics:

1) Metric Definitions, and

2) Metric Weightings.

The focus sessions aimed to gather feedback and suggestions to ensure that the metric questions, answers, supporting definitions and weightings used in the indicator were fit for purpose. During each focus session, workshop participants were asked to respond to a series of questions relating to the proposed metrics and their supporting definitions. Questions were presented using the website, 'Slido', and consisted of a mix of multiple choice and free-text questions. The workshop report including feedback gathered is presented in Volume II: Appendices 5 of this report.

Summary of workshop findings

The headline results to the questions posed during the two workshops are summarised below:

- **64% of respondents** said they **agreed that the MEPCA indicator is suitable for assessing the "by effectiveness" element of the Target 3 Headline Indicator**. An additional 32% of responses remained neutral in response to this question; many of the attendees stated they were not PA managers and therefore may not have felt they could confidently provide a strong opinion to this question.

- In relation to the **definitions** associated with the metrics that comprise the MEPCA indicator - overall, respondents felt they were **clear, logical and representative of different conservation scenarios**. The primary feedback was for more detail in the supporting definitions, including **clarifying terminology and consistency of wording throughout the indicator and its supporting glossary**.

- In relation to the **weightings** associated with different PA types - respondents overall felt that weightings should be used in the indicator, though there were points made about **whether these should be altered to emphasise specific metrics**. Respondents felt more **clarity** was needed on the **different applications of weightings between Governance-by-non-Government versus Governance-by-Government areas,** and **how instances of shared governance and indigenous-governance areas fitted into the assessment**. **Additional metrics** and weightings were suggested to **assess conservation objectives** such as **cultural and socio-economic values**.

- It was noted that **including worked examples in the guidance documents would be useful** to **improve understanding of the indicator's application** in different geo-political settings. There was a suggestion to consider social and economic outcomes in this indicator in addition to biodiversity outcomes.

NB. Following the workshops and further socialisation of the indicator, one additional minor amendment was made to the indicator weighting categories. Whereby the split between '*Governance by Government*' and '*Governance by community-led*' was changed to '*Governance by Government*' and '*Governance by non-Government*'. The change was made to ensure all non-Government governance types were accounted for and as such reflected as v0.61 of the indicator.

3.4 Final Development Stage (v0.7)

3.4.1 Review of the metric weightings

In acknowledgment of the broadening information base gathered during the MEPCA indicator's development and socialisation, a final review of the weightings application in particular an assessment of the suitability for applying weightings based on governance type was conducted.

The wide range of governance types, resource capacity and legal commitments of the areas under the term global PCAs were assessed against the existing methodology, which consisted of two defined categories based on two broad governance types: 'Government-led' and 'non-Government/community-led'. These broad governance types were originally assigned different weightings to acknowledge the different approaches taken towards effective PCA management:

- Governance by Government weightings =

    $(c*0.15) + (d*0.25) + (e*0.25) + ((f*g)*0.35)$

- Governance by non-Government weightings =

    $(c*0.10) + (d*0.30) + (e*0.25) + ((f*g)*0.35)$

The MEPCA indicator's socialisation process brought to light an increasingly broad range of PCA types, many of which did not conform to separation by governance. JNCC held an in-house workshop bringing together terrestrial and marine PCA experts to critically assess the split by Governance type. It was concluded that the two categories, previously created to balance the variability of governance could, in fact, not account for all types and were thus removed. Each individual metric and its weighting were then further scrutinised to conclude the final weighted approach.

The refined weightings for the MEPCA indicator aimed to reflect the priorities of effective management of all PCAs, on a global scale, regardless of the Governance type or management methods used to achieve them. These updates are represented in v0.7 of the MEPCA indicator.

MEPCA indicator v0.7 weightings = $(c*0.15) + (d*0.25) + (e*0.25) + ((f*g)*0.35)$

Metric specific changes and justifications are summarised below with detail on the three overall weighting options explored and presented in Section 3.4.2.

Metric c): Is information on the PCA for management available?

For metric c), a renewed focus on the dissemination of information to stakeholders was confirmed. Increased awareness of a site's importance and management plans will increase buy-in from local stakeholders and thus, compliance to the rules of a PCA. The willing compliance of PCA users can help to ensure the effective implementation of the areas management, reduce the resources required to enforce management and expedite beneficial conservation outcomes.

Overall, metric c) was considered lowest priority of the four weighted metrics because it is acknowledged that implementation of management and monitoring of the area are more essential for the majority of PCA to achieve and demonstrate the achievement of their conservation benefit. Furthermore, it is implied that implementation of measures (metric d)) will require management information to be in place.

Metric d): Are management measures being implemented for the PCA to achieve its outcomes for conservation?

In version 0.61 of the MEPCA indicator, the score for metric d) was allocated a weighting of 0.25 for Government led PCAs, and 0.35 for non-Government led PCAs. Non-Government led PCAs were initially given a higher weighting as they may have additional goals beyond biodiversity conservation, such as the provision of livelihoods or other ecosystem services. To account for this and to ensure biodiversity conservation is not overlooked, non-Government led PCAs were attributed higher weighting for this metric than Government led PCAs.

Following further consideration of the full range of PCAs, it became apparent that many government-led PCAs, particularly those that fall within IUCN Protected Area Management Category VI, and OECMs, may have other primary objectives in addition to biodiversity outcomes. It was therefore concluded that the rationale for the difference in weightings applied to metric d) in Government led and non-Government led PCAs was not fully supported. A decision was made to apply the same weighting to metric d) across PCAs, regardless of governance type.

Metric d) was afforded the same weighting as metric e) due to the importance of implementing measures to support achieving the conservation outcomes. The equal weighting with metric e) was driven by the need to have evidence of the impact of the measures on the site.

Metric e): Does monitoring take place which helps to assess progress towards achieving conservation outcomes?

The two key factors that influenced metric e) were legal requirements and resource availability. Monitoring and reporting on the effectiveness of PCAs is critical to ensure that areas continue to deliver conservation outcomes (Woodley *et al.* 2019). Whilst ecological monitoring is a key component of effective PCA management, resource limitations can have a large impact on capacity and likelihood of conducting regular monitoring activities.

Metric e) has a higher weighting compared to metric c) due to the need for monitoring, which identifies the effect an implemented management measure has on achieving the conservation outcomes.

