BERMUDA OCEAN
PROSPERITY PROGRAMME

Principles, Goals, & Objectives for Bermuda's Marine Spatial Plan

July 10, 2021

BERMUDA OCEAN PROSPERITY PROGRAMME STEERING COMMITTEE

THE BOPP STEERING COMMITTEE IS COMPRISED OF:

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES (DENR)
BERMUDA BUSINESS DEVELOPMENT AGENCY (BDA)
BERMUDA ECONOMIC DEVELOPMENT CORPORATION (BEDC)
BERMUDA TOURISM AUTHORITY (BTA)
DEPARTMENT OF PLANNING (DOP)
REGULATORY AUTHORITY (RA)
ENVIRONMENTAL AUTHORITY (EA)
HISTORIC WRECKS AUTHORITY (HWA)
COMMERCIAL FISHERIES COUNCIL (CFC)
MARINE RESOURCES BOARD (MRB)
ESTATES SECTION, MINISTRY OF PUBLIC WORKS
DEPARTMENT OF ENERGY (DOE)
DEPARTMENT OF MARINE AND PORTS SERVICES (M&P)
BERMUDA INSTITUTE OF OCEAN SCIENCES (BIOS)
BERMUDA NATIONAL TRUST (OBSERVER) (BNT)

The Steering Committee of the Bermuda Ocean Prosperity Programme (BOPP) would like to thank all the stakeholders that provided input to this process.

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Purpose of this Document

This document serves to notify the Bermudian public of the Principles, Goals, and Objectives that will guide the development of Bermuda's Marine Spatial Plan (MSP). Collectively, the Principles, Goals, and Objectives determine the nature and characteristics of the MSP process and the MSP itself, focusing and tailoring MSP efforts toward achieving the results that Bermuda wishes to achieve.

Bermuda's Marine Spatial Plan

Through the Bermuda Ocean Prosperity Programme (BOPP), the Government of Bermuda has committed to develop and legally adopt an enforceable and comprehensive Marine Spatial Plan to sustainably manage resources and protect 20% of Bermuda's entire Exclusive Economic Zone (EEZ).

Marine Spatial Planning is a science-based and stakeholder-driven process to manage ocean space to reduce user conflict, support a thriving blue economy, and prioritize environmental health and human wellbeing. An MSP assembles existing knowledge of the marine environment, incorporates the priorities of stakeholders, and, through an iterative public process, creates a map and accompanying management plan to identify where and how different ocean uses can occur. An overall goal of MSP is to maximize the benefit of human uses and minimize negative environmental impacts. This planning process involves considerable stakeholder and governmental input.

It is important to remember that MSP is not a one-time effort. During the MSP process, plan details are adapted and modified as circumstances change and new information becomes available. Following initial adoption of an MSP, it can be revised and updated in response to gains in knowledge, as conditions change in the marine environment, or as otherwise desired.

The Principals, Goals, and Objectives

The Principles, Goals, and Objectives outlined in the following sections are meant to define the purpose and desired results of Bermuda's MSP. The ***principles*** set the tone of the MSP and provide high-level guidance regarding its intrinsic nature. The ***goals*** are high-level, aspirational statements that collectively identify the desired outcomes of the MSP. For each goal, ***objectives*** provide specific, defined, and measurable outcomes. For Bermuda's MSP the objectives are divided into ***non-spatial*** and ***spatial*** objectives.

Non-spatial objectives are activities or processes to be achieved during the development of the MSP and after the MSP is adopted in order to a) support MSP implementation and management, or b) to address future management needs identified in the MSP process.

Important note on non-spatial objectives: To guide implementation of the non-spatial objectives, the BOPP Steering Committee will identify a lead, a listing of those Government ministries and/or departments that should be consulted, and a timeline for completion. The current content for these categories is provisional, and in some cases, is "to be determined" or incomplete. Each category will be revisited and finalized by the BOPP Steering Committee prior to MSP adoption. Stakeholders can expect revisions to these categories as part of the MSP management plan development and completion.

Spatial objectives relate to, occupy, or otherwise have the character of physical space. Options for achieving these objectives will be assessed by a computer model using spatial data[1]; the model will identify alternative scenarios (including map outputs) for meeting these spatial objectives. For example, the model will help to identify potential locations for Marine Protected Areas (MPAs), as well as areas potentially suitable for human uses, while minimising conflict between stakeholders. The model will also provide summary analyses describing the benefits and drawbacks of potential scenarios. The BOPP Steering Committee will consider model outputs in developing the spatial component of the Draft MSP prior to its release for public review. Following stakeholder feedback, the BOPP Steering Committee will propose a Final Draft MSP for legal government adoption. A spatial objective aims to outline the dimensions of specific locations were human activities can be permitted, restricted or enhanced.

The process to define the principles, goals, and objectives - Recognizing the importance of stakeholder engagement (as outlined in the BOPP Stakeholder Engagement Policy in Appendix 1), the BOPP Steering Committee initiated stakeholder input to draft Principles, Goals, and Objectives through an online, public survey in October of 2020. The majority of feedback was provided through the BOPP Ocean Village, a collection of focus groups organized by ocean use: commercial fishers; passive recreation and conservation; diving, snorkeling and swimming; tourism, boating and sports; utilities, infrastructure and development; recreational fishers; aquaculture (mariculture); and wastewater/pollution management. (A full description of the Ocean Village can be found in Appendix 2.) The BOPP Steering Committee is grateful for the cumulative 70 hours of discussion during the 4-month comment period that Ocean Village participants dedicated to the MSP process.

Appendix 3 provides a record of all the stakeholder feedback received regarding the draft Principles, Goals, and Objectives.

The BOPP Steering Committee reviewed stakeholder input on the draft Principles, Goals, and Objectives over the course of four 2-hour meetings in the spring of 2021. In doing so, the Steering Committee discussions focused on considerations for the MSP such as practicability, anticipated benefits, applicability, and the ability to strengthen current marine priorities, including a thriving and sustainable blue economy. All received comments are saved for the record and future consideration.

1 Marine spatial data used in the Bermuda MSP will include spatial data describing the location and extent of marine habitats, species, and human uses. These data come from a variety of sources, including scientific literature and an Ocean Use Survey in which Bermuda ocean users identified areas used by fishers, recreational activities, and other users of Bermuda's marine waters.

PRINCIPLES

A **principle** is a basic or essential quality or element determining the intrinsic nature or characteristic behaviour of the MSP.

The MSP should be guided by a set of principles that: (a) determine the nature and characteristics of the MSP process; and (b) reflect the results you want to achieve through MSP. Principles do not stand by themselves, but should be reflected throughout the MSP process, and, in the goals and objectives identified later.

BOPP MSP CORE PRINCIPLES	
Common Resources	Bermuda's marine environment belongs to all and its integrity is held in trust for the people of Bermuda by the Government and managed collaboratively among stakeholders for the benefit of current and future generations.
Conflict Management	Integrated management of the marine environment will minimize conflict among stakeholders while recognizing each other's interest and the interests of nature.
Ecosystem Integrity	Management of the dynamic marine environment aims to conserve biodiversity and ecosystem function. *Definition – Ecosystem Function: The services provided for humans and other organisms through the interaction of living and non-living elements in an ecosystem.*
Sustainable 'Blue Economy'	Management of the marine environment aims to support a sustainable 'blue economy' that promotes social justice, equity, inclusion, innovation, and economic opportunities for Bermuda's people.
Community Values	Management of the marine environment will fully consider cultural heritage, local traditions, and community amenity value.
Transparency and Integration	The decision-making process will be clear, transparent, and shared publicly, including contributions from all stakeholders.
Anticipatory and Adaptive	Management of the marine environment will be forward-looking and adaptive to account for new information, opportunities, and changing circumstances.
Evidence-Based	To address the potential for risk to the human and natural environment, decisions regarding proposed activities and developments in the marine environment will be based on the best available scientific and socio-economic evidence.

GOALS and OBJECTIVES

A **goal** is a statement of general direction or intent. They are high-level statements of the desired outcome that you hope to achieve.

Goals are intended to be broad and abstract. They are differentiated from objectives in that they cannot be measured. Each goal has associated objectives that define how it will be achieved with a measurable outcome.

An **objective** is a statement of desired outcomes or observable behavioural changes that represent the achievement of a goal.

Objectives are concrete, detailed, focused, and well-defined outcomes of the MSP. They are achievable with a reasonable amount of effort and resources, and lead to a desired goal. Importantly, objectives are measurable, and time bound.

Bermuda's MSP will have spatial and non-spatial objectives as defined in the introduction to Section III of this document. A spatial objective aims to outline the dimensions of specific locations were human activities can be permitted, restricted or enhanced.

Important note on non-spatial objectives: To guide implementation of the non-spatial objectives, the BOPP Steering Committee will identify a lead, a listing of those Government ministries and/or departments that should be consulted, and a timeline for completion. The current content for these categories is provisional, and in some cases, is "to be determined" or incomplete. Each category will be revisited and finalized by the BOPP Steering Committee prior to MSP adoption. Stakeholders can expect revisions to these categories as part of the MSP management plan development and completion.

