



Legal Context for Nearshore Marine Spatial Planning in Bermuda

ENVIRONMENTAL LAW INSTITUTE

MAY 2016

Acknowledgments

This report was prepared by the Environmental Law Institute (ELI) for the Bermuda Institute of Ocean Sciences (BIOS). The authors were Read D. Porter, David Roche, Kathryn Mengerink, and Bruce Myers. The authors wish to express their gratitude to the Government of Bermuda, the marine management community, and BIOS, who provided ELI with information necessary to complete this assessment. Any errors are the responsibility of ELI.

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Abbreviations

BELCO	Bermuda Electric Light Company
BIOS	Bermuda Institute of Ocean Sciences
BPS	Bermuda Police Service
CFC	Commercial Fisheries Council
CMP	Conservation Management Plan
DAB	Development Applications Board
DCS	Department of Conservation Services
DENR	Department of Environment and Natural Services
DEP	Department of Environmental Protection
EEZ	Exclusive economic zone
EIA	Environmental impact assessment
EIS	Environmental impact statement
ELI	Environmental Law Institute
FCO	United Kingdom Foreign and Commonwealth Office
HSE	Ministry of Health, Seniors, and the Environment
MEHS	Marine Enhancement Structure
MRB	Marine Resources Board
MSP	Marine spatial planning
SDO	Special development order



WEDCO West End Development Corporation



Executive Summary

Bermuda’s nearshore marine environment is a critical economic, environmental, and social resource for the Bermudian people. It supports a wide array of personal, public, and commercial uses, from swimming to undersea cabling, which may conflict but which must be accommodated, both now and in the future. As these diverse activities expand and intensify, Bermuda should manage them as a whole rather than on a piecemeal basis.

Bermuda can more effectively manage the uses of its marine environment by undertaking marine spatial planning for its nearshore waters. Marine spatial planning, or “MSP,” is a public process that organizes human activity in marine areas in time and space to meet environmental, economic, and social objectives. By creating a MSP process, the Bermuda government can create a foundation for sound, forward-looking ocean management that ensures the long-term health and stability of the marine ecosystem while supporting Bermuda’s blue economy and providing for its people.

This report seeks to support the development of a strong and effective MSP process in Bermuda by providing a thorough evaluation of the legal and institutional context governing Bermuda’s marine environment and identifying the legal building blocks needed to place a MSP process on a secure and sustainable footing. This evaluation therefore provides a foundation for understanding:

- how MSP may intersect with current law governing activities in the ocean,
- how those laws are deployed in practice to direct where and when particular activities can occur; and
- what legislation is needed to effectively implement an effective MSP process in Bermuda.

This report reviews the legal authorities and processes governing ocean activities related to particular uses and activities that are occurring or may occur in Bermuda’s nearshore marine environment. Uses and activities considered in this report, the applicable laws, and relevant institutions are listed in Table 1.

Table 1. Ocean uses, laws, and responsible institutions.

Use	Applicable Law(s)	Responsible institution(s)
Commercial fishing	<ul style="list-style-type: none"> • Fisheries Act 1972 • Protected Species Act 2003 	<ul style="list-style-type: none"> • Department of Environmental Protection • Commercial Fisheries Council • Marine Resources Board
Recreational fishing	<ul style="list-style-type: none"> • Fisheries Act 1972 • Marine Board Act 1962 • Protected Species Act 2003 	<ul style="list-style-type: none"> • Department of Environmental Protection • Ministry of Tourism Development and Transport
Aquaculture	<ul style="list-style-type: none"> • Fisheries Act 1972 • Public Lands Act 1984 	<ul style="list-style-type: none"> • Department of Environmental Protection • Commercial Fisheries Council



		<ul style="list-style-type: none"> • Marine Resources Board • Department of Works and Engineering
Recreational boating	<ul style="list-style-type: none"> • Marine Board Act 1962 • Protected Species Act 2003 	<ul style="list-style-type: none"> • Department of Marine and Ports Services
Recreational swimming	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Department of Environmental Protection
Diving and snorkelling	<ul style="list-style-type: none"> • Marine Board Act 1962 • Merchant Shipping Act 2002 • Historic Wrecks Act 1962 	<ul style="list-style-type: none"> • Department of Marine and Ports Services • Department of Conservation Services (Custodian of Historic Wrecks) • Historic Wrecks Authority
Cultural heritage	<ul style="list-style-type: none"> • Historic Wrecks Act 1962 	<ul style="list-style-type: none"> • Historic Wrecks Authority • Department of Conservation Services (Custodian of Historic Wrecks)
Utilities	<ul style="list-style-type: none"> • Clean Air Act 1991 • Development and Planning Act 1974 • Water Resources Act 1975 • Liquefied Petroleum Gases (Handling, Storage, Supply & Transport) Regulations 1988 • Telecommunications Act 1986 	<ul style="list-style-type: none"> • Department of Environmental Protection • Environmental Authority • Department of Planning • Department of Marine and Ports Services • Development Applications Board • Department of Telecommunications
Passenger and cargo transport	<ul style="list-style-type: none"> • Marine Board Act 1962 • Merchant Shipping Act 2002 • Passenger Ships Act 1972 	<ul style="list-style-type: none"> • Department of Marine and Ports Services • Ports Authority
Conservation	<ul style="list-style-type: none"> • Fisheries Act 1972 • Protected Species Act 2003 • National Parks Act 1986 • Bermuda National Trust Act 1969 • Coral Reef Preserve Act 1969 • Protection of Birds Act 1975 • Development and Planning Act 1974 	<ul style="list-style-type: none"> • Department of Environmental Protection • Department of Conservation Services • Department of Parks • Bermuda National Trust • Department of Planning • Development Applications Board
Energy	<ul style="list-style-type: none"> • Clean Air Act 1991 • Development and Planning Act 1974 • Telecommunications Act 1986 • Water Resources Act 1975 	<ul style="list-style-type: none"> • Department of Environmental Protection • Environmental Authority • Department of Planning • Development Applications Board



Runoff, Sewage, and Water Pollution	<ul style="list-style-type: none"> • Marine Board Act 1962 • Merchant Shipping Act 2002 • Waste and Litter Control Act 1987 • Water Resources Act of 1975 • Development and Planning Act 1974 • Clean Air Act 1991 	<ul style="list-style-type: none"> • Department of Marine and Ports Services • Ports Authority • Department of Works and Engineering • Department of Conservation Services • Department of Environmental Protection • Department of Planning • Development Applications Board
Maritime security and law enforcement	<ul style="list-style-type: none"> • Bermuda Constitution • Police Act 1974 • Marine Offenses Procedure Act 2006 • Merchant Shipping Act 2002 • Marine Board Act 1962 	<ul style="list-style-type: none"> • Bermuda Regiment • Bermuda Police • Authorized officers under various Acts
Scientific research and education	<ul style="list-style-type: none"> • Fisheries Act 1972 • National Parks Act 1986 • Historic Wrecks Act 2001 • Merchant Shipping Act 2002 • Protected Species Act 2003 	<ul style="list-style-type: none"> • Department of Environmental Protection • Commercial Fisheries Council • Department of Conservation Services • Historic Wrecks Authority • Department of Parks
Mining	<ul style="list-style-type: none"> • Public Lands Act 1984 • Merchant Shipping Act 2002 • Marine Board Act 1962 • Protected Species Act 2003 • Fisheries Act 1972 • UK Environment Protection (Overseas Territories) Order 1988 	<ul style="list-style-type: none"> • Department of Works and Engineering • Department of Public Lands • Department of Marine and Ports Services • Department of Conservation Services • Department of Environmental Protection

Specific activities and uses are governed different sets of laws, regulations, and policies. In addition, they are subject to overarching legal authorities and processes that apply across categories. These overarching provisions notably include the Development and Planning Act 1974, which creates planning permission and environmental assessment requirements for development (Figure 3); property ownership requirements for occupation of marine areas of the sea surface and water column, as well as the seabed, subsoil, and foreshore; law enforcement; and public financing. These issues are reviewed in addition to the specific legal and institutional context governing individual activities and uses.