Metric e) has a lower weighting compared to metric h) "Confidence in achievement of conservation outcomes" due to overall rationale and purpose of the MEPCA Indicator, which focuses on achievement of conservation outcomes.

Metric h): Is the PCA achieving its conservation objectives?

The primary goal of the MEPCA indicator is to assess management effectiveness with a focus on the achievement of conservation outcomes. The weighting for metric h) has retained the highest weighting to reflect the importance of achieving the key outcome of the MEPCA indicator. This high weighting ensures that designation type, governance type, resource availability or other objectives do not impact the achievement of conservation outcomes. This higher weighting also considers if the double accounting of the combined score from metric f) and metric g) and the overall importance of these metrics as reflected in this higher weighting.

NB: Metric f) and metric g) were not changed during this development stage.

3.4.2   Comparing three weighting options

While all the MEPCA indicator metrics are valuable for building a picture of management effectiveness, following the decision to not distinguish PCA weightings based on governance type, the revised weightings still needed to prioritise metric h). Scoring low or null on metric h) should preclude areas from being able to achieve an adequate MEPCA indicator outcome. Several options of weightings were trialled for version 0.7 of the indicator, all of which allocated metric h) the highest weighting but had slightly different weightings distributions for the other metrics (Table 2).

Table 2. Presenting three options for different weightings of the metrics.

Options for weightings for V0.7 of the indicator	Metric c)	Metric d)	Metric e)	Metric h) (f*g)	Weighting ratio
Option 1	0.2	0.25	0.2	0.35	H>D>E=C
Option 2	0.2	0.2	0.2	0.4	H>D=E=C
Option 3	0.15	0.25	0.25	0.35	H>D=E>C

1. Option 1 prioritises the metrics as h)>d)>e)=c). Metric d) is selected as the "second" highest weighting because implementation of measures, where appropriate, is an important component in the achievement of conservation outcomes, as highlighted in workshop feedback in November 2022 (Section 3.3.3).

2. Option 2 is the simplest approach, listing weightings in the order h)>d)=e)=c), with metrics c), d) and e) all equally weighted.

3. Option 3 replicates v0.61 of the metric weightings under governance by Government, valuing h)>d)=e)>c), a scenario which has already undergone workshop scrutiny and undergone review through several case studies in the early and mid-development stages of the indicator.

The three weighting options were explored to identify the maximum number of unique scores possible and the highest value attainable if metric f) scored zero (Figure 13, Figure 14 and Figure 15, Figure 16). Reviewing the maximum number of score outputs provided an understanding of how much variance is possible in the indicator given that there are only four quantified metrics. Reviewing the highest overall score when 0 is selected for metric f) provided an understanding of how critical the indicator can be for classifying a sites management as "inadequate" through the MEPCA indicator.

Options 1 and 3 had relatively high numbers of unique outcomes (n = 73 and n = 70 respectively), Option 2 had a much lower number of outcomes in comparison (n = 22). Given that options 1 and 3 had the same weighting for metric f) they both produced a maximum percentage score of 38.24% for the MEPCA indicator if respondents had given a null value for metric f). The higher weighting applied to metric f) in Option 2 (0.4), was reflected in a smaller maximum percentage of 33.33% when metric f) received a null value.

Previously completed MEPCA indicator case studies were also reassessed (total of 549 PCAs), comparing the outcome scores under the different options (Table 2) to understand the variance across score bandings (Option 1= Figure 13, Option 2= Figure 14 and Option 3= **Figure 15**). Despite having similar weightings ranges, Options 1 and 3 provided different score spreads, particularly where there is a low MEPCA indicator outcome score.

Figure 13. Graph illustrating the range of potential achievable scores for Option 1 of weightings for version 0.7 of the MEPCA indicator. The highlighted point expresses the threshold for the weightings Option 1, where scoring 0 for metric f) equals 38.24%. There is a total of 73 potential outcomes.
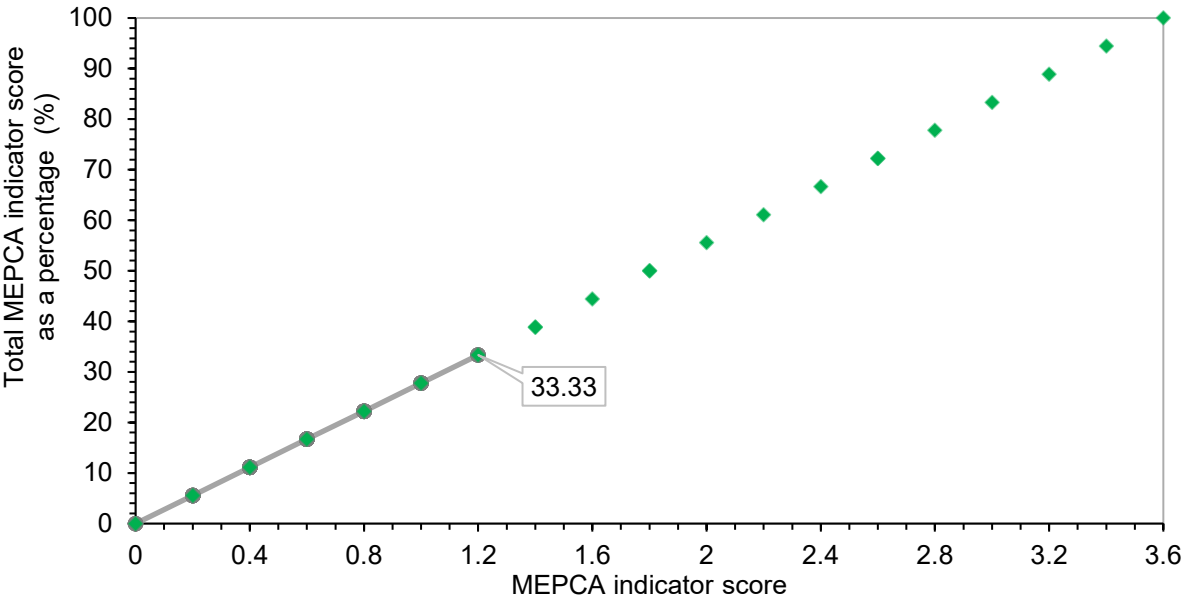
Figure 14. Graph illustrating the range of potential achievable scores for Option 2 of weightings for version 0.7 of the MEPCA indicator. The highlighted point expresses the threshold for the weightings Option 2, where scoring 0 for metric f) equals 33.33%. There is a total of 22 potential outcomes. Note that the maximum raw score with Option 2 is 2.6 rather than 3.4 which occurs in other Options, this has no impact on when comparing options using percentage measures.
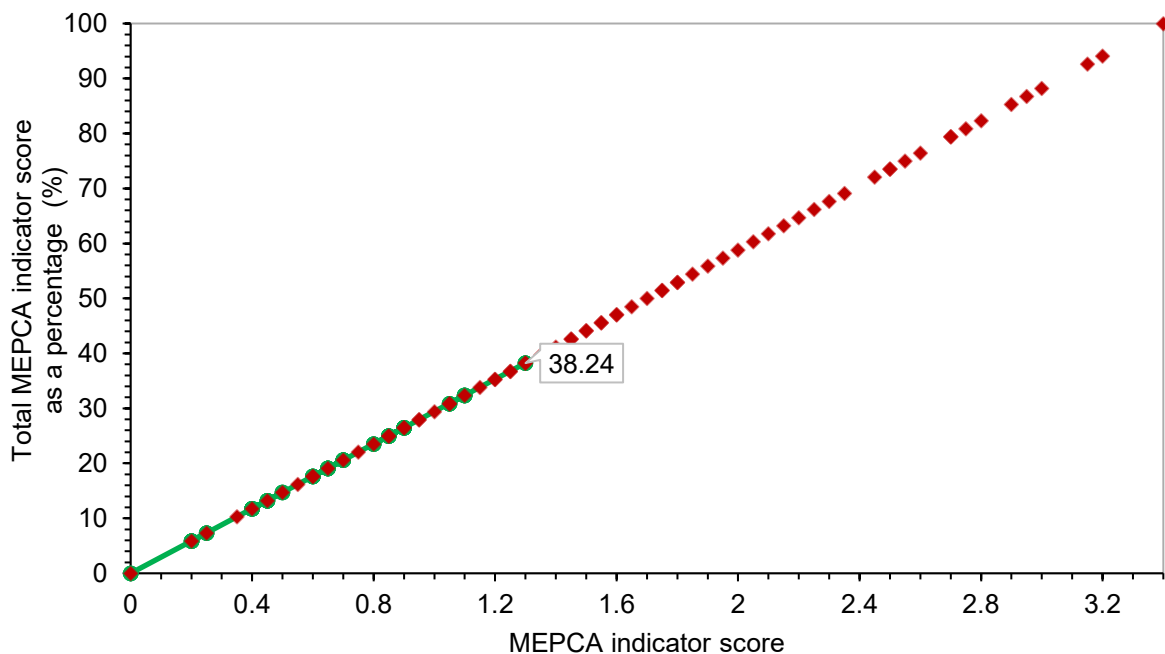