GOAL	OBJECTIVES				
Facilitate sustainable commercial and recreational fisheries	Spatial Objectives	Ensure continued access to the most highly valued fishing grounds on and around the Bermuda platform and outlying banks, as identified by the Ocean Use Survey, and other relevant data sources by March 2022. To the extent possible, allow for spatial continuity of fishing for pelagic species in depths >55 m around the edge of the Bermuda platform and the outlying banks by March 2022.			
	Non-Spatial Objectives	What	Lead	Consult	Timeline
		Develop a licensing structure which will allow for better monitoring of reported catches. This will lead to better reporting as it relates to quotas and better management of fish stocks to ensure sustainable commercial and recreational fisheries.	Commercial Fisheries Council (CFC)	Department of Environment and Natural Resources (DENR)	By 2024
Preserve areas of historical and cultural importance	Spatial Objectives	Marine protected areas designations should prioritize those areas that have both conservation and historical significance.			
	Non-Spatial Objectives	What	Lead	Consult	Timeline
		N/A			
Identify and evaluate the environmental, economic, cultural, and social impacts of all proposed marine activities and developments, and require Environmental Impact Assessments as outlined in the MSP Legal Framework.	Spatial Objectives	N/A			
	Non-Spatial Objectives	What	Lead	Consult	Timeline
		Develop and adopt the legal framework for regulating and managing activities and development within the marine environment, including statutory provisions for evaluating impacts of all proposals and requiring Environmental Impact Assessments for certain proposals.	DENR and Department of Planning	Department of Public Lands and Buildings and Department of Education (DOE)	July 2022
		Develop a Strategic Environmental Assessment to establish the decision-making criteria and process for certain types of development proposals.	DENR and Department of Planning	Department of Public Lands and Buildings and DOE	TBD

GOAL	OBJECTIVES				
Support environmentally sustainable marine and maritime tourism that promotes social justice, equity, inclusion, innovation, and economic opportunities for Bermuda's people	Spatial Objectives	N/A			
	Non-Spatial Objectives	What	Lead	Consult	Timeline
		Design a streamlined, integrated, one-stop permitting system for maritime tourism businesses.	TBD	TBD	By 2023
		Integrate sustainable, equitable blue tourism policies and actions into the implementation of the Bermuda National Tourism Plan.	Bermuda Tourism Authority (BTA)	TBD	By 2023
		Promote educational materials that enhance awareness about environmentally friendly coastal maritime tourism practices (e.g., watercraft handling around sensitive areas, best practices for SCUBA diving, etc.).	BTA	TBD	By 2024

GOAL	OBJECTIVES				
Support maritime infrastructure needs	Spatial Objectives	N/A			
	Non-Spatial Objectives	What	Lead	Consult	Timeline
		Lead a feasibility study that evaluates the benefits and challenges (including insurance considerations and cost) for the gradual removal of abandoned and unregistered moorings, and the changeover or installation of eco-friendly swing moorings, including public use moorings in environmentally sensitive areas commonly used for recreation.	Department of Marine and Ports Services	Department of Public Lands and Buildings, Marine Resources Board (MRB)	By July 2023
		Lead the creation of a study that assesses potential sea level rise and other climate change impacts (rising temperatures, storm frequency and precipitation), including possible adaptation plans, on the airport, bridges, causeways, commercial wharves, ferry docks, fuel docks, marinas, boatyards, BELCO power station, and beaches, updating and expanding on the Smith Warner (2004) and National Trust (2008) reports.	Cabinet, with the support of the Disaster Coordinator	Department of Planning (DOP), Ministry of Public Works, Department of Public Lands and Buildings, DENR, DOE, Marine & Ports	TBD
		Conduct a survey of current marina operators, yacht clubs and the Bermuda Tourism Authority to inquire on current capacity, anticipated demand and any plans for expansion.	Department of Marine and Ports Services	DOP	By July 2023

GOAL	OBJECTIVES				
Evaluate the feasibility of Integrated Resource Plan (IRP)-proposed marine renewable energy solutions taking into account economic, environmental, and cultural impacts	Spatial Objectives	Identify potential energy production zones that recognize the physical characteristics and criteria that should be considered when placing ocean renewable technologies for the purpose of delineating the broadest areas where these technologies could be implemented in Bermuda's EEZ with the lowest potential impact to ecosystem function.			
	Non-Spatial Objectives	What	Lead	Consult	Timeline
		Contribute to a Strategic Environmental Impact Assessment as part of this MSP to establish the decision-making criteria and process for marine renewable energy development proposals by December 2022. *Note: Should reference the RA's Bulk Generation Procurement Rules found here.*	Regulatory Authority	DENR, DOP, Department of Public Lands and Buildings, DOE	By 2023
Facilitate the development of responsible, environmentally and economically sustainable mariculture* **Mariculture is the cultivation of fish or other marine life for food.*	Spatial Objectives	N/A			
	Non-Spatial Objectives	What	Lead	Consult	Timeline
		Lead a research project on the economic feasibility/viability of mariculture in Bermuda by 2023 and produce a guidance document regarding environmental, social and economic considerations for mariculture in Bermuda.	DENR	Bermuda Institute of Ocean Sciences (BIOS)	By 2025
		Develop legislation and policy to create a framework to enable mariculture in Bermuda.	DENR	TBD	By 2025

GOAL	OBJECTIVES				
Facilitate effective enforcement within the marine environment	Spatial Objectives	N/A			
	Non-Spatial Objectives	What	Lead	Consult	Timeline
		Develop a marine resources enforcement strategy that clearly outlines consequences for infractions and is implemented through strengthened legislation.	DENR	Attorney General's Chambers	TBD
		Conduct a study to measure the efficacy of enforcement measures	TBD	TBD	TBD
		Conduct a public education campaign to raise awareness about existing and new marine regulations.	DENR	TBD	TBD
Protect biological diversity, productivity, and ecological function across all habitat types	Spatial Objectives	Designate a minimum of 20% of the Bermuda EEZ as fully protected no-take Marine Protected Areas. These designations should consider and optimize existing designations. Efforts should be made to ensure the representative coverage of each key habitat type (20%) and higher coverage of habitats as specified in other objectives.			
	Non-Spatial Objectives	What	Lead	Consult	Timeline
		Conduct a study to assess the need and cost/benefit for regulations on transitory commercial maritime traffic speed in Bermuda's EEZ.	Department of Marine and Ports Services	DENR	By 2024
		Increase ties with relevant international programs to consider Bermuda's EEZ in the context of the wider oceanic environment.	DENR	TBD	By 2023
Facilitate reproductive success of marine species through protection and restoration of important nursery grounds, spawning sites, and migratory routes	Spatial Objectives	Maintain seasonal no-take restrictions at all known 'fish' breeding and/or aggregation sites under the Fisheries (Protected Areas) Order 2000, and evaluate changes as new scientific information becomes available.			
		Identify and protect 50% of coastal habitats that appear to be juvenile fish nursery habitats and/or used by protected marine species.			
	Non-Spatial Objectives	What	Lead	Consult	Timeline
		N/A			

GOAL	OBJECTIVES				
Restore degraded and vulnerable habitats	Spatial Objectives	Establish active restoration of areas that were formerly seagrass habitats (100m^2) through turtle exclusion.			
	Non-Spatial Objectives	What	Lead	Consult	Timeline
		Inventory and assess past, present and potential salt marsh and mangrove habitat areas and develop a strategic plan for conservation and restoration.	DENR	Bermuda Zoological Society (BZS)	By 2024
		Initiate active restoration of threatened mangrove habitats.	DENR	BZS	By 2024
		Initiate active restoration of damaged and/or degraded coral habitats in protected areas.	DENR	BZS	By 2025
Preserve unique, rare, and/or threatened species and habitats	Spatial Objectives	When designating marine protected areas, prioritize those areas that seek to protect habitat used by unique, rare, and/or threatened species named in the Protected Species Act.			
		When designating marine protected areas, prioritize those areas that seek to protect at least 40% of seamount area in Bermuda's outer EEZ. This objective specifically excludes Argus and Challenger Banks.			
	Non-Spatial Objectives	What	Lead	Consult	Timeline
		Support and promote a strategic management plan that recommends levels of protection for remaining natural/living rocky intertidal shorelines and beaches from inappropriate development.	DENR	DOP	By 2024
		Support recommendations as identified by DENR for protections of shark species.	DENR	TBD	TBD

GOAL	OBJECTIVES				
Improve water quality and reduce ocean pollution	Spatial Objectives	N/A			
	Non-Spatial Objectives	What	Lead	Consult	Timeline
		Map point-source pollution and reduce the concentration of pollutants (sewage related, industrial waste, antifouling paints) by 30-40% at impacted nearshore areas.	DENR	TBD	By 2025-2030
		Improve wastewater treatment of municipal sewage outfalls to reduce the concentration of sewage related pollutants (suspended solids, fats, oils, and greases) in surrounding waters 30-60% below current concentrations.	DENR	Department of Works and Engineering	By 2027-2030
		Establish a strategic plan for the management of abandoned/sunken boats.	DENR	Marine & Ports, Attorney General's Chambers	TBD
Promote scientific and technological research	Spatial Objectives	N/A			
	Non-Spatial Objectives	What	Lead	Consult	Timeline
		Develop legislation that establishes a clear and straightforward license process for research activities by local and visiting scientists.	TBD	BIOS, DENR	By 2023
		Create an intersectoral working group to identify key areas of research and develop strategies to increase activity in the marine environment.	TBD	BIOS, DENR	By 2023

GOAL	OBJECTIVES				
Educate the public about the importance of the marine environment	Spatial Objectives	N/A			
	Non-Spatial Objectives	What	Lead	Consult	Timeline
		Deliver a series of public outreach MSP campaigns in collaboration with key partners.	DENR, BIOS	ECO	By 2023
		Deliver a series of educational curriculum products relative to the marine environment and MSP to be distributed to local schools.	DENR, BIOS	ECO	By 2023-2024
		Incorporate Bermuda's MSP in local adult education programs (18+) to give Bermudians experience relevant to local marine environment jobs.	DENR, BIOS	Department of Education/ Bermuda College	By 2023
		Develop an intersectoral working group to promote collaboration among marine stakeholders for MSP implementation.	DENR	ECO	TBD

APPENDIX I

Stakeholder Engagement Strategy

The BOPP stakeholder engagement policy was approved by the Steering Committee on November 24, 2020.

