

OBJECTIVES FOR DEVELOPING BERMUDA'S MSP MONITORING & EVALUATION PLAN

2026



BERMUDA OCEAN
PROSPERITY PROGRAMME

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Executive Summary

Bermuda's Marine Spatial Plan (MSP) provides a framework for managing ocean space to support long-term ecological health, economic prosperity, and community wellbeing. The MSP Monitoring & Evaluation (M&E) Plan ensures that these goals are measurable, transparent, and adaptable over time.

The M&E Plan will track whether the MSP and associated Marine Protected Areas (MPAs) are achieving their intended environmental, socio-economic, governance, enforcement, and communications outcomes. It will establish baseline data, demonstrate "before and after" impacts, and serve as a decision-making tool to support adaptive management. By integrating multiple monitoring workstreams into one cohesive framework, the M&E Plan ensures Bermuda is not only implementing ocean management measures, but also evaluating whether they are effective.

The M&E Plan is structured around six monitoring chapters under three themes:

- Science & Ecology (Marine Resources & Ecosystems; Fisheries),
- Human Dimensions (Socio-Economic; Enforcement & Compliance), and
- Institutional Effectiveness (Governance & Management; Public Engagement).

Each chapter is likely to include prioritised SMART objectives, measurable indicators, data collection methods, baseline data sources, reporting mechanisms, and adaptive management triggers.

January 2026 marks completion of Phase 1 of development. Between October 2025 and January 2026, monitoring-related objectives were refined and prioritised through stakeholder engagement. Across all chapters, Phase 1 included 84 participants, 6 meetings (7 hours total), and 14 survey responses. Objectives were scored and ranked to ensure alignment with stakeholder expertise and operational realities.

Phase 2 (February–May 2026) will translate these prioritised objectives into detailed monitoring designs, leading to a draft M&E Plan for review and final approval.

1.0 Introduction

Bermuda's Marine Spatial Plan (MSP) is designed to guide how ocean space is used and protected to ensure long-term ecological health, economic prosperity, and community wellbeing.

The MSP Monitoring & Evaluation (M&E) Plan is the framework that will track whether the MSP and its associated Marine Protected Areas (MPAs) are achieving their intended outcomes. It provides the structure needed to measure progress, identify gaps, and support adaptive management over time.

This report outlines the purpose of developing the MSP M&E Plan, presents the prioritised list of **monitoring-focused objectives**, summarises the stakeholder

engagement process to develop the objectives, and provides next steps toward full Plan development.

January 2026 marks the finalisation of phase 1 of developing the MSP M&E Plan and has delivered a finalised, stakeholder-informed set of prioritised objectives. Phase 2 will translate those objectives into a robust, practical monitoring framework, ensuring that Bermuda can measure success, learn from results, and adapt over time.

2.0 What is the Monitoring & Evaluation Plan?

The MSP M&E Plan is a comprehensive roadmap for tracking the effectiveness of Bermuda's MSP and MPAs across environmental, economic, governance, enforcement, and public engagement dimensions.

It is designed to:

- Provide scientific credibility and baseline data to demonstrate “before vs. after” outcomes of MSP and MPA implementation.
- Serve as a decision-making tool so that ocean management can be adapted to the changing needs of Bermuda's environment and the local community.
- Integrate monitoring workstreams into a unified, efficient framework, avoiding duplication and fragmentation.
- Ensure Bermuda's ability to deliver effective ocean management.

The MSP M&E Plan will establish a cohesive framework that links prioritised objectives to measurable indicators, ensuring that monitoring directly informs management decisions.

In short, the MSP M&E Plan ensures that Bermuda is not only implementing ocean management measures, but also measuring whether they are working.

3.0 Why is the Monitoring & Evaluation Plan Important?

The MSP Monitoring & Evaluation Plan ensures that Bermuda's ocean management is:

- Evidence-based
- Transparent
- Adaptive
- Accountable

By aligning scientific monitoring, socio-economic tracking, enforcement metrics, governance evaluation, and public engagement assessment within one integrated framework, Bermuda will be positioned to demonstrate the real-world impacts of its Marine Spatial Plan and Marine Protected Areas.