Figure 15. Graph illustrating the range of potential achievable scores for option 3 of weightings for version 0.7 of the MEPCA indicator. The highlighted point expresses the threshold for the weightings Option 3, where scoring 0 for metric f) equals 38.24%. There is a total of 70 potential outcomes.
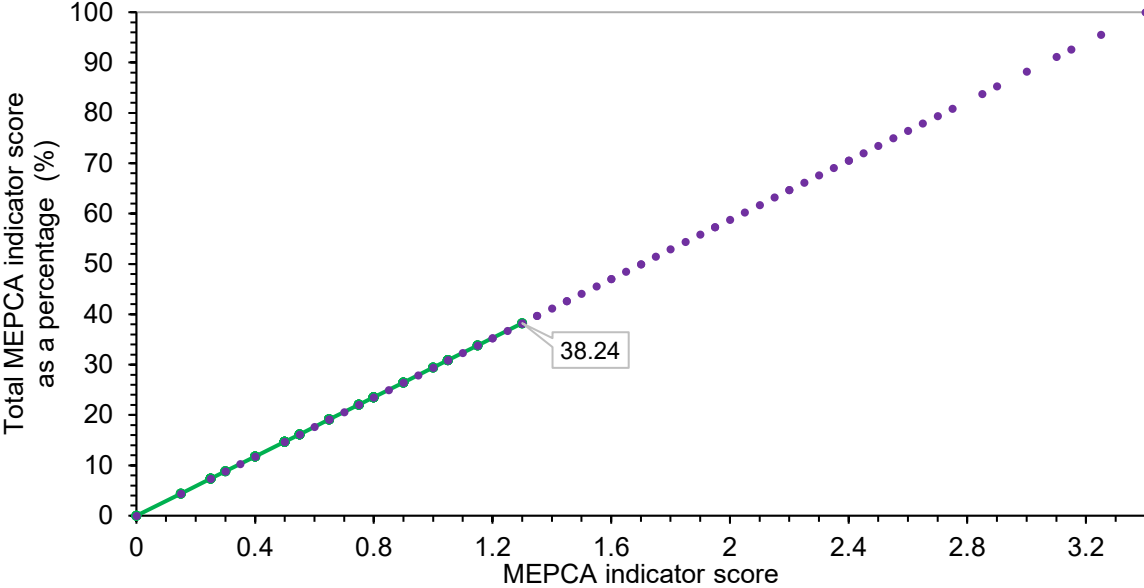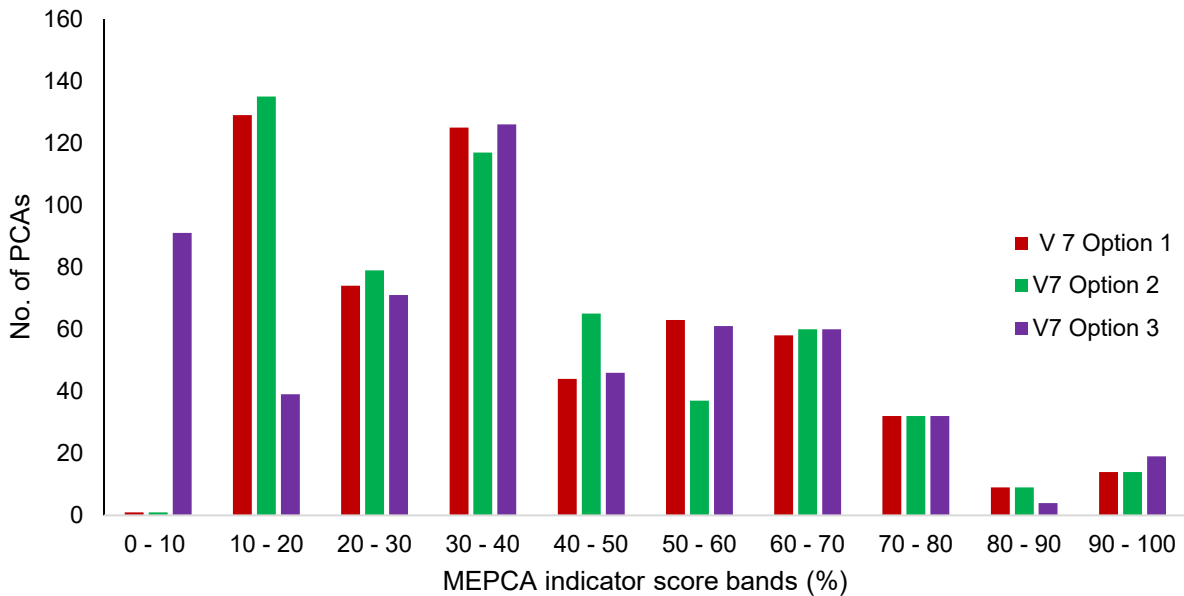
Figure 16. The potential MEPCA indicator outputs when comparing three options of weightings (total PCAs = 549). Key: Option 1 = red; Option 2 = green; Option 3 = purple.