Stakeholder engagement and feedback throughout all parts of the MSP creation and implementation process is acknowledged as a critical component to the success of BOPP and its leadership is committed to:

1. Involving interested individuals early in the decision-making process and considering consulting stakeholders in draft creation.
2. Engaging with stakeholders directly affected by MSP creation at the appropriate time with effective methods.
3. Being adaptable and flexible regarding methods necessary for stakeholder consultation.
4. Respecting the diversity of people, needs, and lifestyles.
5. Ensuring clarity regarding the purpose of any consultation and informing stakeholders how their provided information will be utilized.
6. Making documents publicly available.
7. Communicating clearly and avoiding jargon terms and phrases.

Policy of the Steering Committee for Considering Public Feedback:

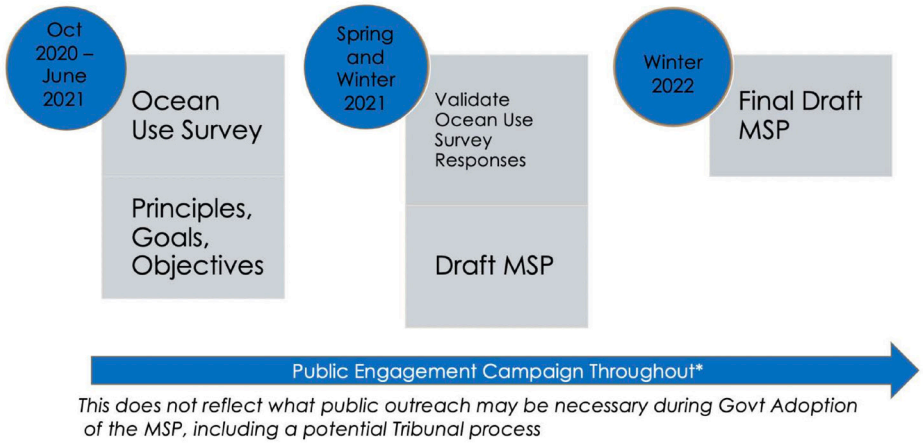
- Although the Ocean Village is a targeted means for collecting feedback to BOPP outputs, anyone can provide public feedback. Special qualifications are not needed.
- All written feedback submitted to the Steering Committee will be attributable to either an individual, Ocean Village Group, or other entity.
- All written comments will be posted to the BOPP website. The author will be listed as an Ocean Village Group, entity, or "individual" with an assigned number. The identity of individual authors will not be made public. Steering Committee responses will be clearly marked.
- The Chair of the BOPP Steering Committee will announce a specific feedback period for each task. Once that feedback period ends, the Steering Committee must consider the feedback provided and issue a written response within a reasonable period of time. Feedback similar in content and theme may be grouped together with one collective response.
- Consensus comments from Ocean Village Groups will be given special consideration by the Steering Committee, and especially those comments of ocean users whose livelihoods depend on the marine environment.
- Comments will be evaluated against the Principles of the Blue Economy Strategy and the Principles, Goals, and Objectives of the Marine Spatial Plan.

APPENDIX II

Description of Ocean Village Groups

Shortly after the public launch of BOPP, stakeholders were organized into 8 Ocean Village focus groups. The groups were organized according to ocean use: commercial fishers; passive recreation and conservation; diving, snorkelling and swimming; tourism, boating and sports; utilities, infrastructure and development; recreational fishers; aquaculture (mariculture); and wastewater/pollution management.

The Ocean Village stakeholder engagement has been organized into three phases. Consultation on the p/g/os was included in the first phase of engagement.



It should be noted that the Ocean Village focus groups are not meant to replace engagement with the general public or the official engagement organized by the Government of Bermuda when it legally adopts the Marine Spatial Plan.

During the Phase 1 of engagement, each group was comprised of 6 to 13 participants that joined by invitation from the BOPP Administrative team, by self-nomination, or in the case of the commercial fishers, by nomination from the Fishermen's Association Bermuda. Additionally, the Ocean Village members were encouraged to reach out to individuals in their organisations and various networks to foster wider public participation in the process. Consultation occurred through a series of meetings organized by an assigned facilitator. Participants in the wastewater/pollution group were consulted via email and one-on-one.

Each focus group was asked to rank, in order of importance, and provide textual suggestions to the Draft Principles, Foundational Goals, and Foundational Objectives that the Steering Committee had approved for consultation. The groups were also asked to draft Resource Use objectives relevant to their particular sector. Focus groups also completed an Ocean Use Survey through participatory mapping applications.

APPENDIX III

Stakeholder Feedback Received

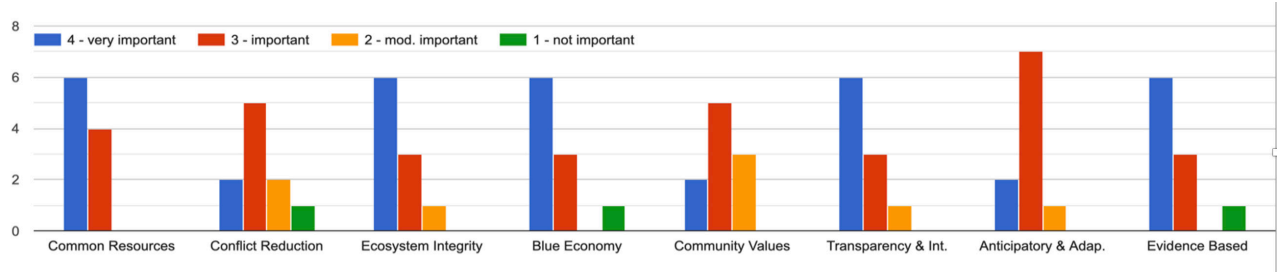
Appendix 3 includes all the stakeholder feedback received.

Acronyms are used to indicate who provided the feedback:

OVRF	Ocean Village Recreational Fishers
OVSSD	Ocean Village Swimming, Snorkeling, Diving
OVPRC	Ocean Village Passive Recreation and Conservation
OVA	Ocean Village Aquaculture
OVCF	Ocean Village Commercial Fishers
OVUID	Ocean Village Utilities, Infrastructure, and Development
I1	Individual 1
OVTBS	Ocean Village Tourism Boating and Sports
OVWP	Ocean Village Wastewater and Pollution

A. Stakeholder Feedback: Principles

Stakeholder Task
Please rank these draft core principles from 1 to 4, being 4 very important for marine spatial planning in Bermuda, 3 important, 2 moderately important and 1 not important. The same score can be used for more than one principle.



The BOPP Steering Committee approved for stakeholder consultation the principles outlined in the table below. The table also includes the stakeholder feedback received.

Draft Principles		Stakeholder Feedback
Common Resources	Bermuda's marine environment belongs to all and is held in trust and managed by the Government for the benefit of current and future generations.	Common Resources - the assumption that Government had sole responsibility to manage the resources. There are examples, e.g. New Zealand, where there is collaborative management. We can all agree that our marine resources are common resources, but Government's sole responsibility does not necessarily follow from that. OVUID Common Resources: Consensus comment: This is very important. If done correctly there won't be a need for conflict resolution. It is a communal right and the government's responsibility. However, the word 'government' is an issue and there should be more of a focus on community ownership and responsibility. At very least, independent parties should have involvement to hold the government accountable. OVSSD Management of Bermuda's Resources should be by a contracted entity distinct and autonomous from the Bermuda Government, but with Government oversight. This entity could be 'The Bermuda National Marine Trust' composed of Bermuda government senior officials, Bermuda-based scientists and independent MSP managers- similarly to that of BOPP (conducted by government, Waitt Institute and BIOS) in order to always have the wellness of the Ocean and its resources as the main driving principle. OVA Environmental sustainability must be incorporated in the wording of this principle's description. Suggested: 'Bermuda's marine environment belongs to all and is held in trust and managed by XXX, while maintaining ecosystem integrity, for the benefit of current and future generations.' OVA

Draft Principles		Stakeholder Feedback
Conflict Reduction	Integrated management of the marine environment will minimize conflict among stakeholders, as well as conflicts between human uses and nature.	Conflict Resolution - issue of parity of perspectives, where no one point of view became the default decider. If a disparity between an Economic interest and an Environmental interest exists, then it should not always be decided by the environmental interest. OVUID Conflict Reduction: Consensus comment: Not as important as the common resource principle but is necessary for long-term success. It is important that everyone's needs are acknowledged. It is suggested that this principle be combined with the Common Resources principle. OVSSD Reword "Conflict Reduction" to 'Conflict Resolution'. The group realizes that it is difficult to have 100% resolution, but feels that resolution should be the aim. OVA
Ecosystem Integrity	Management of the dynamic marine environment aims to conserve biodiversity and ecosystem function to ensure continued delivery of vital ecosystem goods and services.	The Ecosystem Integrity Principle should simply read "Management of the dynamic marine environment aims to conserve biodiversity and ecosystem function". There are other principles that relate to the goods and services that the ecosystem provides. OVPRC Ecosystem Integrity: Consensus comment: Bermudians rely on this for their livelihoods. Without this Bermuda cannot exist and won't be hospitable to humans. OVSSD 'Ecosystem Integrity' underpins all principles, and should be standing apart. For this reason, the Aquaculture Group ranked it as a '4', with all others ranked below. Note: 'Evidence-based' principle is considered a must by the group, and was initially ranked as a 4, but is given a 3 ranking to make a distinction with 'Ecosystem Integrity'. OVA