4.0 Structure of the Monitoring & Evaluation Plan

The MSP M&E Plan is structured around six core monitoring chapters, grouped into three overarching themes:

Science & Ecology

- Marine Resources & Ecosystems Monitoring
- Fisheries Monitoring

Human Dimensions

- Socio-Economic Monitoring
- Enforcement & Compliance Monitoring

Institutional Effectiveness

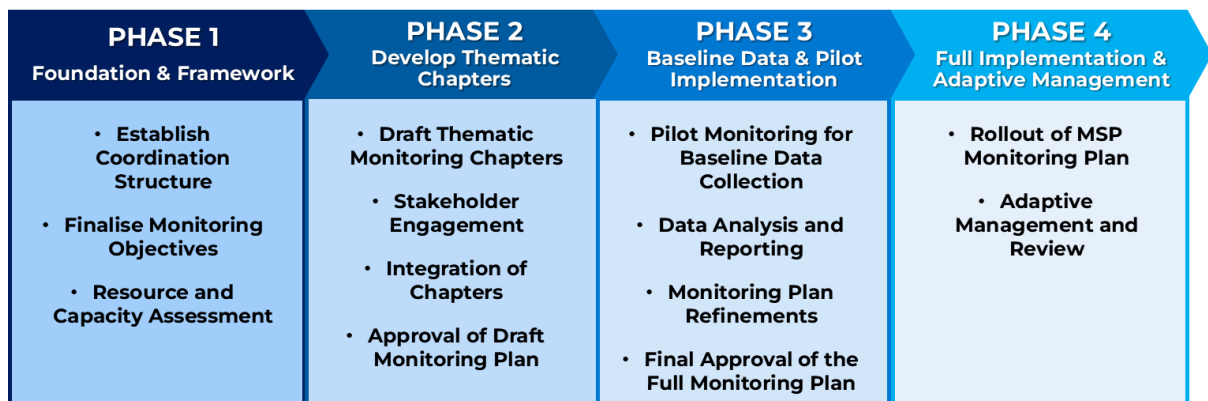
- Governance & Management Effectiveness
- Public Engagement

Each chapter will include core elements such as:

- Prioritised SMART monitoring objectives
- Key indicators and parameters
- Site selection and monitoring frequency
- Data collection and analysis methods
- Baseline data sources
- Data management and quality control
- Reporting mechanisms and adaptive management triggers
- Budget considerations and timelines

This structure ensures alignment across environmental, economic, and institutional monitoring efforts while maintaining clarity and accountability.

5.0 A Roadmap to Developing the Monitoring & Evaluation Plan



The MSP M&E Plan is a priority workstream identified by the Government of Bermuda and will be developed over four phases as outlined above.

6.0 Phase 1: Finalising and Prioritising Monitoring Objectives

6.1 Purpose of Phase 1

Phase 1 (October 2025 – January 2026) focused on refining and prioritising monitoring-related objectives across all six monitoring chapters.

The objectives were:

- Refined through stakeholder consultation
- Prioritised by stakeholders using a structured scoring exercise (1–10 scale)
- Finalised and prepared for presentation to the Steering Committee

These monitoring-related objectives are based on the foundational goals of the MSP and will serve as an “instruction manual” on how associated monitoring should be developed. The structured importance rating was applied as an internal tool to support prioritisation and inform resource allocation decisions by marine managers, where necessary.

6.2 What is a Monitoring-Related Objective?

A monitoring-related objective is a statement of a well-defined outcome or observable change that will enable us to monitor whether an MSP goal has been achieved. An objective is concrete, detailed, and focused. It is achieved with a reasonable amount of effort and resources, and will contribute to the desired goal.

Importantly, an objective is measurable and time-bound.

6.3 Stakeholder Engagement

Stakeholder engagement is central to the development of the MSP M&E Plan. Each chapter held targeted consultations to develop and prioritise the associated monitoring-related objectives. Stakeholders represented a diversity of interests, including: science, conservation, commercial and recreational fishing, tourism, finance, development, infrastructure, enforcement, outreach and education.

These objectives were developed using the foundational goals of the MSP as a basis. Consultations were conducted through a combination of mechanisms designed to collect feedback:

- Focus group meetings with stakeholders
- Private meetings with individuals
- Information sharing via email
- Virtual questionnaires

6.4 Consultation Overview

Across all chapters, Phase 1 engagement included:

- Total participants: 84
- Total meetings held: 6
- Total meeting hours: 7 hours
- Total survey responses: 14

This structured engagement process ensured that the final objectives reflect stakeholder expertise, lived experience, and operational realities.

7.0 Final Prioritised Objectives

The table below lists the finalised monitoring-related objectives for the MSP M&E Plan.