The weighting preferences for metrics c), d) and e) were also compared in each option, ensuring the order of the weightings was consistent with the overall focus of the indicator. It was concluded that Option 3 would be taken forward, given its standing in these tests and previous workshop examination. Option 3 has a low maximum score (38.2%) when metric f) scores 0, and the number of outcomes possible (n=70) balanced both a high variation with a good spread of values in each score band.

Metric h) is given the greatest emphasis within the MEPCA indicator as the focus is on the achievement of conservation objectives. Metric h) was intentionally double counted, due to combined scores of metric f) and metric g) and using the current scoring method of each metric (scoring a maximum of 2 for metrics c)-e) or 6 for metric h)), however this resulted in the proportion that metric h) was weighted in the indicator to increase from the 0.35 in the formula to 0.62. Further testing of the MEPCA indicator weightings was conducted to determine a method to avoid the double accounting of the indicator. This focused on the various ways each metric could be scored to ensure that metric h) was not weighted greater than 0.35. Following further tests, it was identified that changing each metric response score to a fraction of the total possible score, that this rebalanced the weightings back to those in the formula.

3.4.3 Comparing the MEPCA indicator thresholds with other assessments

As the MEPCA indicator is a global framework indicator, there is a need to understand how its methodology and outputs compare to other assessments. As many PAME methodologies use thresholds to categorise the management effectiveness of a PCA, it is possible to compare a PCA's results from different methodologies.

Data used in the case studies through the development of the indicator was re-analysed to compare the results from the existing PAME methodologies to the results from the MEPCA indicator assessment. More information about the case studies and the existing PAME methodologies can be found in Volume II: Appendix 3. Within each table below, there is a

comparison of the thresholds used in the existing PAME methodologies (OSPAR Management Status, Canadian METT and Costa Rican PAME) with the outputs of the MEPCA indicator. The threshold option for the MEPCA indicator scores is: Inadequate (<39%), or pass (≥39%), as described in Section 3.4.2.

OSPAR Management Status

The management status assessment of the OSPAR MPA network does not use thresholds for assessing if conservation objectives are being met or if management measures are effective. Of the four questions, question d "*Moving towards objectives*", was selected to compare with the results of the MEPCA indicator scores, as shown in Table 3.

Table 3. Comparison of the thresholds used in two PAME methodologies: OSPAR management status *Question D - Is the MPA moving towards, or has it reached its conservation objectives?* and MEPCA indicator PCA score (n=284 PCAs).

Methodology	Output categories		
OSPAR Management status 2021	No, Unknown	Partially	Yes
	62	150	72
MEPCA indicator	Inadequate <39%	Pass ≥39%	
	122	162	

Management Effectiveness Tracking Tool (METT)

The Canadian METT methodology has three categories for an area's total score: *Management is clearly inadequate; Management is basic with significant deficiencies; Management is adequate.* A threshold of >34% is used as a "pass". A comparison is shown in Table 4 of the thresholds used for categorizing the total score of a PCA's management effectiveness using the METT and MEPCA indicator.

Table 4. Comparison of the thresholds used in two PAME methodologies: Canadian Management Effectiveness Tracking Tool (METT) methodology and MEPCA indicator (n=106 PCAs).

Methodology	Output categories		
Canadian METT	Management is clearly inadequate <33%	Management is basic with significant deficiencies 34-67%	Management is adequate >68%
	19	66	21
MEPCA indicator	Inadequate <39%	Pass ≥39%	
	32	74	

Costa Rican Protected Areas Management Effectiveness (CRPAME)

The CRPAME methodology has five categories for summarizing a PCA's total score. A threshold of <50% is used as "not acceptable" management. A comparison is shown in Table 5 of the thresholds used for categorizing the total score of a PCA's management effectiveness using the CRPAME and MEPCA indicator.

Table 5. Comparison of the thresholds used in two PAME methodologies: CRPAME methodology and MEPCA indicator (n=74 PCAs).

Methodology	Output categories				
CRPAME	Not acceptable <50%	Nearly acceptable 50-60%	Acceptable 60-75%	Very good 75-90%	Excellent >90%
	28	16	23	5	2
MEPCA indicator	Inadequate <39%	Pass ≥39%			
	28	46			