Draft Principles		Stakeholder Feedback
Sustainable 'Blue Economy'	Management of the marine environment will ensure a sustainable 'blue economy' that provides employment opportunities and societal benefits, with minimal harm to the marine environment.	Blue Economy: Consensus comment: Will be an essential component for improving people's livelihoods by improving tourism, international business, and providing local amenities. Must emphasize sustainability and minimal harm. There is no overlap with other principles: if other principles are prioritized, this element will automatically benefit. OVSSD Principle 4: 'Sustainable Blue Economy', Description should include economic, societal, and environmental components. Suggested Rewording: "…'blue economy' that provides employment opportunities and societal benefits while maintaining ecosystem integrity." Please note: Ranking by Aquaculture group for this principle would have been higher if environmental sustainability was included in description. OVA
Community Values	Management of the marine environment will take cultural heritage, local traditions, and community amenity value into account.	Community Values, how a place is used by people. The Principle could be a bit clearer in separating local tradition, which might just be individual or family-oriented versus community-based, which is a larger group. The trade-offs for proposed developments need to be considered but there will be times when the broader societal benefits are greater that the community value of a location. OVUID Community Values: Consensus comment: Important to take into account so long as the values do not conflict with the environment and other stakeholders. Community values that are outdated and damaging need to be identified and resolved, through compromises that work for the majority. OVSSD 'Community values'. Rewording of description to: 'Management of the marine environment will take cultural heritage, local traditions, and community amenity value into account, while preserving ecosystem integrity'. OVA

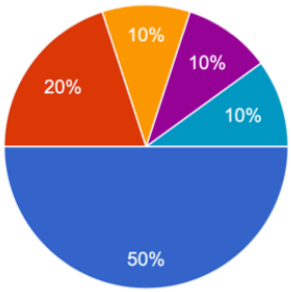
Draft Principles		Stakeholder Feedback
Transparency and Integration	The decision-making process will be made easy to understand, transparent, and shared publicly, including contributions from all stakeholders.	Transparency and Integration: Consensus comment: People must be involved and understand what decisions are being made so that they do not feel as though their rights are being stripped away. They will be supportive of the results if they trust and have access to the process, although it's acknowledged that discussion is only useful to a point, then a final decision needs to be made for progress to happen. OVSSD
Anticipatory and Adaptive	Management of the marine environment will be forward-looking and adaptive to account for new information, opportunities, and changing circumstances.	Anticipatory and Adaptive: Consensus comment: Impossible to get this right on the first attempt. The project must evolve with new information and acknowledge shortfalls. Being able to make necessary changes to legislation is a substantial improvement. Anticipating change and planning for it is preferable to over reacting after-the-fact. OVSSD 'Anticipatory and Adaptive'. Rewording of description to: 'Management of the marine environment will be forward-looking and adaptive to account for new information, opportunities, and changing circumstances, while ensuring continued health of the ecosystem'. OVA
Evidence-Based	Management decisions will be based on the best available evidence, but if that is lacking, the burden of proof falls on those advocating for an action, otherwise a precautionary approach applies.	Precautionary principle - a decision may be required without sufficient evidence to understand the potential impacts but it may be clear that not going forward with a proposal could result in greater environmental harm. OVUID Evidence Based: Consensus comment: Without proper evidence all of the other principles lose their foundation. This drives science and knowledge. A need for BOPP/SC to clearly define both 'precautionary approach' as well as 'no take zones' with inclusion of multiple concrete examples. OVSSD

B. Stakeholder Feedback: Resource Use Goals and Objectives

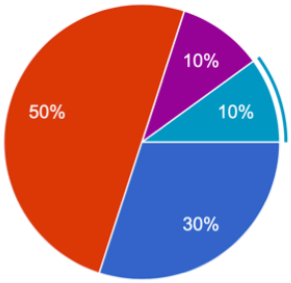
DRAFT Resource Use Goals

Respondents were asked to rank the draft Resource Goals as very important, important, moderately important, or not important.

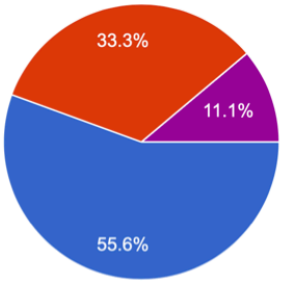
Note that some respondents included additional answers to the multiple choice including "not really sure", "Uhuh", "yes", and "no renewable energy".



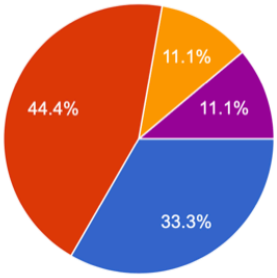
Facilitate sustainable commercial and recreational fisheries (10 responses)



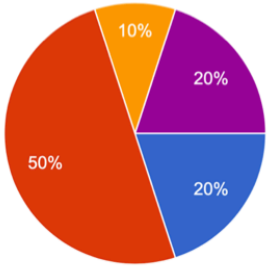
Protect areas of historical, cultural, recreational, and societal importance. (10 responses)



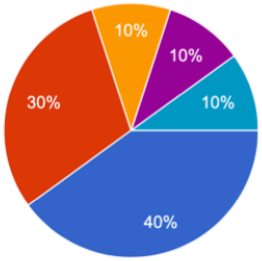
Ensure all activities/proposals for marine resource usage are reviewed through an Environmental Impact Assessment. (9 responses)



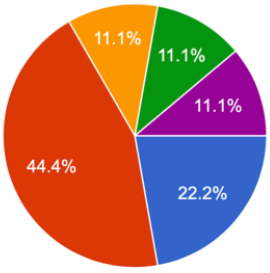
Enhance coastal and maritime tourism (9 responses)



Support maritime infrastructure needs. (10 responses)



Facilitate development of marine renewable energy solutions. (10 responses)



Facilitate development of sustainable and economically viable mariculture. (9 responses)

The BOPP Steering Committee approved for stakeholder consultation the Resource Use goals outlined in the table below. The table also includes the stakeholder feedback received.

Draft Resource Use Goals Stakeholder Feedback
<u>Facilitate sustainable commercial and recreational fisheries</u> **Stakeholder feedback:** • 'Sport" should be added to the text as unclear if this is classed as commercial or recreational. OVSSD • Reword: Ensure Sustainability of Recreational and Commercial Fisheries. OVA • Reword: Facilitate sustainable fisheries through research and development. OVCF
<u>Protect areas of historical, cultural, recreational and societal importance</u> **Stakeholder Feedback:** • Clarity on the definition of 'societal importance' is needed. OVSSD • Clarity on the definition of the word 'protection' is needed. Does "protection" mean exclusion from a place to prevent future impacts or "protection" meaning conservation efforts so that you can continue to visit or use a place? OVUID • Reword: Promote a greater understanding of and protect areas of historical, cultural, recreational, and societal importance'. OVA
<u>Ensure all activities/proposals for marine resource usage are reviewed through an Environmental Impact Assessment</u> **Stakeholder Feedback:** • The types of projects needing EIAs should be defined. Remove the word 'all'. OVSSD • Reword: Ensure all activities/proposals for marine resource usage that might have a material impact on the marine environment are reviewed through an Environmental Impact Assessment. OVRF • Add the words 'historical impact assessment'. Ensure all activities/proposals for marine resource usage are reviewed through an EIA and Historic Impact Assessment. OVPRC • Add: Ensure all activities/proposals for marine resource usage on platform/shallow water and ocean are subject to different EIA. OVCF • The group thought the statement too broad and implied approval would be required for current activities, rather than for future proposals for marine resource use. The group also thought that the term "marine resources" should be comprehensive but that non-living marine resources (e.g. deep sea mining) are never referenced. Perhaps the Resource goal could be re-stated as: Ensure all future activities/proposals for living and non-living marine resource usage are reviewed through an Environmental Impact Statement. OVUID • The group offered the suggestion that a proposal needs to show net-zero environmental impacts. The group also thought that not all marine resource use requests would require an EIA, if a priori information is available to assess the request, with the burden on the proposer to provide the information. It would be helpful to perhaps categorize types of marine resources and indicate where an EIA may not be required versus other resources. OVUID

Enhance coastal and maritime tourism

Stakeholder Feedback:

- Reword: Enhance coastal and maritime tourism and deliver in an environmentally sustainable fashion. OVA
- Reword: Enhance 'sustainable" coastal and maritime tourism. OVRF
- The group thought that perhaps these perspectives should not be combined. "Coastal" tourism" might include large-scale hotel development where "maritime" tourism might refer to paddle-boarding and whale watching. Very divergent goals. OVUID

Support maritime infrastructure needs

Stakeholder Feedback:

- Reword: Support maritime infrastructure needs in consideration of environmental sustainability. OVA
- The group was concerned that the term 'supporting' was too vague and a more dynamic verb such as 'investing' might be clearer about the outcomes desired. OVUID

Facilitate development of marine renewable energy solutions

Stakeholder Feedback:

- The group was concerned that this goal "put the cart before the horse". The progressive development of terrestrial solar capacity, relatively cheap and easy to install, coupled with the growth in battery storage (anticipated with the switch to electric cars) might be sufficient to meet Bermuda's needs. As opposed to the expense and challenges of marine renewable energy (MRE) sources, of which only offshore turbines have a proven track record. The point was made that the IRP requires only that MRE be evaluated for their suitability, not that we should proceed. So a Goal that requires "facilitating" MRE may be premature. OVUID *Note: Practical RA experience, is that there are limited land-based resources available and not developing both land and marine-based solutions simultaneously would substantially jepordise the delivery of the resources.*
- The group did think that floating solar arrays might have a place in our IRP, able to exploit areas of our protected inshore waters, where conflict with other marine resource users could be minimized. OVUID *Note: RA assessment is that floating solar has not demonstrated reasonable security in open ocean for an extended duration. This technology may be a candidate for the proposed regulatory sandbox.*

Facilitate development of sustainable and economically viable mariculture

Stakeholder Feedback:

- Reword: Enable development of environmentally and economically sustainable aquaculture. OVA
- The management of our existing harvestable marine resources should be a priority, rather than the development of large-scale mariculture and possible environmental impacts. OVUID

The BOPP Steering Committee asked stakeholders to draft Resource Use objectives for the draft Resource Use goals. The table also includes the stakeholder feedback received.