Note that certain elements are provisional and subject to modification as monitoring continues to develop; these elements are denoted by square brackets “[]”.

Group	Monitoring Chapter	ID #	Monitoring Objective
Science and Ecology	Marine Resources & Ecosystems Monitoring	MR1	Monitor the status and trends of key indicators of biodiversity, biological productivity, ecological function, anthropogenic stressors, and water quality, over replicate sites encompassing all spatial management designations and habitat types, to evaluate and optimise on-going management.
		MR2	Monitor [abundance, biomass and length-frequency profiles] of key fishery target species using an experimental design that will detect spatial differences and temporal change across all spatial management designations and habitat types, to inform management.
		MR3	Within [12 months of MSP adoption], establish baseline water quality monitoring across coastal and offshore zones. Assess [monthly] water quality trends in relation to environmental condition and potential impacts on economic opportunities such as fisheries, tourism, and recreation.
		MR4	The broader biological monitoring programme should incorporate surveys for juvenile fish [abundance] where appropriate, prioritising nursery habitats, to compare spatial differences and temporal changes across MPA designations and reference sites.
		MR5	Monitor benthic and bottom fish communities using an experimental design that will detect spatial difference and temporal changes inside and outside of pelagic zones B2, B4, B7 and B9, and incorporate concurrent monitoring to evaluate the level of impact associated with fishing [e.g., entangled fishing gear, debris, anchor damage, gear damage].

Group	Monitoring Chapter	ID #	Monitoring Objective
Science and Ecology	Marine Resources & Ecosystems Monitoring	MR6	Collect [abundance and length-frequency distribution] of fish participating in active aggregations, prioritising known aggregation sites protected under the Fisheries (Protected Areas) Order 2000 and any newly discovered aggregations.
		MR7	Develop specific methodologies to assess the presence and relative abundance of unique, rare and/or threatened species, including [conch, seahorses, sharks, marine mammals] and other species that fall under the Protected Species Act and Fisheries Order and official lists of managed invasive species, and incorporate these into the wider monitoring programme.
		MR8	As part of the wider MSP monitoring programme include coastal habitats as prioritised by the Science Committee (coral reefs, mangrove, seagrass, algal-vermetid reef, calcareous algae beds, salt marsh, rocky shore).
		MR9	Review the analytical data and reports on SeaSketch to correct known issues and assess accuracy. Consider addition of calcareous algae to nursery analytics.
		MR10	Map and monitor all point-source pollution discharges within [18 months] to establish baselines, and conduct [annual] water quality and sediment pollutant testing and compliance inspections to verify a 30–40% reduction in sewage-related, industrial, and antifouling pollutants at impacted nearshore sites within 3–5 years of MSP adoption.
		MR11	On completion of the strategic plan for the conservation and restoration of vulnerable habitats (HABA), design monitoring to assess the effects of recommended changes to environmental condition as appropriate.

Group	Monitoring Chapter	ID #	Monitoring Objective
Science and Ecology	Marine Resources & Ecosystems Monitoring	MR12	To the extent practical, include seamounts within the MSP monitoring programme.
		MR13	Continue monitoring of potential contaminants at all municipal sewage outfall(s) within [12 months of MSP adoption] and monitor [quarterly] for suspended solids, fats, oils, and greases to verify a 30–60% reduction within 3–5 years and ensuring levels are in line with recognised standards.
		MR14	Registered historic wreck sites should be factored into the wider monitoring plan and considered in site selection.
	Fisheries Monitoring	FS1	Survey commercial fishers [one year] after the implementation of each phase of spatial management measures to assess changes in fishing practices relating to [area fished, travel time / fuel consumption, directed effort, harvest levels and revenue], and reference the results against baseline and historic data and the reported catch.
		FS2	Enhance the on board and dockside fisheries observer program to cover [X]% of fishing trips / landed catch for key fishery target species to obtain data for stock assessments.
		FS3	Incorporate data from all available sources to monitor the stock status and trends of important locally managed fishery target species, reporting on key species [Spiny lobster, Red hind annually].
		FS4	Develop protocols for evaluating newly discovered fish aggregation sites to determine appropriate assessment, monitoring and management actions.
		FS5	Establish a monitoring program for recreational hook and line fishing to evaluate [levels of participation and rates of catch], and to inform the structure of a future licensing system.