1 Introduction

This report evaluates the legal and institutional context for a nearshore marine spatial planning (MSP) process in Bermuda. It is intended to support the Government of Bermuda and interested stakeholders during the development and implementation of that MSP process. This report recognizes that legal authority for a MSP process and implementation of any resulting plan should build from the existing legal system; take direction from local conditions and tradition; be pragmatic and achievable in recognition of capacity and funding limitations; and provide effective incentives and requirements to ensure compliance and long-term sustainability of ocean resources.

To this end, the report provides a strong foundation for understanding the current legal authorities relevant to MSP in Bermuda and their implementation. Based on this review, it provides options for legislative action needed to advance an MSP process in Bermuda. These policy options may assist Bermuda in efficiently and effectively resolving uncertainty in application of laws in the nearshore environment and in developing and implementing a transparent and useful MSP process that works in practice both now and in years to come.

This report is based on independent research conducted by the Environmental Law Institute (ELI) on behalf of the Bermuda Institute of Ocean Sciences (BIOS). This research included independent review of laws, regulations, and policies in force in Bermuda, as well as reports and other relevant documents. In addition, ELI staff conducted in-depth interviews with representatives from relevant Bermuda government agencies. Based on this research, ELI produced a draft report and provided it to governance experts for review and comment. The final report reflects modifications based on this review process.¹

1.1 Potential for MSP in Bermuda's nearshore waters

Bermuda's nearshore waters are subject to a wide range of uses and activities. Expansion in the types of uses and activities under consideration, and intensification of activity over time, are heightening competition for limited space and resources. Discussions with government officials suggest multiple and varied drivers for pursuing effective MSP. For example, there is increasing interest in and activity surrounding alternative energy development (including from offshore wind and wave energy systems), aquaculture, and seabed mining. Fisheries management, commercial and recreational, must be balanced with the needs of conservation and protected areas. Diving, recreational boating, and swimming are also an important part of the mix. In the face of these many existing and emerging uses, confusion persists as to which laws take precedence.

Conflicts among uses and activities can threaten not only Bermuda's marine environment, but also its economy and cultural heritage, leading government and private stakeholders to begin considering the potential to undertake MSP to help manage the nearshore environment. Successful Bermuda nearshore

¹ This report is provided for informational and educational purposes only and does not constitute legal advice. It is intended, but not promised or guaranteed, to be current, complete, and up-to-date. Transmission of this report is not intended to create, and the receipt does not constitute, an attorney-client relationship between the Environmental Law Institute and any other entity.



MSP could promote ocean ecosystem health, identify opportunities for marine development, address potential conflicts among marine uses, and assess the cumulative impact of such uses on the ocean environment. Moreover, sound MSP can contribute to job creation, tourism, and foreign investment. To achieve these goals, a participatory process would be needed to set objectives, gather input, generate options, and draft a Marine Plan. To address the most pressing needs, such a process would naturally focus on the most heavily used areas of Bermuda's reef platform (known as the Bermuda Platform), edge, and nearby banks. For this reason, this legal assessment focuses on management of activities and uses that fall within a depth contour of 2000m (Figure 1).

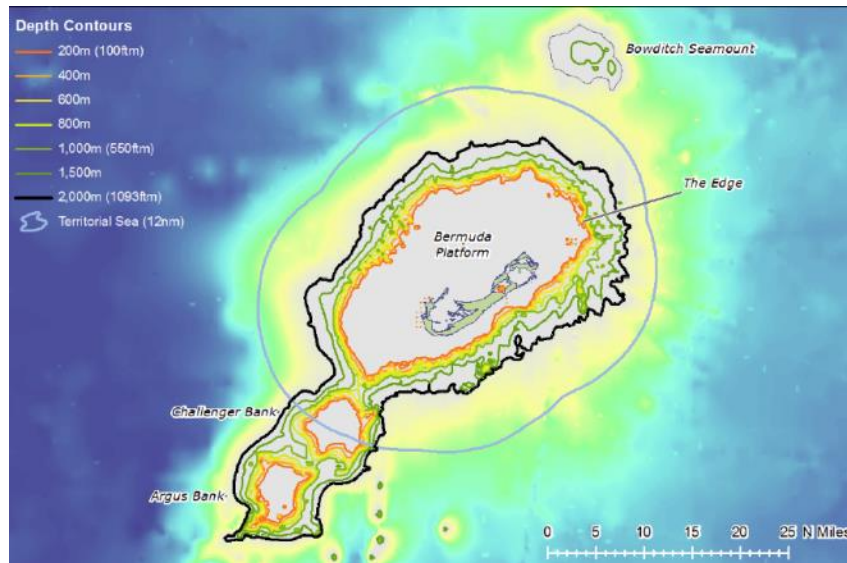


Figure 1. Potential 2000m boundary (in black) for marine spatial planning.

Successful implementation of a MSP process in Bermuda will require some changes to the legal framework in order to resolve uncertainties in existing law, to ensure that the process is transparent, repeatable, and effective, and to ensure that the resulting Marine Plan can be implemented once it is created. There are three key potential law and policy paths forward to achieve these goals:

1. A central piece of legislation that replaces and co-opts the functions of several pieces of existing marine legislation, similar to the UK's Coastal Access Act 2009.
2. A central piece of umbrella legislation that sets the powers of a Minister to create a marine policy statement and plan. Such an approach could provide a framework for other legislative amendments that may be desirable.
3. A marine policy statement with no legislative basis, followed by targeted amendments to existing legislation and regulation, as appropriate.

The first of these options would require an intensive drafting process and would result in a substantial change to the existing legal framework, while a policy statement without explicit legislative direction would be challenging to implement, particularly where unaffiliated ministries and departments would need to cooperate for successful implementation. As a result, ELI identifies the second option as the most promising.



This report does not include a detailed background on MSP or on existing or anticipated uses of Bermuda's nearshore marine environment. Nor does the report advocate for any particular environmental outcome, or set of outcomes. Rather, the focus is on identifying the tools available to Bermuda in establishing a robust and practical process for achieving its desired outcomes. The report presents a legislative review of the uses and activities of concern in Bermuda's nearshore marine environment with potential applicability to a MSP process. Ultimately, the aim is to establish a solid foundation for the legal and policy development needed to implement a nearshore MSP process. This could potentially include new legislation that ties in with and clarifies the application and implementation of existing laws.

1.2 Designing a legally-enforceable marine spatial plan

Marine spatial planning is a public process that organizes human activity in marine areas in time and space in order to meet environmental, economic, and social objectives.² MSP can result in a plan that is purely descriptive or aspirational, but plans are more likely to achieve their goals if they are allied to a regulatory component that locates the basis for the process in the law and provides a legal mechanism for implementation of the resulting plan. This report therefore adopts an assumption that MSP in Bermuda will be regulatory and enforceable and will require legal mechanisms to achieve and implement the plan produced through the process. However, this report does not consider the specific manner in which a marine spatial plan would be implemented, as the implementation approach will necessarily flow from the MSP process.