Draft Resource Use Objectives Stakeholder Feedback
Facilitate sustainable commercial and recreational fisheries Stakeholder feedback: • Ensure continued access to frequently used fishing grounds on and around the Bermuda platform and outlying banks, as identified in SeaSketch and other relevant data sources, by December 2021. OVRF • Facilitate uninterrupted fishing for pelagic species in depths > 55 m around the edge of the Bermuda platform and the outlying banks while protecting important demersal habitats and species, as outlined in other objectives, by December 2021.OVRF • Increase offshore fishing by 50% and reduce inshore fishing to sustainable levels (figures should be based on best available data). OVSSD • By 2023, obtain sustainability certification for at least one fishery to international standards, for example through the Marine Stewardship Council's Pathways to Sustainability program, or a similar internationally recognized body, and add certification for a fishery every two years (with an emphasis on conservation rather than commercial harvest). • https://www.msc.org/what-we-are-doing/pathway-to-sustainability OVPRC • Restructure recreational, part-time and full-time fishermen into different license classes which have different bag limits: • Develop and implement a tiered fishing license system to regulate how each tier operates. Terms include bag limits, location allowed to fish etc. (Commercial fishermen – least restrictive; P/T fishermen – limited restrictions; Recreational fishermen (including lobster/spear divers) – most restrictive) • Develop an enforcement and compliance plan for fisheries (including a financial strategy) by 2024/2025. OVSSD • Increase monitoring and enforcement of fishing regulations, including usage of police officers and coast guard by end of 2021. OVPRC • A good place to start would be clearly defining what sustainable fisheries means. Traditionally, effective management of fisheries has been plagued by lack of leadership, inadequate fisheries regulations, coordination among stakeholders, failure to follow scientific data and advice, a lack of transparency and traceability and lack of implementation and enforcement. Expanding to solutions, education is cornerstone and ensuring that a plan that involved all stakeholders is at the forefront. Despite what we already know, we need more data and research and promotion of ocean conservation and advocacy. Accurate reporting, monitoring and enforcement have long been issues and with the introduction of the Coast Guard and Marine police there are expectations that, with changes in legislation and the status quo, that those breaking the law will face consequences. OVTBS • Stop illegal sale of fish to the public by recreational fishermen who compete in the market with commercial fishermen (wholesale/retail). OVCF • Create an app covering Bermuda's marine environmental regulations, including species identification, species-specific regulations and georeferenced regulatory areas that would be compatible with GPS enabled smartphones, by the end of 2023, and aim to link this to the reporting platform by the end of 2024. OVRF

- Increase monitoring of local fish catches and locations for commercial and recreational fisheries so that as many catches as practical are recorded in a centralized location by 2025. OVSSD
- Assess all illegal, unregulated and under-reported fishing in Bermuda's EEZ (potentially using satellite technology such as AIS) immediately. OVSSD
- Implement full transparency and traceability of the supply chain to ensure that fish is legally caught by 2022. OVPRC
- Reassess impact of unreported recreational fishing and introduce licensing for recreational fishermen by 2023. OVPRC
- Ensure public access to concise tabulated reports on commercial catches by 2022. OVPRC
- Increase enforcement. OVCF
- Work with fisherman to develop an up-to-date strategic business plans for fishermen by 2022. OVSSD
- Ensure that all fishing tournaments (except those targeting invasive species) reward catch and release as a priority and/or limit the number of fish that may be weighed in time for the 2023 season. OVRF
- Limit well-regulated local longline landed catches in the MEEZ to the minimums required for the maintenance of our ICCAT quota allotments and ensure no foreign commercial fishing. OVSSD
- Reduce limitations on fishing invasive fish species and increase the incentives of selling invasive fish species by 2022. OVSSD
- The failure of conventional fisheries management in many countries is largely the result of inadequate institutions, weak organizations, insufficient participation and coordination, poor enforcement and unclear rights of use. To facilitate and ensure that the BOPP spatial objectives are successful, we strongly recommend that the following non-spatial recommendations are considered and that SMART Objectives are developed by 2022 around these key areas:

  a) Strengthen Fisheries Management and Enforcement

  b) Increase Fisheries Research and Conservation

  c) Develop and Implement an Educational Plan around Key Stakeholders

  We recommend that methods noted in the FAO Fisheries Technical Paper 443: The Ecosystem Approach to Fisheries, S.M Garcia, be strongly considered. In particular the points laid out in Section 8: Operational Objectives and Measures be adopted where applicable and feasibly practical to cover points a. and b. noted above. We also strongly recommend that a robust educational plan is implemented that addresses reasoning and transparency behind decisions that may affect people's livelihood or embedded cultures.

  Appropriate links to the FAO Technical Paper:

  Contents: http://www.fao.org/3/y4773e/y4773e00.htm#Contents

  Section Eight: http://www.fao.org/3/y4773e/y4773e0a.htm#bm10

  OVPRC
- By the end of 2021, agree scientific/data-driven positions for health and sustainability of inshore/nearshore species and habitats that can be used as reference points for status going forward. OVPRC

- By 2022, implement a national education plan for fisheries aimed at, licensed and recreational fishers, the general public and all students with a focus on sustainable fisheries management, habitat degradation, importance of sharks, coral reefs, predatory reef species and any other curriculum points deemed vital by the scientific steering committee and based in international best practices. OVPRC
- By 2023, adopt the recommendations from the Bermuda Reef Resilience Project:
    - Enhance the stocks of groupers by 40% by introducing a further limited ban on the capture and sale of Black groupers during their spawning period (as we currently do with spiny lobster), based on evidence of the timing of their maximum aggregation at spawning sites.
    - Implement bag and size limits on grey snappers, schoolmaster snappers, yellowtail snappers, graysbys and coneys that ensure a year on year increase in stocks to scientifically sustainable levels.
    - Expand our knowledge (in a measurable manner) of juvenile predatory fish habitats, which are generally within the lagoon (patch reefs), along the shore (nearshore), and within enclosed bays (inshore). Many species of offshore reef fish, including predatory fish species, start life by settling as juvenile fish to coastal habitats, only to move offshore as they mature.
    - In a measurable way, reduce coastal development impacts to the marine environment, as many juvenile predatory fishes are found the inshore and nearshore waters first before they move to outer reef areas, for example, by mandating (through planning legislation) that design of any coastal structures be carried out in such a way as to provide additional habitat for juvenile and adult fishes using best information available and measuring results. OVPRC
- By 2022, ensure adequate resources such that the above-mentioned specific goals can be met, providing funding, suitable vessels and human resources (in addition to existing resources). Funding to be provided from both public (for example, part proceeds from recreational fishing licenses) and private sources (for example, from corporate donations).
  OVPRC
- Providing support to the Commercial Fisheries industry to enable it to grow and develop; offer operational financing for reinvestment into the business. OVCF
- Facilitate recreational fisheries through research and development:
    - Implement proposals of CFC sub-committee on recreational fisheries.
    - Regulate catches through better enforcement by imposing limits on licenses and catches which will increase overall supply.
      OVCF

<u>Protect areas of historical, cultural, recreational and societal importance</u>

Stakeholder Feedback:

- Increase and effectively maintain buoyed shipwreck and other reefs sites by quantity 40 as fully protected areas by 2025. OVSSD
- Consider historical site designation for areas that have had heavy historic marine use, such as historic ports and fish ponds. OVPRC *This seems to be asking for some sort of historical recognition, but not protection as an MPA…..clarification is helpful.*
- Maintain 30 protected sites and increase enforcement within those areas and place a moratorium on expanding to further sites. OVCF

- Deliver a public education campaign on the importance of underwater heritage and historical sites by 2022. OVPRC *Potentially covered in RU Goal focused on tourism.*
- Broad and consistent public awareness campaigns are key which includes expanding on our diverse cultural and societal history. There are more stories that need to be told and can recreated through modern and traditional means. Bermudians need to hear and see more Bermudians. OVTBS *Potentially covered in RU Goal focused on tourism.*
- Consider establishing a central committee that can pool all stakeholders along with the BTA that can highlight and recognize the work already ongoing in the space that may be overlooked or may need additional resources for success. OVTBS *Potentially covered in RU Goal focused on tourism.*
- Create and maintain more infographic boards around culturally significant areas around the island by 2022. Residents are more active and out and about and will stop to read and be informed. OVTBS P*otentially covered in RU Goal focused on tourism*

Ensure all activities/proposals for marine resource usage are reviewed through an Environmental Impact Assessment

Stakeholder Feedback:

- Prepare a report on criteria, to supplement existing Planning rules for coastal development, for assessing environmental impacts of proposed marine resource use across the spectrum, from passive recreation to extraction of non-living marine resources, to determine if there are universal criteria, such as net zero impacts, and any activity-specific criteria, by December 2021. OVUID
- Develop a statutory, robust, effective, publicly transparent and practical marine legal framework (including legal documents, policies as detailed in an MSP and modification of associated guidance notes such as the current GN106) to incorporate an EIA procedure for certain activities/developments by 2022. Require engaged public input to the EIA scoping process and the draft EIS report. Associated enforcement should be transparent and done by professional staff with stakeholder oversight. OVSSD
- Establish who is best suited to conduct EIA's and by 2024 and create a better framework so that the recommendations cannot be easily overruled by Government. OVTBS
- All proposals include 3rd party (non-governmental) EIA before submission. Also set up an advisory review board made up of public members to vet proposals (including EIA) for marine resource usage. They would have right to order an additional EIA if not satisfied. I1
- To utilize knowledge and experience of the commercial fishing industry to determine the data which will inform the EIA. OVCF
- Statute guidelines will include that generally 10-15% of marine projects' budgets are to be devoted to EIA to be effective when EIA is required, as in other jurisdictions. OVSSD
- By 2023, reduce the ability of a Minister to ignore results of EIA via an SDO by requiring more hurdles for ministerial pre-emption.eg. independent panel set up to review; more stringent requirements that have to be met for an SDO to be granted. OVPRC *The SDO protocols and procedures were revised in 2012 to accommodate previous concerns.*