Group	Monitoring Chapter	ID #	Monitoring Objective
Science and Ecology	Fisheries Monitoring	FS6	When a legal framework is in place for mariculture, monitor [annually] the number of associated [businesses, employees, revenues] to assess changes in economic benefits over time related to mariculture.
Human Dimensions	Socio-Economic Monitoring	SE1	By [20XX] or [10] years post-MSP adoption, assess how MSP management measures influence livelihoods, economic opportunities, and diversification across ocean sectors, and whether observed changes are linked to environmental conditions.
		SE2	Every [3–5] years, assess how climate change–related financial risks affect local marine businesses and coastal communities, including changes in [insurance premiums, requirements, or coverage] linked to marine activities.
		SE3	Assess tour operators [one year] after each phase of spatial management to assess changes in economic outcomes, and compare with baseline and historic data
		SE4	[Annually] monitor visitor use of MPAs and associated tour operator [revenues] to assess the economic impacts of MSP regulations on the marine tourism sector and the local community.
		SE5	Assess visitor [impact] on historic wrecks and other high-use dive sites by monitoring [site-appropriate condition indicators] and [visitor impact] between MPAs and control sites.
		SE6	Assess the proportion of marine tour operators and other tourism providers meeting [clearly defined] sustainability criteria.

Group	Monitoring Chapter	ID #	Monitoring Objective
Human Dimensions	Socio-Economic Monitoring	SE7	[Annually] track the number of actions resulting from the Bermuda National Tourism Plan and associated sustainability workstream and equity components, assess alignment with MSP objectives, and monitor implementation progress.
		SE8	[Annually] monitor performance of the integrated maritime tourism permitting system by tracking [sector participation, processing times, and user satisfaction], and use results to inform system improvements.
		SE9	[Annually] assess the environmental impacts and associated economic benefits of coastal and offshore developments and other relevant activities by tracking [EIAs alongside estimated economic costs, employment generation, and sectoral opportunities].
		SE10	Every [3-5] years, assess how climate change-related risks are influencing marine and coastal infrastructure by tracking whether projects assess [climate vulnerabilities, incorporate resilience measures, and address climate risks during the permitting process].
		SE11	Every [3-5] years, evaluate the socio-economic outcomes of public and private eco-friendly mooring systems by tracking [uptake and use by different user groups, costs to owners and operators, and effects on local marine services and businesses], and review related benthic condition using existing monitoring programmes.
		SE12	Every [3 - 5] years conduct a survey of marina operators, yacht clubs, and relevant agencies to assess current capacity, anticipated demand, and planned expansions to inform sustainable marina management.

Group	Monitoring Chapter	ID #	Monitoring Objective
Human Dimensions	Enforcement & Compliance Monitoring	EN1	Monitor progress in implementing the Marine Resources Enforcement Strategy (MRES) by tracking [legislative and regulatory updates, institutional reforms, and enforcement outcomes across agencies] on an [annual] basis, to assess whether strengthened legal and policy measures are improving compliance, deterrence, and enforcement effectiveness.
		EN2	Monitor annually the effectiveness of shark protection measures by tracking [reported commercial shark catch and bycatch, as well as observations and reports of illegal shark catches and associated enforcement actions], to evaluate trends over time to inform adaptive management.
		EN3	Monitor compliance with MSP zoning designations, permitted activities, and use-specific restrictions by tracking [spatially explicit violations, permit compliance, and enforcement response timelines] from detection through case resolution, to assess whether spatial management measures are being respected and to identify procedural bottlenecks and priority compliance risks.
		EN4	[Within 12 months] of MSP implementation, establish and operationalise the MCS Task Force and national Monitoring, Learning, and Evaluation (MLE) framework, and monitor [annually] the effectiveness of interagency coordination and information-sharing mechanisms through structured progress reporting aligned with regional frameworks and national security priorities.

Group	Monitoring Chapter	ID #	Monitoring Objective
Human Dimensions	Enforcement & Compliance Monitoring	EN5	Establish standardised protocols to record and report all enforcement interdictions involving commercial and recreational marine users, including the type of interaction, outcome category [e.g., pass, information provided, warning, citation, confiscation, major infraction], and track and record [subsequent penalties or follow-on actions], to ensure consistent compliance reporting, transparency, and trend analysis over time.
		EN6	Monitor [annual] compliance with commercial fisheries catch reporting requirements by tracking [the timeliness and completeness of submissions] and comparing self-reported catch data against verification sources, to assess reporting accuracy, identify non-compliance risks, and inform adaptive enforcement and outreach actions.
		EN7	Track annually the [number, type, and outcomes] of marine Environmental Impact Assessments (EIAs), including [mitigation, monitoring, and compensation requirements], and monitor compliance with EIA approval conditions through [inspections and enforcement actions], in order to strengthen accountability, adaptive management, and enforcement under the MSP legal framework.
		EN8	Compile data [biennially] to review condition, safety, and environmental compliance of maritime infrastructure, and track the [number of marine infrastructure sites maintained or upgraded, permit violations identified, and enforcement actions taken], to ensure maritime infrastructure is managed sustainably and in alignment with MSP regulations.