Designing a legally enforceable marine spatial plan in Bermuda requires a broad yet nuanced understanding of the legal authorities currently governing the marine environment and how the institutions implementing those authorities currently operate. Understanding the legal and institutional context is especially important in Bermuda, which has a large number of complex laws, policies, and institutions that must be integrated and work together productively if MSP is to be successful. Key considerations for MSP in Bermuda include:

- how relevant sector-specific activities (e.g., fisheries, shipping, recreation, aquaculture) are governed, and how governmental bodies interact in carrying out their separate mandates;
- what overarching legal authorities and entities may exist that affect sector-specific authorities or implementation;
- what governmental bodies may have legal authority to carry out MSP and to implement and enforce any resulting plan;
- what existing marine area authorities and designations (e.g., national parks, shipping lanes, etc.) exist for consideration during MSP;

² See Ehler, Charles, and Fanny Douvère. *Marine Spatial Planning: a step-by-step approach toward ecosystem-based management*. Intergovernmental Oceanographic Commission and Man and the Biosphere Programme. IOC Manual and Guides No. 53, ICAM Dossier No. 6, 18. Paris: UNESCO. 2009 (English); and see generally Government of Bermuda, *Making the Case for Marine Spatial Planning in Bermuda: Background Report* (2015) [*hereinafter* *Making the Case for MSP in Bermuda*]. Note that MSP is *not* intended narrowly as a process to zone each and every marine activity.



- how Bermuda law governs collection and use of revenues from ocean users (e.g., licence and permit fees, park entry fees, lease payments, fines for violations of the law, environmental injury funds, and other fees and penalties) and if and how these can be deployed in the context of MSP;
- gaps in legal authority or institutional support for governance of nearshore activities and uses; and
- how public participation and other important process safeguards are currently addressed in law.

This report addresses these issues to serve as a resource that the Bermuda Government and other stakeholders can use as a guide when developing and implementing MSP. In addition, based on this investigation, this report provides considerations for the development of legal authority needed to successfully undertake MSP and to ensure the implementation and enforcement of the resulting plan.³

³ The authors recognize the important and explicit distinction between the planning process itself and the eventual *implementation* of that process.



2 Overview of Bermuda Government

This chapter provides an orientation on the structure and function of Bermuda’s government and will provide the reader with context to understand the subsequent descriptions of the institutional relationships involved in marine governance.

Bermuda is a United Kingdom Overseas Territory with independent authority to develop laws and policies and manage its own resources, subject to limited United Kingdom oversight and reciprocal responsibilities. In practice, Bermuda is self-governing with respect to all services⁴ with limited exceptions—most notably, foreign relations.⁵ In 2001, Bermuda and the UK entered into an Environment Charter agreement setting forth a range of guiding principles and establishing various commitments by each signatory.⁶

Bermuda’s internal government is based on the Bermuda Constitution, which entered into force in 1968.⁷ The Bermuda Constitution protects individual rights and sets out the structure of government, including the relationship to the Crown. The Constitution establishes a bicameral legislature in which the Queen of England is the head of state and is represented in Bermuda by a Governor.⁸ The Legislature is made up of an appointed Senate and an elected House of Assembly.⁹ The Constitution also provides for an independent judiciary¹⁰ and an independent Ombudsman charged with third-party, independent review as prescribed by law.¹¹

As the Queen’s representative in Bermuda, the Governor appoints the executive officers for the Government.¹² These include the Deputy Governor,¹³ Premier, Deputy Premier, Cabinet, Leader of the Opposition,¹⁴ and Ministers.¹⁵ The Governor, with the assistance of a Governor’s Council, is responsible for external affairs, defence, internal security, and the police.¹⁶ The Cabinet advises the Governor with respect to all other issues and is responsible for actions taken under the authority of any minister.¹⁷ The

⁴ UK Foreign and Commonwealth Office, *The Overseas Territories: Security, Success, and Sustainability* 14 (2012), https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/12249/ot-wp-0612.pdf

⁵ *See id.* (discussing roles and responsibilities of UK and Overseas Territories).

⁶ UK Overseas Territories Conservation Forum, *Environment Charter: Bermuda* (2001), at <http://www.ukotcf.org/pdf/charters/bermuda.pdf>. The principles and commitments contained in the Charter are consistent with robust MSP.

⁷ Bermuda Constitution Order 1968, S.I. 1968 No. 182 (UK), as amended, *adopting* Bermuda Constitution Act, 1967, c. 63 (Eng.) [*hereinafter* Bermuda Constitution].

⁸ Bermuda Constitution §§ 17, 26.

⁹ *Id.* at § 26.

¹⁰ *Id.* §§ 73-80.

¹¹ *Id.* § 93A.

¹² *Id.* § 25.

¹³ *Id.* § 18. The deputy governor’s powers and duties include, inter alia, appointment and management of public officers and advising the Governor. *Id.* at § 19A. Appointments of public officers are made in accordance with recommendations from a Public Service Commission. *Id.* at §§ 81, 82.

¹⁴ *Id.* §§ 58, 72.

¹⁵ *Id.* §§ 58, 61.

¹⁶ *Id.* § 70. The Council consists of the Governor, the Premier, and two or three Ministers.

¹⁷ *Id.* §§ 21, 57.



Cabinet consists of the Premier and at least six (currently nine) other Ministers.¹⁸ Each Minister, in turn, oversees several government departments within a Ministry, each of which is headed by a permanent secretary (Figure 2). Ministers may be assisted by “a board, committee or other similar body” with “advisory, consultative and administrative functions.”¹⁹ Where authorized by legislation, Ministers may make subsidiary legislation to further elaborate on legislative mandates. Ministries also issue guidance and other policies that may not be regulatory or otherwise enforceable but that provide insight on how the government will interpret its legislative authority. These policies therefore are important to the practice and implementation of the law.

The Legislature is empanelled after elections, which must occur at least every five years.²⁰ The Legislature enacts bills into law when in session. Bills may be introduced in either house, except that money bills (taxation, grants, and charges on public monies) must originate in the Assembly.²¹ Once introduced, in most cases a bill must be passed by majority vote in both the 11-member Senate and 36-member House of Assembly. While each house adopts its own procedures,²² votes are determined based on the majority of members present.²³ Once both houses consent to a bill, it advances to the Governor for assent.²⁴ A bill becomes a law upon the Governor’s assent. Laws enter into force immediately upon assent unless otherwise provided in the law.²⁵

Bermuda’s judicial system is based on English common law, and cases are decided by judicial officers appointed by the Governor after consultation with the Chief Justice.²⁶ The Attorney General is responsible for representation of the government in civil cases; the Director of Public Prosecutions is responsible for prosecution of criminal offences.²⁷ Bermuda’s judicial system includes four courts of general jurisdiction. The Magistrates’ Court issues warrants and exercises summary jurisdiction in criminal trials and in civil cases for an amount not exceeding \$25,000.²⁸ Most decisions by the Magistrates’ Court can be appealed by right to the Supreme Court.²⁹ The Supreme Court also presides

¹⁸ *Id.* § 57.

¹⁹ *Id.* § 61.

²⁰ *Id.* § 49. The Governor may dissolve the Legislature at any time after consultation with the Premier. *Id.* General elections occur within 3 months after the Assembly is dissolved. *Id.* at § 51. Senators are appointed “as soon as practicable” after the general election. *Id.*

²¹ *Id.* § 36. Money bills—if they will increase taxes or charges—must also be recommended by the Governor, signified by a Minister. *Id.* Non-taxation money bills sent to the Senate at least two months before the end of the session and not passed go to the Governor for assent “notwithstanding that the Senate has not consented to the bill.” *Id.* § 37.