Summary

Compared to the other assessments shown above, the metrics within the MEPCA indicator have a stricter methodology, which is reflected in fewer sites achieving a passing threshold score (Figure 17). This is due to the weightings used in the metrics, to emphasise the importance of achieving conservation outcomes (such as metric f)) having the highest weighting). Other assessments do not weight their PAME questions before totalling a final score. Many PAME assessments include a large range of questions, which can focus on different aspects of management effectiveness, such as community involvement, governance, etc. A range of questions allows opportunity to provide a high level of detail as supporting evidence for a PAME assessment.
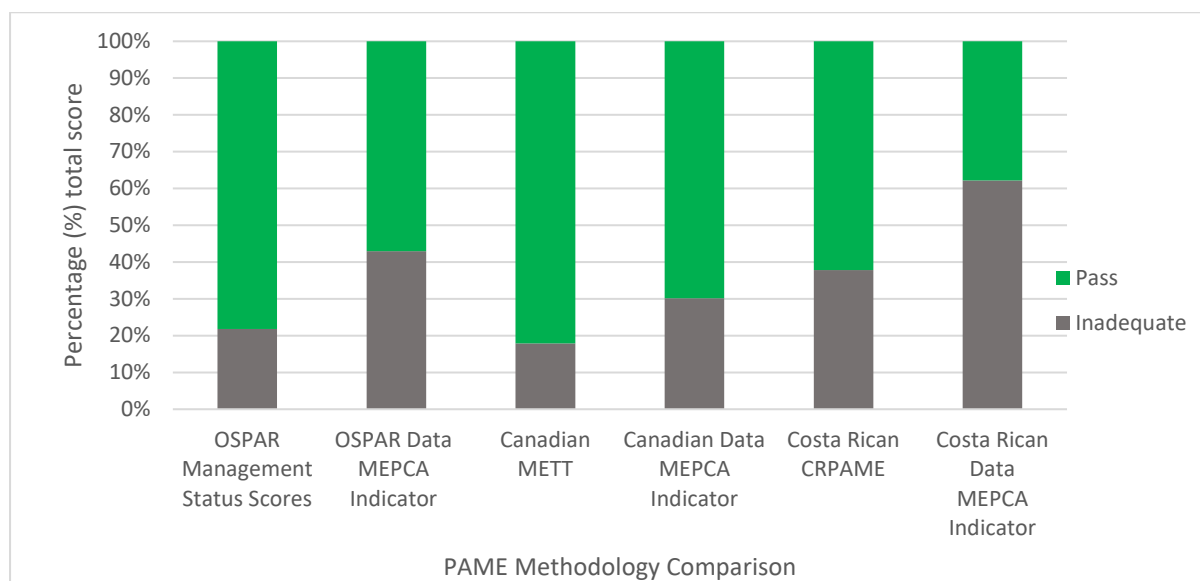
Figure 17. Comparison of the management effectiveness scores for PCAs using different PAME methodologies and the MEPCA indicator.

PCA-level comparison

As well as comparing the thresholds of PAME assessments to the scores from the MEPCA indicator for groups of PCAs, it is also important to compare at an area-level.

It is important to understand how the outputs of different PAME methodologies may vary for the same PCA. Two examples of site-level MEPCA indicator scores are shown below:

1. Dogger Bank Special Area of Conservation (SAC) was chosen for this comparison as it is reported on at a country-level and regional-level, and therefore can also be recorded at a global level through the MEPCA Indicator.

2. Akpait National Wildlife Area (NWA) has already been given as an example in Section 3.3.1 for how to use results from existing PAME assessments as source information for the MEPCA indicator. In this section, we compare the results of Akpait NWA with v0.7 of the indicator.

Dogger Bank Special Area of Conservation (SAC) (JNCC 2024a) was designated for the protected feature: 1110 Sandbanks which are slightly covered by seawater all the time (JNCC 2024b). It has a depth range of 13 – 58 m below sea-level and is an important area for sandeels which are prey for a variety of fish, seabirds and cetaceans. In 2022, JNCC published updated conservation advice (JNCC 2024c) for Dogger Bank SAC which stated the protected feature is in an **unfavourable condition** and therefore the site was **not meeting its conservation objective.** At the North-East Atlantic level, OSPAR reports the status of how the OSPAR network of MPAs is managed bi-annually. The latest assessment is from 2023 (OSPAR Commission 2024) and the result from the management status questionnaire for the UK Dogger Bank SAC show the area was **not moving towards or reached its conservation objectives**. As shown in the OSPAR case study (**Volume II, Appendix 4.1**), it is possible to use the existing OSPAR management status data as source information for the MEPCA indicator. Table 6 shows the metric results for the PCA Dogger Bank and the final MEPCA indicator score of 23.53% which is **below the pass threshold**.

Table 6. An illustration of how the results from two management effectiveness methodologies for Dogger Bank SAC compare: 2023 OSPAR management status and the MEPCA Indicator.

OSPAR Management Status Questions	OSPAR Response	MEPCA Indicator metrics	MEPCA Indicator Response
Question A - Is the MPA management documented?	Yes	c) Is information on the PCA for management available?	2
Question B - Are the measures to achieve the conservation objectives being implemented?	Partial	d) Are management measures being implemented for the PCA to achieve its outcomes for conservation?	1
Question C - Is monitoring in place to assess if measures are working?	Partial	e) Does monitoring take place which helps to assess progress towards achieving conservation outcomes?	1
Question D - Is the MPA moving towards, or has it reached its conservation objectives?	No	f) Is the PCA achieving its conservation outcomes?	0
Confidence scores	Low	g) What is the level of confidence in the data used to assess progress towards the achievement of conservation outcomes?	1

OSPAR Management Status Questions	OSPAR Response	MEPCA Indicator metrics	MEPCA Indicator Response
		h) Confidence in achievement of conservation outcomes	0
		MEPCA Indicator score	**23.53%**

Akpait National Wildlife Area (NWA) was designated in 2010 for the protection of seabird colonies (Government of Canada 2022). It contains both terrestrial and marine areas and provides essential feeding grounds for nesting colonial seabirds, as well as migrating marine mammals. The PCA Akpait has a co-management agreement between the Canadian Wildlife Service (CWS) of ECCC and Inuit from Qikiqtarjuaq, Nunavut (NU). The Canadian METT methodology has already been presented in **Section 3.3.1,** as an example of how to use existing PAME data as responses to the MEPCA indicator metrics. Further detail on this case study can also be found in the annex (**Volume II, Appendix 4.2**). The 2020 METT methodology gives Akpait NWA a score of 54.04% which equates to a category of "**Management is basic with significant deficiencies**". This is like the MEPCA indicator score of 66.7% which is **above the pass threshold** (Table 7).

Table 7. A comparison of the results from two management effectiveness methodologies for Akpait NWA: 2020 Canadian METT and MEPCA Indicator.