Enhance coastal and maritime tourism

Stakeholder Feedback:

- Protect certain thriving coral reef systems surrounding the island for the sole purpose of tourism by 2022. OVPRC
- This suggested objective responds to the following feedback provided by stakeholders:
- Selection of a few, specific areas for (low impact) tourism enhancement, with goal of directing tourism to these areas and away from sensitive areas. I1
- Reduce the amount of yellow tape that marine focused operators need to push through to be in business OVTBS
- Establish better cohesion between the BTA and maritime tourism operators OVTBS
- Improve education for boat usage/navigation for certain boating activities (e.g., jet ski guides) by 2026. OVSSD
- Implement a dedicated marine activities website by 2022. OVPRC
- Promote environmentally friendly products and practices in the marine environment by 2022 e.g., plastic-free alternatives, educating divers on best practices etc. OVPRC
- Promote year-round monthly coastal clean-ups for locals and visitors by 2021. OVPRC
- Development a strategic business plan for blue tourism by 2027. OVSSD
- Promote and incentivize eco-tourism and eco-friendly activities by 2022 OVTBS
- Develop a report on possible aerial sightseeing platforms (sea planes, electric drones, dirigibles, Virtual Reality) which may be located (under lease arrangements) on under-used Government-owned islands such as Darrell's Island and White's Island or brown-field sites like 9 Beaches, by September 2021. OVUID
- Create a BOPP tourism marine park with a tourist park fee to enter the park by 2022. OVSSD
- Assess existing eco-tourism products and carrying capacity by 2021. OVPRC
- Promote and incentivize eco-tourism and eco-friendly activities by 2022 OVTBS
- Consider the creation of an underwater sculpture park by 2023 OVTBS
- Maintain existing activity. OVCF
- Re-Investigate alternatives to swing moorings by 2024 OVTBS *Potentially covered by RU Goal focused on maritime infrastructure*
- Update the Marine Pilots Licensing process by 2023 OVTBS
- Figure out how best to deal with sunken or partially sunken boats by 2023 OVTBS

Support maritime infrastructure needs

Stakeholder Feedback:

- Boat mooring systems to replace swinging moorings and gain net environmental benefits. Assess the feasibility of using modern swinging mooring systems for boats by reviewing their use and success in other jurisdictions, by June 2021. OVUID
- Assemble a report on possible alternative swinging boat mooring systems and submit to Marine and Ports and local marine insurers for review, by July 2021. OVUID
- Identify areas of high environmental sensitivity, which are popular with recreational boaters, where public-use moorings could be installed to reduce anchor impacts and submit to Marine and Ports and the Marine Resource Board, by August 2021. OVUID

- Prepare a proposal to the Stempel Foundation to fund 12 public-use moorings for recreational boaters, using a proposed alternative method suitable for non-storm conditions, by August 2021. OVUID
- Restrict the placement of new moorings in 80% of environmentally sensitive areas by 2023. OVSSD
- Install a minimum of 30 eco-friendly free public-use moorings in high-use environmentally sensitive areas (e.g., Kings Point, Somerset Long Bay to Cambridge Beaches, Nonsuch, Coopers Island, Mangrove Bay) that are popular with swimmers, snorkelers and divers by 2023, then increase by 10 every two years until 2030. Maintenance and installation to be funded by a fee paid by Bermuda boat owners (e.g., current registration fees). OVSSD
- Create a feasibility report and time plan for the gradual changeover of eco-friendly swing mooring to eco moorings by eliminating ground chain by 2024. OVSSD
- Produce an updated public document detailing location and access (e.g., public-use moorings, weather considerations) to key swim/dive/snorkel sites by 2022. OVSSD
- Prepare a report that assesses potential sea level rise and other climate change impacts (rising temperatures, storm frequency and precipitation) on the airport, bridges, causeways, commercial wharves, ferry docks, fuel docks, boatyards, BELCO power station, beaches, updating and expanding on the Smith Warner (2004) and National Trust (2008) reports, in conjunction with Dept. of Works and Engineering, by Dec. 2021. OVUID
- Prepare a report to assess possible locations for future marina development, with particular focus on access from Bermuda Government land, Parish council (e.g., Stock's Harbour, Jew's Bay, Mill Creek) where a public marina could be developed, by August 2021. OVUID
- Prepare a report to assess possible land-based boat storage locations, and as an alternate to replace the need for storm moorings for marina-based vessels, with particular focus on Government land which could be leased for use, by August 2021. OVUID
- Reassess maritime infrastructure and marine construction rules and regulations to ensure minimal impact to the ecosystem taking into account experience and expertise of contractors and facilitate follow up and monitoring of areas where assessments were done to record outcomes. OVTBS *Potentially covered by RU Goal focused on EIA.*
- Review marine construction regulations and strengthen, if necessary, to minimize environmental impact by 2022. OVPRC *Potentially covered by RU Goal focused on EIA.*
- Develop a better maintenance program for channel markers. OVCF
- Ensure that public dumpster services (including for residential waste) are available in 100% of high-use coastal areas (e.g., docks, beaches) by 2023 by increasing the number of dumpsters and the frequency of servicing. OVSSD
- Prepare a report into suitable locations and best practices for commercial submarine cable corridors in the EEZ by 2023. OVSSD
- Reserve a percentage of the EEZ for commercial access pending scientific and commercial exploration of the locations, the nature of important economic resources and potential environmental impacts. OVSSD
- Implement reliable ice-making facility. OVCF *Potentially covered in RU Goal focused on fishing.*
- • Increase joint enforcement powers of coast guard and fisheries wardens. OVCF *Potentially covered in FG focused on enforcement*

Facilitate development of marine renewable energy solutions

Stakeholder Feedback:

- Prepare a report on protected areas (bays, sounds, natural ponds, detention ponds) where floating solar arrays may have the least conflict with other water resource users, by August 2021. OVUID
- Bermuda's Regulatory Authority, with the support of the Department of Planning, DENR, the Department of Energy, and other relevant entities, leads the develop of a licensing / application process, in conjunction with an EIA, to help determine which ocean renewable energy technologies and/or projects are approved for deployment in Bermuda by 2023. OVPRC
- Develop a report on guiding proposed new energy technologies through the Integrated Resource Plan review process, by August 2021. OVUID *Note: This has been completed. Applicants should follow the RA's Bulk Generation Procurement Rules found here.*
- Determine the potential impacts associated with the development of marine renewable technologies and put policies in place to ensure that any negative environmental impacts are minimized, and positive impacts are leveraged. OVPRC *Note: This is included in the RA's Bulk Generation Procurement Rules*
- Eliminate any outstanding Tariffs for any components of renewable projects by 2022. OVSSD
- A minimum of 20% of Bermuda's energy to be supplied by marine renewables by 2035. OVSSD *This is dictated by the IRP.*
- Determine the requirements for safeguarding any proposed renewable energy infrastructure and maximize the use of these areas to increase the total protected areas in our EEZ. OVPRC Infrastructure safeguards would be a contract clause with the developer.
- Enable private and public resources to create professional commercial evaluation reports of offshore wind, wave and/or other large-scale renewable energy solutions with EIA in appropriate low environmental impact locations by 2022. OVSSD
- Bermuda's Regulatory Authority prepare a report to assess transmission challenges for marine renewable energy solutions, based on existing installations in other jurisdictions, by December 2022. OVUID *Note: This can only be accurately done after:*
    i) the resources are identified and
    ii) the siting is confirmed.
- Speak with current and potential stakeholders to determine the prospects associated with marine renewable energy solutions in Bermuda. Also determine what would be required to integrate these solutions into our current energy grid by 2021. OVPRC
- Bring together all interested stakeholders to discuss what present and future renewable energy solutions are feasible and viable for Bermuda. OVTBS
- CFC to be consulted regarding any marine renewable energy options to provide input on placement/source of renewable energy solutions. OVCF

- Ensure that comprehensive feasibility studies are conducted by industry professionals to identify the areas most appropriate (inclusive of environmental and aesthetic considerations) for various renewable energy technologies by 2024. OVPRC (already req by developer)
- Prepare a report on the criteria needed to assess environmental impacts of marine wind turbine systems, based on existing installations in other jurisdictions, by Dec., 2021. OVUID (would be done by dev)
- Prepare a report on the floating solar arrays installed in other jurisdictions, in terms of potential environmental impacts and storm endurance capabilities, by August 2021. OVUID (would be done by dev)
- Prepare a report on salt water air conditioning (SWAC) systems installed in other jurisdictions, in terms of potential environmental impacts (especially warm water discharge) and storm endurance capabilities, by August 2021. OVUID (would be done by dev)
- Prepare a report on underwater compressed air energy storage (UCAES) systems installed in other jurisdictions, in terms of potential environmental impacts and storm endurance capabilities, by August 2021. OVUID (would be done by dev)

<u>Facilitate development of sustainable and economically viable mariculture</u>

Stakeholder Feedback:

- This is a risky endeavour; however: Conduct viability analysis of seaweed farming. I1
- Revise the feasibility report of the economic and ecological viability of mariculture in Harrington Sound and other locations, with potential problems adequately evaluated, by 2024. OVSSD
- Designate appropriate portions (15%) of Harrington Sound for shellfish mariculture for the purposes of habitat restoration of this multispecies fishery and production of locally marketable produce by 2022. OVSSD
- Enable the operations of mariculture and habitat restoration in Harrington Sound by 2027. OVSSD
- Research viability of mariculture in Bermuda and present results by 2022.
- If viable, identify potential mariculture species by 2023.
- If viable, identify potential locations for mariculture by 2023.
  OVPRC
- Recognizing attempts at mariculture in the past have not been successful or brought to scale, it is important to reassess modern advancements and determine if mariculture is economically and environmentally viable in Bermuda by 2023. OVTBS
- Prepare a 5-year adaptive multiannual aquaculture plan, accessible to the general public, and which includes actionable items, enabling commercial scale development and investment and an evidence-based evaluation of potential aquaculture sites. OVA
- *Below are stakeholder suggestions that propose element to include a mariculture strategy or legislation. This feedback should be provided to the drafters for consideration:*
    - Designate 4 different site types: X deep water sites, X inshore water sites, X sandy bottom sites, and X coastal and suitable land-based sites within X year of launching the Blue Economy Strategy.
    - Note: Initial identification of sites is based on evidence; final designation follows demonstration of small scale aquaculture operation at site.
      OVA

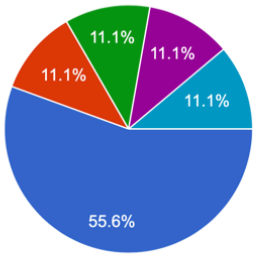
    - Legislate an 'Aquaculture Act', with regulations based on Best Practice Guidelines as per FAO's Code of Conduct for Responsible Fisheries by 2022
    - Note: This will enable policy, legal, regulatory framework and a one stop shop permitting system
    - OVA
    - Establish and implement a 'Bermuda Aquaculture Centre' by 2025, resulting in a functional aquaculture operation for the purpose of vocational training, business management, stock enhancement, and proof of concept demonstration.
    - OVA
    - Provide funding for research to raise mariculture farms. OVCF
    - Form a partnership between local scientists and fishermen to create a program that is commercially viable. OVCF
    - Encourage investments by implementing key enabling mechanisms identified in the multiannual plan (Objective 2) and achieving Objective 5 OVA
- Aquaculture sector will contribute X% to Bermuda's GDP by 2030.
  OVA
- Create a pilot program that places an emphasis on protected species to enhance stocks through farming local species by providing incentives through seed money. OVCF
- Establish aquaculture as a national priority by 2021.
  OVA

C. Stakeholder Feedback: Foundational Goals and Objectives

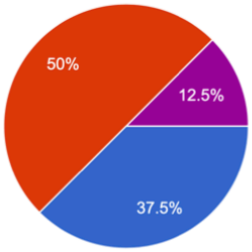
DRAFT Foundational Goals

Respondents were asked to rank the draft Foundational Goals as very important, important, moderately important, or not important.

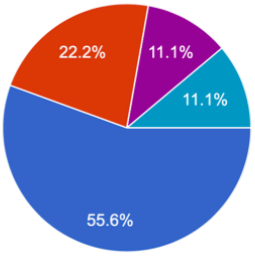
Note that some respondents included additional answers to the multiple choice including "not really sure", "Uhuh", "yes", and "no renewable energy".



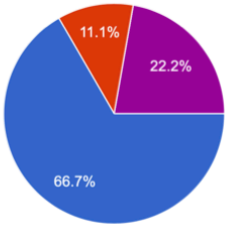
Protect biological diversity, productivity, and ecological function across all habitat types. (9 responses)



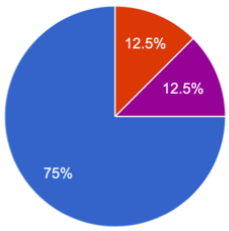
Improve water quality and reduce ocean pollution. (9 responses)



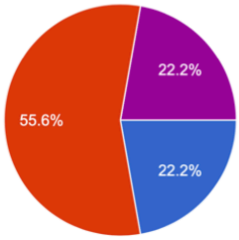
Facilitate reproductive success of marine species through protection and restoration of important nursery grounds, spawning sites, and migratory routes. (9 responses)



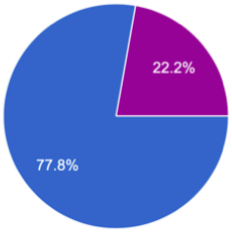
Restore degraded and vulnerable habitats. (9 responses)



Preserve unique, rare, and/or threatened species and habitats. (8 responses)



Promote scientific and technological research. (9 responses)



Educate the public about importance of marine environment. (9 responses)

Draft Foundational Goals and Objectives	Stakeholder Feedback
New Foundational Goal from Stakeholders: Ensure adequate resources for necessary enforcement of marine environmental legislation and promote compliance through education and outreach. OVRF and OVPRC New Objectives: Conduct a baseline survey of public perceptions regarding the enforcement of marine environmental regulations by the end of 2021 and improve perceptions of effectiveness to an average of 'satisfactory' or equivalent by the end of 2023. Design an effective public education campaign to raise awareness about important marine environmental regulations by December 2022 and roll out the campaign by December 2023. Plan to conduct outreach campaigns on any new regulations within 6 months of implementation. Investigate Bermuda-specific alternate sources and mechanisms for improved funding of marine resources management and enforcement and report on this by December 2022. Monitor and evaluate emerging technologies for marine enforcement, and plan to incorporate suitable technologies into Bermuda's Marine Enforcement Strategy as soon as resources allow.	The group felt that it might be possible to amalgamate some of the Foundational Goals, in that the aims of goal 2 (focusing on reproductive success) could be covered by goal 1, and the aims of goal 3 (focusing on habitat restoration) could be covered by goal 4. However, goals 3 and 4 both had numerous objectives that might become unwieldy if the goals were merged. Much of the group discussion focused on the need for better enforcement of existing legislation, hence our suggestion for a new Foundational Goal to address this. OVRF

Draft Foundational Goals and Objectives	Stakeholder Feedback
Goal #1: Protect biological diversity, productivity, and ecological function across all habitat types. Objectives: Designate a minimum of 20% of the Bermuda EEZ as fully protected / no-take areas, ensuring representative coverage of each key habitat type (20%) and higher coverage of critical habitats as specified in other objectives, by DATE. Implement regulations on transitory commercial maritime traffic to reduce vessel speeds by XX% within Bermuda's EEZ by DATE	Designate a minimum of 20% of the Bermuda EEZ as fully protected/ no-take areas, ensuring representative coverage of each key habitat type (20%) and higher coverage of critical habitats as specified in other objectives, by 2022. OVSSD Designate 60% of the offshore area as fully protected/no-take areas. Precis - There are varying degrees to which nations have opted to protect their EEZ. On the one extreme, Pitcairn's marine reserve encompasses 99% of their EEZ. Barbuda's Blue Halo has committed to protect 33% of their marine area. The Waitt Institute advocates for at least 30% of the world's oceans to be 'strongly protected' (i.e. no commercial extraction). Bermuda can play an important role in this. The BOPP Conservation Village Group proposes increasing the 20% minimum area of protection to 60% of our EEZ as a no-take zone – meaning that all methods of fishing and extraction of natural materials, dumping, dredging or construction activities would be prohibited, and from which the removal of any resources, living or dead would be prohibited. OVPRC Designate 40% of the inshore area of the Bermuda EEZ as fully protected/no-take areas. Precis – Local studies have shown that our inshore waters are under extreme pressure and have been heavily exploited. As this is the area most used by residents, the long-term sustainability of our nearshore waters should be of paramount importance. Protecting the outer-most reaches of our EEZ is beneficial, but we need to focus on nearshore rejuvenation of marine eco-systems and species and the on-going conservation thereof.

Draft Foundational Goals and Objectives	Stakeholder Feedback
	The BOPP Conservation Village Group proposes that this 40% inshore waters protection should be on a Representative Areas Program basis (as contemplated in the Bermuda Government document entitled 'A Strategy for the Sustainable Use of Bermuda's Living Marine Resources'), akin to that on the Great Barrier Reef, whereby 40% of each inshore key habitat is protected, with greater protection (i.e. a higher percentage of protected area) for areas that are considered vulnerable, exploited, rare and or spatially limited. *'inshore waters' means from shore to the 2,000m curve and includes Challenger and Argus Banks. OVPRC Implement regulations on transitory commercial maritime traffic to reduce vessel speeds by XX% within Bermuda's EEZ and set maximum speed limits by 2022. OVSSD Suggested New Objectives: NEW OBJECTIVE: Increase ties with relevant international programmes (e.g. EU Blue Parks) to consider Bermuda's EEZ in the context of the wider oceanic environment by 2022. (Ranking: Important) OVSSD NEW OBJECTIVE: Develop a plan to monitor and enforce all maritime zones effectively by providing the human and capital resources required for marine resources by 2022, and implement by 2025. (Ranking: Very important) OVSSD ……reduce vessel speeds to 15kts within Bermuda's EEZ OVPRC