²² *Id.* § 45.

²³ *Id.* § 44. The Speaker of the House may not vote except to break a tie, while the President of the Senate has an original but not a casting vote; motions resulting in a tie in the Senate therefore do not carry. *Id.*

²⁴ *Id.* § 35. A bill may require assent by the Foreign Secretary in certain instances, such as if it affects foreign relations or the Queen’s prerogative. *Id.* § 35. A bill can advance to the Governor and become law without Senate consent if it is passed by the House of Assembly but rejected by the Senate in two successive sessions. *Id.* § 38.

²⁵ *Id.* § 35

²⁶ *Id.* § 73. Laws predating the Constitution remain in force with such modifications as required to conform to constitutional requirements. *Id.* § 5.

²⁷ *Id.* §§ 71, 71A. The Attorney General is appointed by the Governor acting at his or her discretion. *Id.* § 86.

²⁸ Magistrates Act §§ 15-16.

²⁹ Civil Appeals Act § 2; Criminal Appeal Act § 3.



over civil cases involving more than \$25,000 and criminal trials requiring a jury.³⁰ Supreme Court judgments can be appealed to the Court of Appeal, which sits in panels of three judges three times each year.³¹ Some decisions of the Court of Appeal can be appealed to Her Majesty in Council (the “Privy Council”), which is the court of final appeal.³²

³⁰ Magistrates Act § 15. The Supreme Court consists of a Chief Justice and a number of Puisne judges that may be established by law (currently five). Bermuda Constitution § 73.

³¹ See Bermuda Constitution § 77; Court of Appeal Act § 3.

³² See Bermuda Constitution §§ 15, 71.

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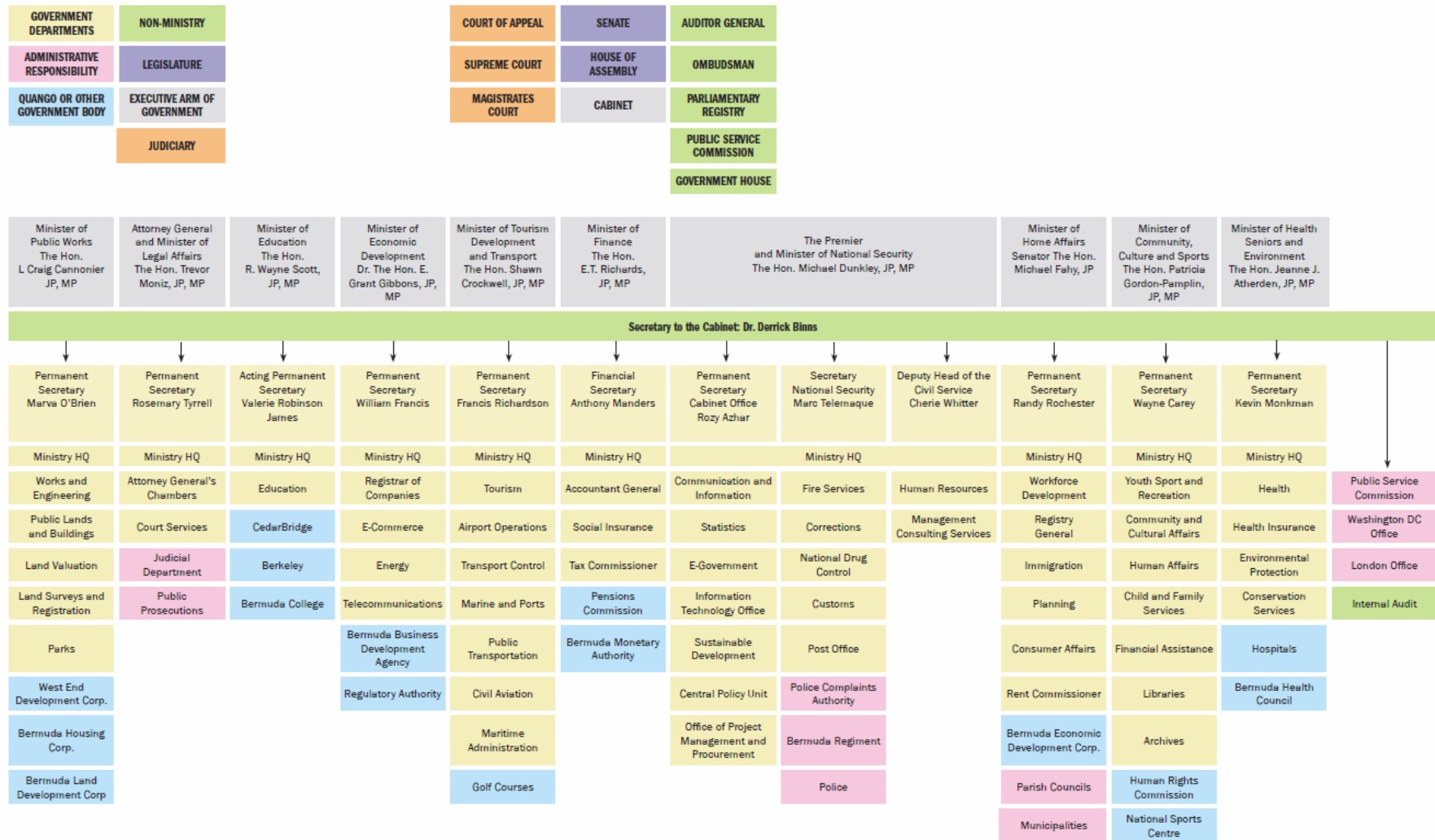


Figure 2. Government of Bermuda Organizational Chart - December 2015.³³

³³ The Government's latest organizational chart does not yet reflect two very recent 2016 departmental-level mergers. The Departments of Environmental Protection and Conservation Services merged to form a new Department of Environment and Natural Resources (as explained at *infra* note 77); and the Sustainable Development Department merged into the Central Policy Unit.



3 Issues affecting multiple uses of and activities in the nearshore marine environment

While uses and activities are in large part governed by sector-specific regulation, several overarching legal frameworks apply to many uses and activities. This section reviews these overarching frameworks before turning to sector-by-sector analysis in the sections to follow.

3.1 Ownership and disposition of ocean areas

Without a legal basis for management, MSP cannot result in a legally enforceable marine plan. Legal authority over ocean areas therefore provides the foundation for MSP and the authority for the government to manage the marine environment.

3.1.1 Maritime boundary delimitation

Marine jurisdiction is subject to international law, and particularly to the UN Convention on the Law of the Sea (UNCLOS). The UK has acceded to UNCLOS, including on behalf of Bermuda,³⁴ and Bermuda's claims are consistent with UNCLOS.

The boundary of Bermuda is defined as the seaward extend of the territorial sea, which is 12 nautical miles (nm) from shore.³⁵ Within this boundary, the Crown exerts sovereign control over the sea, subject to public rights of use and limitations flowing from international law (e.g., innocent passage).³⁶ In 1996, the Governor by proclamation, also on behalf of Her Majesty, claimed an exclusive economic zone (EEZ) extending from the seaward boundary of the territorial sea out to 200 nm from shore. All rights exercisable in this area under international law are vested in Her Majesty.³⁷

The proposed geographic scope of nearshore MSP in Bermuda includes areas of both the territorial seas and of the EEZ (Figure 1). As such, any legislation or other management scheme for implementation of nearshore MSP must carefully delineate how it applies both within and outside the territorial sea, and it must be consistent with international law in both areas.