Group	Monitoring Chapter	ID #	Monitoring Objective
Human Dimensions	Enforcement & Compliance Monitoring	EN9	Measure enforcement and compliance effectiveness by integrating patrol effort and violation data with structured stakeholder feedback and targeted outreach activities, to assess whether enforcement and communication efforts are improving compliance outcomes, perceived legitimacy, and deterrence, and to support adaptive improvements through the Monitoring, Evaluation, and Learning (MEL) framework.
		EN10	Periodically assess public outreach mechanisms designed to enhance MSP compliance, including signage and printed materials, and the accessibility and responsiveness of public reporting channels, to strengthen regulatory awareness, stewardship, and community participation in compliance.
Institutional Effectiveness	Governance Effectiveness	GC1	Assess and report [annually] on the progress of priority MSP actions with respect to the implementation schedule and the incorporation of monitoring outcomes into updated work plans.
		GC2	Develop metrics to measure how scientific evidence and expert knowledge are incorporated into MSP decisions, and monitor for and report consistent application.
		GC3	Produce an [annual] report that clearly communicates monitoring outcomes and adaptive management to stakeholders.
		GC4	[Biannually] assess and report on adequacy of resources, funding and capacity to track the effectiveness of sustainable financing mechanisms at meeting MSP objectives.

Group	Monitoring Chapter	ID #	Monitoring Objective
Institutional Effectiveness	Governance Effectiveness	GC5	Monitor and report [annually] on whether the MSP authority, legal mandates, and interagency coordination mechanisms are formally established and functioning as intended.
		GC6	At official review periods as determined by the MDA legislation, review how the MSP is updated to reflect changing circumstances or new data.
	Public Engagement	PE1	Every [X] years, document the extent to which Blue Prosperity Plan (BPP) materials are included in school and college educational curricula, and gather structured educator feedback on how the content is used and perceived.
		PE2	[Annually] track participation in marine-related tertiary education, training, and workforce development programmes, and assess employment outcomes [e.g., job availability and numbers employed] in related sectors to evaluate capacity-building and labour market impacts.
		PE3	Every [X] years assess spatial overlap and perceived conflict across ocean user groups to inform MSP refinements and stakeholder engagement needs.
		PE4	Every [1-5 years as appropriate] assess [public, business, and visitor] awareness of and support for MSP regulations using both existing surveys and targeted consultations, and track trends to inform communication and outreach strategies.
		PE5	[Annually] monitor and report on public engagement reach of the MSP and related materials by tracking digital metrics [e.g., website visits, social media interactions], the [number and type of outreach events], and [volume of distributed materials], and use findings to adapt outreach strategies by target audience [e.g., public, businesses, tourists, education outlets]

Group	Monitoring Chapter	ID #	Monitoring Objective
Institutional Effectiveness	Public Engagement	PE6	Every [X] years, assess community access to marine resources, marine space use, and stakeholder views on benefit distribution across ocean user and demographic groups.
		PE7	Track stakeholder engagement in MSP governance by monitoring the [frequency and attendance of scheduled meetings], and assess the cultural diversity of participants across governance and community entities every [X] years to evaluate representativeness and inform future outreach.
		PE8	Every [2-5] years, assess cultural values of ocean users [using tools such as the Omnibus Survey, Ocean Use Survey, stakeholder interviews] and whether they align with marine management.
		PE9	Every [1-3] years assess and report on the accessibility of governance decisions and stakeholder perceptions of transparency and inclusiveness.

8.0 Next Steps (Phase 2 Overview)

Phase 2 will focus on finalising each thematic monitoring chapter using the above objectives as a guide.

Stakeholders will continue to be involved in developing monitoring for Bermuda's MSP to determine the parameters, methods, site selection, monitoring frequency and data sources. A draft of the M&E Plan will then be developed and undergo review before final approval and transition to implementation.