Draft Foundational Goals and Objectives	Stakeholder Feedback
Goal #2: Facilitate reproductive success of marine species through protection and restoration of important nursery grounds, spawning sites, and migratory routes. Objectives: Maintain seasonal no-take restrictions at all known 'fish' breeding and/or aggregation sites under the Fisheries (Protected Areas) Order and incorporate any additional sites within one year of discovery. Identify and protect xx% of critical nursery areas by DATE (aim for >30%)	Maintain seasonal no-take … or make permanent OVPRC Maintain seasonal no-take restrictions at all known "fish" breeding and/or aggregation sites under the Fisheries (Protected Areas) Order 2000. OVCF Identify and protect 60% of critical nursery areas by 2023 (aim for >30%) OVSSD Identify and protect 50% of critical nursery areas by 2024 (aim for >30%). OVCF … protect 50% of nursery areas OVPRC Suggested New Objectives: NEW OBJECTIVE: Consider periodic short, closed season events for the purchase/sale of certain species (Example: 1 week a month for Rockfish around the new moon during spawning season) in order to robustly enforce the breeding ground restrictions by 2022. (Ranking: Important) OVSSD
Goal #3: Restore degraded and vulnerable habitats. Objectives: Inventory and assess past, present and potential mangrove habitat areas by DATE, and develop a strategic plan for conservation and restoration of xx% by DATE. Initiate active restoration at XX% of mangrove habitats by DATE. Establish active restoration of areas that were formerly seagrass habitats (>100m2) through turtle exclusion at 8 inshore and 4 offshore sites by DATE.	Inventory and assess past, present and potential mangrove habitat areas by 2023, and develop a strategic plan for conservation and restoration of 55% by 2033, and 100% by 2040. OVSSD ….develop a strategic plan for conservation and restoration of 5% every two years OVPRC Inventory and assess, past, present and potential mangrove habitat areas (excluding commercial Full-time bait fishermen) by 2024 and develop a strategic plan for conservation and restoration of 100% by 2024. (Provide clarification on 'potential mangrove') OVCF Initiate active restoration at 45% of mangrove habitats by 2029 and 100% by 2040. OVSSD

Draft Foundational Goals and Objectives	Stakeholder Feedback
Replace XX% of swinging moorings in existing and former seagrass habitats by DATE. Inventory and assess areas where salt marsh habitat may be allowed to migrate inland or can be restored or created by DATE; protect at least XX of these areas by DATE. Initiate active restoration at XX% of damaged and/or degraded coral habitats by DATE	….active restoration at 5% every two years of mangrove habitats OVPRC Initiate active restoration at 50% of damaged and or degraded coral habitats by 2024. OVCF Establish active restoration of areas that were formerly seagrass habitats (>100m2) through turtle exclusion at 8 inshore and 4 offshore sites by 2023. OVSSD Initiate active restoration of areas that were formerly seagrass habitats through turtle exclusion by 2024. OVCF Replace or upgrade 65% of swinging moorings in all harbours and bays including existing and former seagrass habitats with seagrass-friendly moorings by 2026. OVSSD Replace 15% of swinging moorings....and implement further restrictions on new moorings OVPRC "Replace XX% of swinging moorings in existing and former seagrass habitats with seagrass friendly moorings by DATE." - This is not practical. The suggestion is to remove unregistered moorings and clean coastal areas. OVCF Inventory and assess areas where salt marsh habitat may be allowed to migrate inland, or can be restored or created by 2024; protect as least 50 of these areas by 2025. OVSSD Initiate active restoration of XX% of damaged and/or degraded coral habitats (where damage/degradation is anthropogenic) by 2025. **Please clarify/define what level of damage is acceptable and warrants restoration.** OVSSD Initiate active restoration of xx% of damaged and/or degraded coral habitats in protected areas by DATE (note: lower importance for channels) OVPRC

Draft Foundational Goals and Objectives	Stakeholder Feedback
Goal #4: Preserve unique, rare, and/or threatened species and habitats. Objectives: Establish a strategic management plan for protection of XX% of remaining natural/living rocky intertidal shorelines and beaches from development and climate change impacts by DATE. Restrict types of fishing activities at XX% of mesophotic and deep slope areas of the platform identified based on benthic habitat composition by DATE. Protect XX% of essential/critical habitat used by unique, rare, and/or threatened species named in the Protected Species Act by DATE Protect at least XX% of seamount area in Bermuda's outer EEZ by DATE	Establish a strategic management plan for protection of 65% of remaining natural/living rocky intertidal shorelines and beaches from development and climate change impacts by 2023. OVSSD …..protection of 100% of remaining natural/living rocky intertidal shorelines and beaches (note: protect 100% immediately until plan is in place) OVPRC Restrict types of fishing activities at 20% of mesophotic and deep slope areas of the platform identified based on benthic habitat composition by 2025. **Definition needed for 'fishing activities' and 'benthic habitat composition'** OVSSD Restrict types of fishing activities at 40% of mesophotic…. OVPRC Protect 80% of essential/critical habitat used by unique, rare, and/or threatened species named in the Protected Species Act by 2026. OVSSD Protect 50% of essential/critical habitat…. OVPRC Protect at least 40% of seamount area in Bermuda's outer EEZ by 2026. OVSSD Protect 50% of essential/critical habitat…. OVPRC Suggested New Objectives: NEW OBJECTIVE: Protect all shark species by 2022. (Ranking: Important) OVSSD NEW OBJECTIVE: As marine caves are home to 25% of all endemic and a large number of protected and critically endangered species in Bermuda, rigorously enforce the existing planning policy around caves to include all wet and dry portions of these globally significant habitats by 2022. **Caves are home to a significant portion of endemic and protected species in Bermuda so this habitat class be considered when modelling priority areas for conservation.** OVSSD Institute penalties for boat owners for not raising their sunken vessels out of the water in a timely fashion by 2021. OVPRC

Draft Foundational Goals and Objectives	Stakeholder Feedback
Goal #5: Improve water quality and reduce ocean pollution. Objectives: Map point-source pollution and reduce the concentration of pollutants (sewage related, industrial waste, antifouling paints) by XX% at impacted nearshore areas by DATE. Improve wastewater treatment of the two municipal sewage outfalls to reduce the concentration of sewage related pollutants (suspended solids, fats, oils, and greases) in surrounding waters XX% below current concentrations by DATE.	Map point-source pollution and reduce the concentration of pollutants (sewage related, industrial waste, antifouling paints, fertilizers by better equipping marinas to deal with waste and prohibit off-shore dumping by large vessels) by 40% at impacted nearshore areas by 2025. OVSSD Map point-source pollution and reduce the concentration of pollutants (sewage related, industrial waste) by 30% at impacted nearshore areas by 2030. OVCF Improve wastewater treatment of the two municipal sewage outfalls by adding secondary and tertiary treatment plants to reduce the concentration of sewage related pollutants (suspended solids, fats, oils, and greases) in surrounding waters 60% below current concentrations by 2027. OVSSD Improve wastewater treatment of the two municipal sewage outfalls to reduce the concentration of sewage related pollutants (suspended solids fats, oils and greases) in surrounding waters 30% below current concentrations by 2030. OVCF Improve wastewater treatment of the one* municipal sewage outfalls to reduce the concentration of sewage related pollutants (suspended solids, fats, oils, and greases) in surrounding waters XX% below current concentrations by DATE. *It is noted that the Corporation of St George outfall off Tobacco Bay will be closed in-lieu of a wastewater treatment solution to disposal borehole by end of summer 2021. OVWW Marine Protected Areas (MPAs) should be placed at least 750 m or greater, depending on local oceanographic conditions, from sewage outfalls. Sites to be considered for mariculture to have greater setback distances. OVWW

Draft Foundational Goals and Objectives	Stakeholder Feedback
	Increase policing of the Water Resources (Sewage Pollution from Boats) Regulations 2018 to ensure that bathing water quality is not compromised at popular boating areas. OVWW Gather data to determine whether the mutagenic responses observed in native pond species, as a result of exposure to PAH pollutants from vehicle emissions road run-off, also occur in certain near-shore marine environments that are also exposed to stormwater run-off from busy roads. Result will help to determine whether some direct discharge road drains need to be redeveloped to pass to a sediment soakaway. OVWW Gather data on nutrient seepage from ground water into the nearshore environment with respect to the future risk of increased algal growth/ blooms. OVWW Ensure continued and improved collaboration between appropriate authorities to ensure that developments in the marine environment are supported by the appropriate infrastructure on land and reflected in terrestrial development plans. OVWW Suggested New Objectives: NEW OBJECTIVE: Aim for 50% of new tourist vessels, marinas and coastal hotels to have reduced carbon emissions by 2030, providing there is adequate cost-benefit gain. (Ranking: Moderately Important) OVSSD NEW OBJECTIVE: Reduce local plastic pollution to zero by 2026. (Ranking: Very Important) OVSSD NEW OBJECTIVE: Plan, fund and start building a comprehensive sewerage system for Bermuda by 2025. (Ranking: Important) OVSSD NEW OBJECTIVE: Reduce noise and water pollution by phasing out 2-stroke engines for 4-stroke engines by 2030. OVSSD Ban single use plastics by 2021 – very important OVPRC Monitor marinas for fuel and oil leaks OVPRC Assess bays and marinas on an on-going basis for sunken marine vessels and floating vessels that may be leaking fuel or oil especially after high winds. OVTBS

Draft Foundational Goals and Objectives	Stakeholder Feedback
Goal #6: Promote scientific and technological research. Objectives: Develop legislation that establishes a clear and straightforward license process for research activities by local and visiting scientists by DATE. Create an intersectoral working group to identify key areas of research and develop strategies to increase activity by XX%	Develop legislation that establishes an efficient and effective license process for research activities by local and visiting scientists by 2023. OVSSD Develop legislation that establishes a clear and straightforward license process for research activities by local and visiting scientists by 2020. OVCF Create an intersectoral working group to identify key areas of research and develop strategies to increase activity by 100%. OVCF Expand upon DENR, BZS and BIOS combined coordination of human and funding resources to create an intersectional working group to identify key areas of research and develop strategies to increase activity by 160% by 2022. OVSSD
Goal #7: Educate the public about the importance of the marine environment. Objectives: Deliver XX public outreach campaigns by DATE. Deliver XX educational curriculum products relative to conservation and MSP to be distributed to local schools by DATE	Reword: Deliver outreach campaign/s to connect with 100% of Bermudians by 2022. OVSSD Reword: include 'other key partners' OVPRC Deliver 12 public outreach campaigns by 2020. OVCF Deliver 3 educational curriculum products relative to conservation and MSP to be distributed to local schools and NGOs by 2022-2023. OVSSD Deliver 12 educational curriculum products relative to conservation and MSP to be distributed to local schools by 2024. OVCF