³⁴ United Nations Convention on the Law of the Sea, 1999 Gr. Brit. T.S. No. 81 (Cm 4524) (instrument acceding to UNCLOS including on behalf of Bermuda), <http://treaties.fco.gov.uk/docs/pdf/1999/TS0081.pdf>.

³⁵ Bermuda (Territorial Sea) Order In Council 1988, SI 1988/1838, *amended by* The Bermuda (Territorial Sea) (Amendment) Order 1997, SI 1997/1578 (together defining the baseline for measurement of the territorial sea). While the original boundary was closer to shore, the Crown extended the boundary to 12nm pursuant to the Colonial Boundaries Act, 1895, 58 & 59 Vict., c. 34 (Eng.), and consistent with UNCLOS.

³⁶ Our research has indicated no Bermuda or UK statutory or case law delineating the extent of either the Crown's proprietary control or the public's rights of use in Bermuda. This is consistent with other areas of the United Kingdom—in particular, Scotland—where authorities have considered whether and how to explicitly delineate these rights. See Scottish Law Commission, Discussion Paper on Law of the Foreshore and Seabed, No. 113 (2001).

³⁷ Proclamation Establishing an Exclusive Economic Zone for Bermuda, GN 407 / 1996 (June 10, 1996), <http://www.bermudalaws.bm/Laws/Consolidated%20Laws/Proclamation%20Establishing%20an%20Exclusive%20Economic%20Zone%20for%20Bermuda.pdf>.



3.1.2 Regulation of occupation of submerged Crown lands

Permission from the Crown is required to occupy marine areas under the Crown's sovereign rights in the territorial sea. These areas include the seabed, subsoil, and foreshore areas that have not been sold by the Crown. Under the Constitution, the Governor is empowered to dispose of Crown land, including the seabed, subsoil, and foreshore, on behalf of the Crown.³⁸

The Government manages allocation of rights to occupy the seabed and foreshore under the Public Lands Act 1984, which makes the Minister responsible for public lands (currently the Minister of Public Works) responsible for "the charge and management" of all public lands in Bermuda.³⁹ The Act authorizes the Minister to:

- sell "any land the property of the Government" with the prior approval of the Legislature; or
- lease or convey other limited rights over such land for more than 21 years, but no more than 120 years, with prior approval of both the Legislature and the Cabinet.⁴⁰

The Act provides no explicit authority to grant permission for leases, licences, or other property interests for less than 21 years; however, authority for such shorter leases are likely included in the Minister's general public lands management authority.

Most forms of permanent or semi-permanent use and occupation of the foreshore, seabed, or subsoil must obtain permission. Activities subject to permission include docks, marinas, dredging, land reclamation, seafloor cabling, mining (including surveys and production activity), offshore energy facilities, and other permanent or semi-permanent facilities. The Minister has not required permission for temporary activities—such as placement of fish pots or anchoring—and certain activities managed by other departments—notably, moorings, which are regulated by the Department of Marine and Ports Services. Most permissions take the form of a lease, but certain activities (e.g., undersea cabling, surveys for mining or offshore energy facilities) may take the form of a more limited licence applicable for large areas, reserving leasehold rights for production in a smaller area once more details of the proposed activity are determined.

The Department of Public Land and Buildings (formerly the "Estates Section") negotiates sale, lease, and other conveyancing of interests in public lands on the Minister's behalf. As a matter of policy, the Department avoids leases exceeding 21 years; as a result, most new leases are for just short of 21 years. A lease may require payment of the full amount at the start of the lease, or, for commercial activity, may require payment of royalties, such as a percentage of the proceeds of the activity.⁴¹ Once the terms and valuation are agreed, a lease is signed by the Minister, who retains the ultimate discretion to approve or disapprove the lease.

³⁸ Bermuda Constitution § 24. The seabed, subsoil, and foreshore are together known colloquially as the "Queen's bottom."

³⁹ Public Lands Act § 5

⁴⁰ *Id.* § 8.

⁴¹ Interview with Chris Farrow, Department of Estates (May 26, 2015) (on file with ELI). Leasing alone does not trigger consultation requirements. Personal communication.



A property interest is a necessary, but not sufficient, step in obtaining approval for activity affecting the foreshore, seabed, or subsoil. In practice, most activities subject to control by the Department of Public Lands and Buildings are also subject to licencing, permitting, or other approval requirements arising from other laws. For example, creation of a dock requires both a lease from the Department of Public Lands and Buildings and approval from the Department of Planning, which may also require consultation with other departments due to impacts on protected species or navigation or to address other concerns.⁴² Leases may include conditions, including enforcement conditions, requested by another approving entity; in such cases, the requesting department generally would take responsibility for monitoring compliance with the condition.

3.2 Planning

Many activities in Bermuda’s nearshore marine environment are subject not only to sector-specific laws, but also to requirements that apply across sectors. Planning permission is central to decisions about where and how development can occur in Bermuda, and an understanding of where and how these requirements apply is needed for a complete understanding of any MSP process in Bermuda.

Planning requirements and procedures arise from the Development and Planning Act 1974, as amended, which calls for the creation of a development plan and provides that planning permission is required for land development.⁴³ The Act is implemented by the Minister with planning authority—currently, the Minister of Home Affairs (Figure 2)—through the Department of Planning and the Development Applications Board (DAB), the appointed body to which applications for planning permission are made.⁴⁴

3.2.1 Development Planning

The Minister with planning authority must create a development plan for Bermuda. The plan must formulate policy and proposals for development and land use and must include other information required by the Act.⁴⁵ The Minister must create a draft plan, which is submitted to the Legislature and becomes effective when approved by both houses by resolution.⁴⁶ Once approved, a development plan is binding on the planning applications, as planning permission must be consistent with the plan. The Bermuda Plan 2008, approved by the Legislature in 2010, is the current Development Plan.⁴⁷

The Act provides that the development plan may designate areas of land both for development and for conservation. As to the latter, the plan may designate any area of Bermuda as an “environmental conservation area” in which “the preservation of the natural environment shall take precedence over other planning considerations.”⁴⁸ To implement this authority, a development plan can establish “designated areas” that “possess natural features of special environmental value” warranting special

⁴² *Id.*

⁴³ Development and Planning Act 1974 (1974:51) §§ 6-13, 14.

⁴⁴ *Id.* §§ 3, 17, 19. The DAB consists of not fewer than seven nor more than ten members. *Id.* § 3.

⁴⁵ *Id.* § 6.

⁴⁶ *Id.* § 11. The draft plan may take effect for a limited time prior to approval by the legislature.

⁴⁷ See Bermuda Department of Planning, Bermuda Plan 2008. Planning Statement (2008), at http://www.planning.gov.bm/2008_Plan.aspx.

⁴⁸ Development and Planning Act § 6.



protection.⁴⁹ These areas are designated for five specific purposes, including for beach protection, habitat protection, and other natural features protection, and each purpose is associated with a “Head of Protection” limiting DAB discretion in grants of planning permission.⁵⁰ These areas can include bodies of water and waterways.⁵¹

The Bermuda Plan 2008 creates the zones and requirements from which planning permission flows. It establishes two types of base zones—development and conservation—and two types of areas—conservation and protection—that overlay one or more base zones (Table 2).⁵² For each zone and area type, the Plan establishes planning goals and guidance that the DAB must follow.