Subset of Canadian METT Indicators	Canadian METT Responses	MEPCA Indicator metrics	MEPCA Indicator Response
Q7 Is there a management plan and is it being implemented?	1	c) Is information on the PCA for management available?	1
Q4 Is management undertaken according to agreed objectives?	2	d) Are management measures being implemented for the PCA to achieve its outcomes for conservation?	1
Q7c The results of (ecological) monitoring, research and evaluation are routinely incorporated into planning.	1	e) Does monitoring take place which helps to assess progress towards achieving conservation outcomes?	2
Q5 Is the PA the right size and shape to protect species, habitats, ecological processes and water catchments of key conservation concern?	3	f) Is the PCA achieving its conservation outcomes?	2
Q9 Do you have enough information to manage the area?	2	g) What is the level of confidence in the data used to assess progress towards the achievement of conservation outcomes?	2

Subset of Canadian METT Indicators	Canadian METT Responses	MEPCA Indicator metrics	MEPCA Indicator Response
		h) Confidence in achievement of conservation outcomes	4
Canadian METT Score	54.04%	MEPCA Indicator score	66.7%

3.5   Socialising the indicator

Throughout the development of the indicator, the delivery team has taken the opportunity to socialise the indicator at national and international meetings, conferences and dedicated workshops. This was to gather valuable feedback to support the MEPCA indicator development as well as to ensure parties were familiar with the indicator to increase likelihood of uptake. Table 8 provides an overview of key MEPCA indicator socialisation events.

Table 8. Key MEPCA indicator socialisation events.

Conference	Date	Audience	Outcome
OSPAR ICG-MPA, Spain	October 2022	OSPAR Contracting Parties (CPs)	The indicator was praised for its origins; that it was devised from CBD workshops and that CBD Parties had previously had the opportunity to comment and engage with the development. Many of the Contracting Parties (CPs) at the meeting were familiar with the extensive PAME assessment methodology METT and **praised the indicator for its ease of use**. As the MEPCA indicator was based upon the OSPAR four question approach, the CPs agreed that the indicator would be **relatively simple to use**, with the existing data that they gather on their PCAs.
MedPAN, Montenegro	October 2022	MPA managers	The Mediterranean network of MPAs is predominantly made up of small-scale inshore sites, and so gaining feedback was a valuable opportunity to understand whether the MEPCA indicator can be applied to these types of MPAs. It became apparent during the session that **terminology for the MEPCA indicator must be as clear as possible**. It was also assumed that the indicator was a new assessment tool and questioned whether countries' existing assessment methods would need to change, and so any **future guidance should clarify that the MEPCA indicator is a framework indicator capable of using existing assessments**. Questions were raised about how the MEPCA indicator equitably assesses the

Conference	Date	Audience	Outcome
			effective management of PCAs. It was explained that the indicator allows for impartial assessment and review of global conserved areas, using specific weightings to put PCAs on level terms to acknowledge their contribution to global conservation efforts. The **absence of consideration of social benefits was also raised**, and so social benefits were considered in further developments of the indicator.
COP15, Canada	December 2022	Government Officials, NGOs	The focus of the COP15 was the adoption of the GBF as well as its monitoring framework. However, in parallel to this, several side events took place during which the MEPCA indicator was presented. A UK submission paper detailing its development to date was also submitted and made available by the CBD secretariat for parties. Throughout the official negotiations on CBD Target 3, it was clear how important the quality aspects of the target are, compounded by the agreed wording '*Ensure and enable that by 2030 at least 30 per cent of terrestrial, inland water, and of coastal and marine areas…are effectively conserved and managed…'.* In support of this, it was **agreed that the MEPCA indicator would be listed as a complementary indicator in the GBF monitoring framework.**
IMPAC5, Canada	February 2023	MPA Managers, Academics, MPA Experts	The 5th International Marine Protected Area Congress (IMPAC5) allowed the MEPCA indicator to be further socialised at a critical time when it was reaching its final stage of development. It should however be noted that this conference was confined to marine focussed colleagues. There was **significant interest** by many attendees both during and after the conference. Additional interest and questions mostly focused on the **application of weightings** as well as synergies with other global systems such as the **MPA Guide**.
Progress in Marine Conservation, Germany	September 2023	Government Officials, NGOs, MPA managers, EU representatives	The 6th conference of Progress in Marine Conservation offered a forum for discussing current developments in marine nature conservation and research. Focus in 2023 was on three main topics: marine protected areas and 30/10 target, offshore wind energy and fisheries (management).

Conference	Date	Audience	Outcome
			The MEPCA Indicator was presented as a tool which can be used to quantify management effectiveness of MPAs over time. The indicator was praised for its suitability for a wide range of PCA types. A resulting affect from the presentation at this conference was the beginning of discussions within OSPAR ICG-MPA to **trial using the MEPCA indicator as a management effectiveness tool** across the North-East Atlantic MPA network.
OSPAR ICG-MPA, Iceland	November 2023	OSPAR CPs	There was a request to present the indicator again to ICG-MPA following the praise received from an attendee at the Progress in Marine Conservation conference. ICG-MPA then discussed the opportunities to test the MEPCA indicator as part of the biennial management status reporting data call due to the indicator being developed from the OSPAR four management status questions. ICG-MPA agreed that the MEPCA indicator would be tested in parallel to the collection of the OSPAR management status question and the results assessed at the ICG-MPA November 2024 meeting **to determine if the MEPCA indicator would become a formal part of the OSPAR management status reporting**.

4.   The MEPCA Indicator v1

Through the development work detailed in this report, the MEPCA indicator[2] is now fully operational and ready for application to marine and terrestrial PAs and OECMs. The MEPCA indicator was developed as a tool which can be used as a direct assessment of management effectiveness, or use existing data from other sources, such as other PAME assessments. The indicator is available in a spreadsheet format to enable easier collation of data, dissemination of datasets and provide an automated MEPCA Indicator score for each PCA.

4.1   Metrics

Table 9 shows the metrics of the MEPCA indicator. Metrics a) and b) provide a description for each PCA, and metrics c) – h) are evaluative and are multiplied together to provide the final MEPCA Indicator score, as shown below:

$(((c * 0.15) + (d * 0.25) + (e*0.25) + (h*0.35)) / 3.4 * 100 = $ MEPCA Indicator score

The metrics are weighted to put focus on the importance of the achievement of conservation outcomes as evidence for effective management. The weightings ensure that the final assessment score accurately reflects the aspects considered to be of greatest importance to effective PCA management. The MEPCA indicator weightings are highest for metric f) to ensure that the greatest emphasis of the indicator is placed on achievement of conservation objectives and outcomes. Supporting definitions for each of the responses to the metrics can be found in Volume II: Appendix 2.