Table 2. Zones and Overlay areas in Bermuda Plan 2008.

Designation	Zones or Areas included	Coverage
Development Base Zone	Rural	Open countryside and areas of a rural character
	Residential	Housing areas
	Tourism	Hotels, cottage colonies, housekeeping cottages and apartments, limited tourist accommodation and guest houses, etc.
	Institutional	Social services (e.g., educational, health care facilities, cultural, civic and community centres, places of worship, and health and special care facilities) and government services and facilities (police, fire, regiment and emergency services, etc.)
	Commercial	Retail, offices and services
	Mixed Use	Commercial uses will be permitted and other land uses including residential, tourism, institutional, and coastal uses may be permitted
	Industrial	Industrial use
Conservation Base Zone	Airport	Airport land
	Nature Reserve	Areas of special environmental significance and ecological, biological, geological, or scientific value
	Park	Lands designated pursuant to the Bermuda National Parks Act 1986 and other public amenity open spaces protected for the use and enjoyment of the general public
	Coastal Reserve	Coastline, cliffs, beaches, dunes, rock formations, trees, vegetation, caves, and islands important for their natural and scenic qualities
	Open Space Reserve	Network of green spaces that provide environmental, visual, and amenity value and connectivity between the Railway Trail, Parks, Nature Reserves, and other conservation land
Conservation Area	Recreation	Public and private playing fields, sports facilities, and golf courses
	Woodland Reserve	Woodlands protected for their ecological and/or amenity value
	Agricultural	Agricultural and applied farming uses and secondarily horticultural

⁴⁹ Development and Planning Act 1974 § 28.

⁵⁰ *Id.* at Fourth Sched.

⁵¹ *Id.*

⁵² Bermuda Plan 2008, at 27-32 (explaining zones and areas and directing Board decisions).



Designation	Zones or Areas included	Coverage
	Reserve	activities
Protection Area	Historic	Historic town centre of the Town of St. George and the Royal Naval Dockyard, other historic fortifications, and archaeological sites
	Cave	Cavernous areas around Harrington Sound and Morgan’s Point, other known cave locations
	Water Resources	Areas in proximity to the Island’s main water resources
	Airport Control	The Obstacle Free Zone, the Transition Zone, the Inner and Outer Approach Cones, and the LDEN 55 noise contour of the Airport

The Plan delineates and protects designated areas created pursuant to Section 28 by including them in a base zone or overlay area.⁵³ Lands designated under Section 28 and included in a conservation base zone or conservation or protection area are protected by the relevant Head of Protection. Some lands included in a conservation base zone or conservation or protection overlay area correspond to lands designated under authorities other than Section 28—including the National Parks Act and Section 31 of the Development and Planning Act (historic areas). Development on such lands is subject to restrictions arising from these authorities.

While the Bermuda Plan 2008 includes designations that address shoreline areas—notably Coastal Reserves—its coverage of the marine environment is limited. The plan defines coastal development to include docks, floating docks, slipways, sea walls, revetments, breakwaters, and beaches.⁵⁴ These activities require planning permission, as described below. However, the Plan’s zoning map does not extend beyond the low water line, and does not apply to activities not touching the terrestrial environment, with a limited exception for floating docks. Thus, the Plan would likely apply, in part, to an offshore wind turbine because its power cable comes ashore, but would not apply to an aquaculture facility with no such direct connection to shore.

3.2.2 Planning permission

The Development Plan is put into practice through the planning permission process set forth in the Act and subsidiary legislation. Any “development” requires planning permission from the DAB, a body established by the Act and charged with review of applications for planning permission.⁵⁵ Under the Development and Planning Amendment Act 2014, the DAB with the approval of the Minister can delegate its authority to the Director of Planning for all or certain types of planning applications.⁵⁶ Planning permission requires consultation with other government entities and may also require environmental impact assessment (EIA) and preparation of an environmental impact statement (EIS) (Figure 3).

⁵³ The Plan does not identify any environmental conservation areas other than those created pursuant to Section 28.

⁵⁴ *Id.* at 77-80.

⁵⁵ Development and Planning Act 1974 §§ 3, 16-17.

⁵⁶ Development and Planning Amendment Act 2014 § 3. Decisions by the Director under delegated authority may be appealed to the DAB. *Id.* § 7.



“Development” is defined to include activities that involve “building, engineering or other operations” on, over, or under the seabed, as well as material changes to the use of any building or land.⁵⁷ “Building” is defined broadly to include “any structure or erection of a permanent or semi-permanent nature” and as such could include not only coastal activities such as dock construction, but also offshore activities such as deployment of energy or aquaculture⁵⁸ facilities or sinking of wrecks. While placement of temporary facilities, such as an anchored platform for dredging or another purpose, do not appear to be within the definition of “building,” such activities could be construed as an “operation”⁵⁹ and thus could fall within the definition of “development.”⁶⁰ Indeed, deposit of waste and spoil are specifically defined as development subject to the Act.⁶¹ However, while the definition of development is broad, the Bermuda Plan 2008, as noted above, has limited its marine scope to activities touching the shore and to some floating docks. As a result, other activities in the ocean are not required to obtain planning permission at this time.

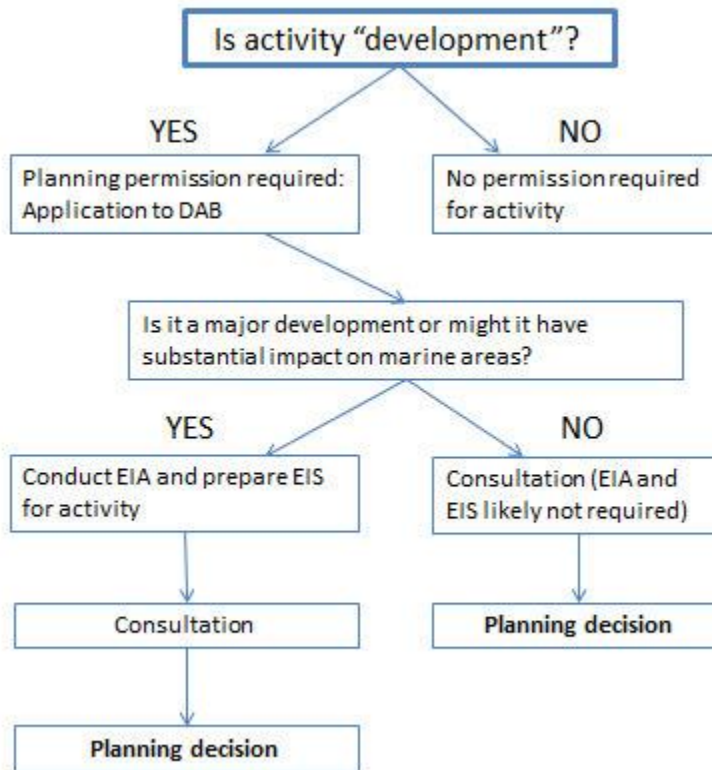


Figure 3. Overview of planning permission and environmental assessment.

⁵⁷ Development and Planning Act 1974, § 14; see also *id.* at § 1 (defining “land” to include land under water).

⁵⁸ “Agriculture” is specifically excluded from development, but that term is defined solely with reference to terrestrial agriculture. *Id.* § 1. As a result, fishing or aquaculture may be “development” as they may involve placement of structures (e.g., pots, net pens) on, in, or over the seabed (depending on gear used).

⁵⁹ “Operation” is not defined in the Act.

⁶⁰ *Id.*

⁶¹ *Id.* § 14(3).



A person wishing to undertake an activity that is considered development must apply to the DAB for planning permission,⁶² following the provisions of the Act and the Development and Planning (Application Procedure) Rules 1997, which set out information that must be included in an application, including a location plan and site plan, among other requirements.⁶³ The Board also may require additional information, including “information relating to the environmental effects of the proposed development.”⁶⁴ Under this authority, applicants will be required to conduct an environmental impact assessment (EIA) and to prepare an environmental impact statement (EIS) for certain proposed activities.⁶⁵

As explained in a 2010 planning policy guidance note issued by the Department of Planning, activities subject to EIA and EIS requirements include “major developments;” developments proposed in locations that are particularly environmentally sensitive and/or vulnerable (as indicated on zoning maps); and developments with complex and/or potentially adverse environmental effects.⁶⁶ While the decision of whether EIA and EIS are required is likely to depend on the details of a particular development, the Bermuda Plan 2008 identifies specific types of major developments that are likely to require an EIS. Listed activities with a high potential for substantial ocean and coastal impacts include:

- major hotel and resort development;
- power plants and water supply systems;
- sewage treatment and disposal systems;
- major utility development;
- major port infrastructure, airport, or transportation developments;
- major industrial developments;
- reclamation projects; and
- marinas.⁶⁷

Projects seeking planning permission in or near a conservation area designated in the development plan—including designated areas created pursuant to Section 28—are likely to require EIA and preparation of an EIS. Such developments, if approved, also are likely to be subject to conditions on planning approval—notably including a conservation management plan (CMP).⁶⁸ CMPs are intended to

⁶² *Id.* § 16.

⁶³ *See id.*; Development and Planning (Application Procedures) Rules 1997 § 8.

⁶⁴ Development and Planning (Application Procedures) Rules 1997 § 10.

⁶⁵ Bermuda Department of Planning, Environmental Impact Assessments and Environmental Impact Statements (2010) (GN106), at <http://www.planning.gov.bm/Documents/Final%20Bermuda%20Plan%202008/Guidance%20Notes/GN106%20Environmental%20Impact%20Assessment.pdf>.

⁶⁶ *Id.* at 4.

⁶⁷ Bermuda Plan 2008, ENV.4, at 49-50.

⁶⁸ *Id.* ENV.6-ENV.8, at 50-51.



improve biodiversity of endemic and native animal and plant life, and are largely focused on management of vegetation.⁶⁹

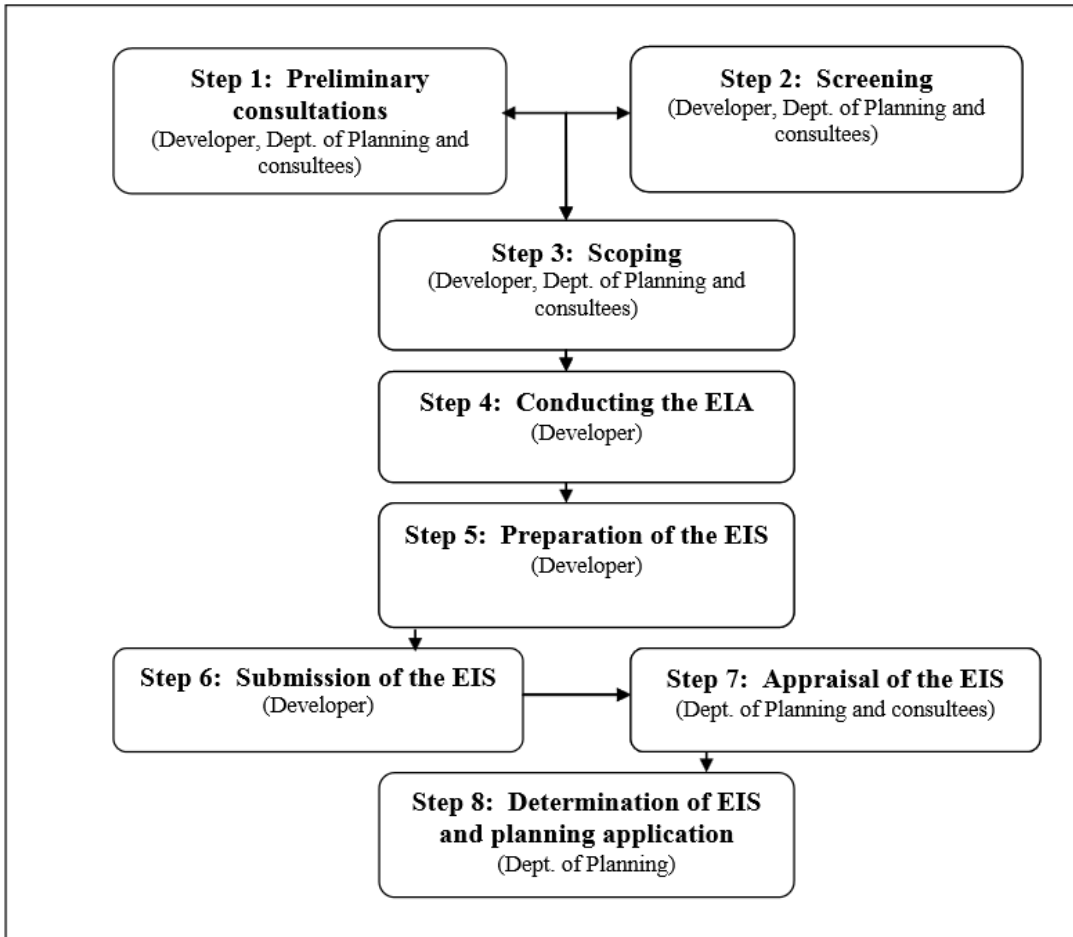


Figure 4. EIA and EIS Process under the Development and Planning Act.⁷⁰

The EIA process and EIS development includes several steps (Figure 4), including scoping, assessment, production, and review. Developers conduct EIA and produce EIS, but the Department of Planning suggests consultation with other departments and affected stakeholders early in the process to ensure that all relevant factors are considered.⁷¹ The Bermuda Plan 2008 sets out the requirements for an EIS, including containing “the appropriate plans, information and data in sufficient detail to enable the Board to determine, examine and assess the potential environmental impacts of the proposal.”⁷² The EIS must include the following: a description of the proposed development, a description of alternative options

⁶⁹ See Bermuda Department of Planning, Conservation Management Plans (2014) (GN:107), 3, at <http://www.planning.gov.bm/Documents/Final%20Bermuda%20Plan%202008/Guidance%20Notes/GN107%20Conservation%20Management%20Plans.pdf>.

⁷⁰ Bermuda Department of Planning, *supra* note 65 at 5.

⁷¹ Bermuda Plan 2008, ENV.2-4, at 48-50.

⁷² *Id.*



considered; a description of the proposal site and area; and assessment of the effects of the proposal and identification of impacts; and identification of mitigation requirements.⁷³ The Bermuda Plan requires additional information, including that required by the Department of Planning through guidance.⁷⁴

When the DAB receives a completed application—whether or not an EIS is required—it must provide those Ministries and Departments “as it considers may be affected by, or interested in, an application” with an opportunity to make written comments.⁷⁵ The 2008 Bermuda Plan requires consultation with the Ministry of Works and Engineering (now the Ministry of Public Works) and the Department of Marine and Ports Services for “[a]ny coastal development proposal;”⁷⁶ in practice, many development applications for activities in the ocean—and particularly activities for which an EIS is required—will require additional consultations, most notably with the Department of Conservation Services (DCS), Department of Environmental Protection (DEP),⁷⁷ and Marine Resources Board (MRB), due to potential impacts on protected species and protected areas.