The MEPCA indicator is presented in a spreadsheet. For each metric, the responses available appear in a "drop-down" list. The total score is automatically presented once each of the metrics have been filled in. There is a comments section which can be used to provide supporting evidence and rationale behind each score. The best available evidence should be used to complete the assessment.

Step 1: A representative for the PCA fills out the spreadsheet by answering the questions posed in the metrics a) – g) for each PCA. Based on the responses, numerical values are assigned to each of four evaluative metrics c), d), e) and h), in the spreadsheet. The automated formula calculates metric h) = (f * g). The responses to metrics c) – f) can score either 0 (No/Unknown), 1 (Partial) or 2 (Yes) and for metric g), responses to confidence can score 1 (low), 2 (moderate) or 3 (high).

Step 2: Weightings are automatically applied to each of the evaluative metrics and a total MEPCA indicator score is produced. Each metric score is weighted using the formula: (c*0.15) + (d*0.25) + (e*0.25) + ((f*g)*0.35).

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[2] Note: Following finalisation of the development of the MEPCA indicator v0.7 became v1.

Table 9. The metrics of the MEPCA indicator v1 and response options.

Metric	Responses
a) What is the governance type of the PCA?	Governance by Government
	Shared Governance
	Private Governance
	Governance by Indigenous peoples and local communities
	Unknown
	Other (please state type)
b) How is the PCA categorised?	Strict Nature Reserve
	Wilderness Area
	National Park
	Natural Monument or Feature
	Habitat/Species Management Area
	Protected Landscape/Seascape
	Protected Area with Sustainable Use of Natural Resources
	Other Effective area-based Conservation Measures (OECM)
	Other (please state type)
c) Is information on the PCA for management available?	2 = Yes
	1 = Partially
	0 = No
	0 = Unknown
d) Are management measures being implemented for the PCA to achieve its outcomes for conservation?	2 = Yes
	1 = Partially
	0 = No
	0 = Unknown
e) Does monitoring take place which helps to assess progress towards achieving conservation outcomes?	2 = Yes
	1 = Partially
	0 = No
	0 = Unknown
f) Is the PCA achieving its conservation outcomes?	2 = Fully
	1 = Partially
	0 = No
	0 = Unknown

Metric	Responses
g) What is the level of confidence in the data used to assess progress towards the achievement of conservation outcomes?	3 = High 2 = Moderate 1 = Low 0 = Not applicable
h) Confidence in achievement of conservation outcomes	f) * g)

4.2   Guidance Handout

JNCC instructed a contractor to produce a user-friendly guidance pamphlet which would support PCA practitioners to complete the metrics.

Many recommendations for the guidance were provided during the development of the indicator (Section 3) and these were summarised as follows:

- Short and easy to read

- Visually appealing by including a schematic of the metrics

- High-level summary of the purpose of the indicator

- Include supporting definitions and rationale for each response to the eight metrics

- To include case study examples

A draft version of the guidance pamphlet was created and reviewed internally, as well as externally at an OSPAR ICG-MPA meeting in February 2024. The final version of the guidance document can be found in Volume II: Appendices of this report.

4.3   Example of how to transpose existing PAME assessment data into the metric responses

As highlighted in the PAME assessment review section (Section 2.1), the METT-4 (UNEP-WCMC & IUCN 2024) is a well-established method of measuring management effectiveness around the globe. is an example of how PCA practitioners may decide to input a sub-section of existing METT-4 results into the MEPCA Indicator, to get a MEPCA Indicator score for their PCAs. Further detail on how the answers to the METT-4 questions could align to the response options for the MEPCA Indicator metrics are shown in Table 10.

There is also the option to use a mixture of existing PAME data and direct assessments, if practitioners do not believe the questions are directly applicable for the metrics. For example, in Table 10, there could be a range of METT-4 questions which could align with metric f). Therefore, it is at the PCA practitioner's discretion which question they select, or whether they wish to directly answer metric f).
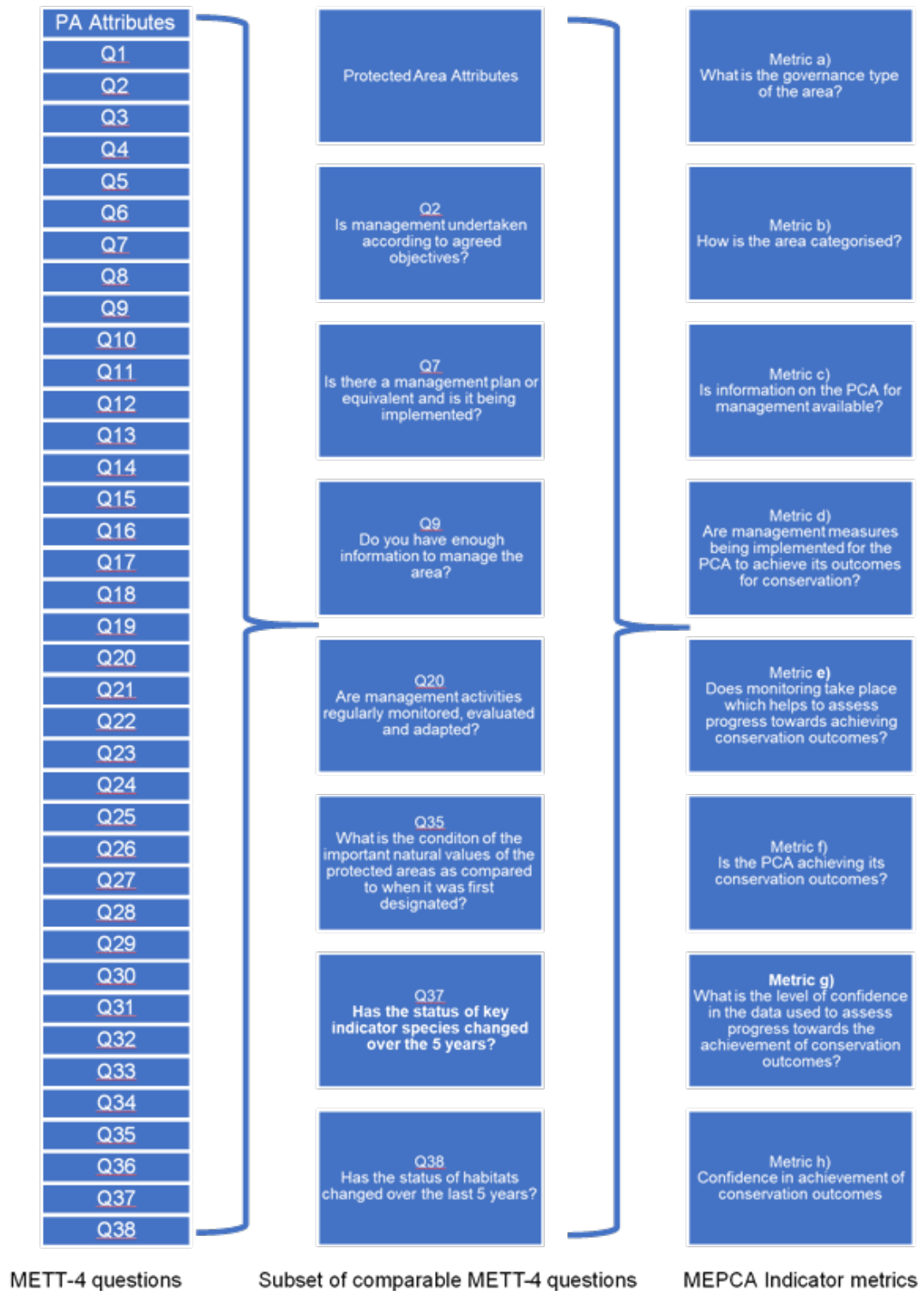
Figure 18. An example of how to select which questions from the METT-4 PAME methodology could be selected as starting points for the MEPCA indicator metrics.

Table 10. How the METT-4 questions could align to the MEPCA Indicator metrics, showing examples of which responses could equate to each score.

MEPCA Indicator metrics	METT-4 questions
a) What is the governance type of the area?	**Protected Area attribute: Governance Details**
Governance by Government	State
Shared Governance	Co-managed
Private Governance	Private
Governance by Indigenous peoples and local communities	Indigenous peoples and local communities
Unknown	N/A
Other	Other
b) How is the area categorised?	**Protected Area attribute: IUCN Protected Area Category**
Strict Nature Reserve	Category Ia - Strict Nature Reserve
Wilderness Area	Category Ib - Wilderness Area
National Park	Category II - National Park
Natural Monument	Category III - Natural Monument or Feature
Habitat/Species Management	Category IV - Habitat/ Species Management Area
Protected Landscape/Seascape	Category V - Protected Landscape/ Seascape
Protected Area with Sustainable Use of Natural Resources	Category VI - Protected Area with sustainable use of natural resources
OECM (please state type)	N/A
Other (please state type)	Not assigned or not known
c) Is information on the PCA for management available?	**7. Is there a management plan or equivalent and is it being implemented?**
2 = Yes	D. A management plan/equivalent exists and is being implemented
1 = Partially	B. A management plan/equivalent is being prepared or has been prepared but is not being implemented C. A management plan/equivalent exists but is only being partially implemented because of funding constraints or other problems
0 = No	A. No management planning has been undertaken
0 = Unknown	N/A

MEPCA Indicator metrics	METT-4 questions	
d) Are management measures being implemented for the PCA to achieve its outcomes for conservation?	**2. Is management undertaken according to agreed objectives?**	
2 = Yes	D. The protected area has agreed objectives and is management to achieve these objectives	
1= Partially	C. The protected area has agreed objectives, but is only partially management to achieve these objectives	
0 = No	B. The protected area has agreed objectives, but is not managed to achieve these objectives A. No form objectives have been agreed for the protected area	
0 = Unknown	N/A	
e) Does monitoring take place which helps to assess progress towards achieving conservation outcomes?	**20. Are management activities regularly monitored, evaluated and adapted?**	**7c. The results of monitoring, research and evaluation are routinely incorporated into management planning**
2 = Yes	D. A good monitoring and evaluation system exists of the performance of management activities, is well implemented, and results are regularly used to adapt and improve management activities	Tick box
1 = Partially	C. There is an agreed and implemented monitoring and evaluation system of the performance of management activities, but results do not feed back into management B. There is some ad hoc monitoring and evaluation of the performance of management activities, but no system and/or regular collection of results	Tick box
0 = No	A. There is no monitoring and evaluation in the protected area	Leave blank
0 = Unknown	N/A	N/A

MEPCA Indicator metrics	METT-4 questions		
f) Is the PCA achieving its conservation outcomes?	**35. What is the condition of the important natural values of the protected areas as compared to when it was first designated?**	**37. Has the status of key indicator species changed over the 5 years?**	**38. Has the status of habitats changed over the last 5 years?**
2 = Yes	D. Natural values are predominantly intact	D. The conservation status of key indicator species is desirable or has significantly improved over the last five years	D. The conservation status of habitats is desirable or has significantly improved over the last five years
1 = Partially	C. Some natural values are being partially degraded, but the most important values have not been significantly impacted B. Some natural values are being severely degraded	C. The conservation status of key indicator species is undesirable but has improved over the last five years	C. The conservation status of habitats is undesirable but has improved over the last five years
0 = No	A. Many important natural values are being severely degraded	B. The conservation status of key indicator species is undesirable and has remained unchanged over the last five years A. The conservation status of key indicator species is undesirable and has worsened over the last five years	B. The conservation status of habitats is undesirable and has remained unchanged over the last five years A. The conservation status of habitats is undesirable and has worsened over the last five years
0 = Unknown	N/A	N/A	N/A

MEPCA Indicator metrics	METT-4 questions
g) What is the level of confidence in the data used to assess progress towards the achievement of conservation outcomes?	**9. Do you have enough information to manage the area?**
3 = High	D. Information on the critical habitats, species, ecological processes and cultural values of the protected area is sufficient to support all areas of planning and decision making
2 = Moderate	C. Information on the critical habitats, species, ecological processes and cultural values of the protected area is sufficient for most key areas of planning and decision making
1 = Low	B. Information on the critical habitats, species, ecological processes and cultural values of the protected area is not sufficient to support planning and decision making A. There is little or no information available on the critical habitats, species, ecological process and cultural values of the protected area
0 = Not applicable	N/A
h) Confidence in achievement of conservation outcomes	**N/A**
f) * g)	N/A

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