The DAB may approve applications for planning permission in whole, in part, or with conditions, or it may reject them with reasons.⁷⁸ DAB decisions must be consistent with the Act, regulations, Development Plan, zoning orders, municipal by-laws, and other statutory provisions.⁷⁹ Decisions of the DAB are final but may be appealed to the Minister.⁸⁰

Alternatively, the Minister may issue a Development Order granting (or providing for the Board to grant) development permission for a specific project or a class of projects.⁸¹ A number of orders are currently

⁷³ *Id.* ENV.5, at 50.

⁷⁴ *Id.*; Department of Planning, *supra* note 65, at App. 2.

⁷⁵ Development and Planning (Application Procedure) Rules 1997 § 19.

⁷⁶ Bermuda Plan 2008, at 76.

⁷⁷ Effective March 2016, DCS and DEP merged to form the new Department of Environment and Natural Resources (DENR)—still housed within the Ministry of Health, Seniors and Environment. The merger is intended to “create a more cohesive and coordinated approach to the management of Bermuda’s environment and use of its natural resources, under the guidance of a single Director.” The new DENR is responsible for “all matters related to animal and plant management, pollution control, marine resources, agriculture support services, conservation of Bermuda’s most sensitive habitats, protected species recovery and administration of the Bermuda Aquarium Museum and Zoo.” See Government of Bermuda Press Release, “Ministry merges two departments into new Department of Environment and Natural Resources,” Mar. 31, 2016, at <https://www.gov.bm/articles/ministry-merges-two-departments-new-department-environment-and-natural-resources>. The merger could also lead to broader environmental enforcement efforts, perhaps supported by legislative changes. Personal communication. Given that the merger is so recent, this report retains references to the old DCS and DEP—with the understanding that their operations will be subsumed within the new DENR.

⁷⁸ Development and Planning Act 1974 §§ 16-18. In addition, development permission is also required from the Department of Works and Engineering within 14 feet of the Pembroke Canal. See Pembroke Canal Regulations of 1971 §§ 4-7.

⁷⁹ Development and Planning Act 1974 § 17.

⁸⁰ *Id.* §§ 19, 57; see also Development and Planning (Appeals to the Minister) Rules 1974.

⁸¹ Development and Planning Act 1974 § 15.



in effect, including a general development order authorizing developments of lesser concern and special development orders (SDOs) applicable primarily to large residential, hotel, and resort developments.⁸²

3.3 Species protection

Bermuda has enacted a suite of laws intended to protect threatened species and their habitats. These laws and their subsidiary legislation, as implemented, affect a wide variety of activities in the nearshore marine environment that may adversely impact protected species.⁸³

3.3.1 Protected Species Act

The Protected Species Act 2003 is intended to “safeguard and maintain threatened species and protect Bermuda’s special and fragile natural resources.”⁸⁴ The Act charges the Minister responsible for conservation services—currently, the Minister of Health, Seniors, and the Environment—with accomplishing this goal. The Department of Conservation Services (DCS) administers the Act on the Minister’s behalf.

The Act protects species by authorizing the Minister to issue an order declaring a species of plant or animal to be a “protected species.”⁸⁵ Each protected species must be classified as critically endangered, endangered, or vulnerable⁸⁶ and must be allocated into one of three levels of protection.⁸⁷ Levels of protection include level 1 (most protective), level 2, and level 3 (least protective).⁸⁸ The Minister also may “by order designate as a protected area any critical terrestrial or marine habitat essential for the protection of a specified protected species.”⁸⁹ The Minister may restrict or prohibit activities as necessary to protect marine critical habitat, including prohibitions on mooring or anchoring; imposition of speed limits; or other prohibitions and restrictions on vessel traffic.⁹⁰

The Protected Species Amendment Order 2016 makes protected species designations, including seabirds, finfish, marine mammals, molluscs, and sharks and rays as level 1 species and finfish, molluscs,

⁸² See Bermuda Laws Online, Special Development Orders, at http://www.bermudalaws.bm/site_docs/sdo.aspx (listing orders). The Development and Planning (General Development) Order 1999, as amended by the Development and Planning (General Development) Amendment Order 2015, exempts certain activities from the planning permission requirement, but the excluded activities primarily apply exclusively to terrestrial activity and do not appear relevant to development in the ocean.

⁸³ According to government staff, there remains a significant need for research and data collection—including not only for protected species, but also for commercial species—to help ensure effective management. Personal communications.

⁸⁴ Protected Species Act 2003 § 5.

⁸⁵ *Id.*

⁸⁶ *Id.*

⁸⁷ *Id.* § 5A.

⁸⁸ *Id.* at sched.

⁸⁹ *Id.* § 6.

⁹⁰ *Id.*



and marine plants (seagrass) as level 2 species.⁹¹ Each of the listed species is classified and allocated to a level of protection and vulnerability, but the Order does not include critical habitat designations.

Table 3. Offences and penalties under the Protected Species Act 2003.

Offence	Level 1	Level 2	Level 3
Wilfully damage, destroy, remove, or obstruct protected species nest or habitat	\$25,000 or 2 years imprisonment	\$25,000 or 2 years imprisonment	\$25,000 or 2 years imprisonment
Wilfully damage, destroy, injure, disturb, uproot, fell, or kill protected species	\$25,000 or 2 years imprisonment	\$15,000 or 1 year imprisonment	\$5,000
Take, ⁹² import, export, sell, or purchase protected species or part	\$25,000 or 2 years imprisonment	\$15,000 or 1 year imprisonment	
Transport or possess protected species or part	\$25,000 or 2 years imprisonment		

The Protected Species Act makes it an offence to harm listed protected species, nests, or habitat without authorization (Table 3). The Minister may authorize activities that would otherwise run afoul of these restrictions by issuing a licence or permit. A licence, which may include conditions, authorizes its holder to engage in otherwise prohibited activities, including scientific research for species conservation; education at a museum or aquarium; aquaculture; or horticulture or species enhancement programmes.⁹³ A permit may also include conditions and may issue for:

- relocation of a species or critical habitat to enhance species survival;
- restoration or maintenance activities to enhance species survival;
- destruction of immovable protected species or critical habitat to prevent risk to human health or safety or prevent destruction of a building or structure; or
- installation of utilities, trenching for underground cabling ... and the establishment of moorings.”⁹⁴

Under these provisions, a wide range of activities may require permitting or licencing, as well as mitigation actions.

⁹¹ Protected Species Order 2012, *as amended by* Protected Species Amendment Order 2016, at sched. *See also* Protected Species Notice of Intention 2015, BR 96 / 2015 (clarifying intent of amendment of schedule in Protected Species Order 2012).

⁹² Take “includes to injure, disturb, harass, kill, capture and collect and, in relation to any protected species of plant, includes to pick, break, cut, uproot, destroy, damage and remove.” Protected Species Act 2003 § 2.

⁹³ Protected Species Act 2003 § 8.

⁹⁴ *Id.* § 8A.



3.3.2 Fisheries Act

The Minister with fisheries responsibility—currently, the Minister of Health, Seniors, and the Environment—can by order, among other things, prohibit⁹⁵ taking of certain fish.⁹⁶ Based on this authority, the Minister has issued the Fisheries (Protected Species) Order, which prohibits the taking of listed species anywhere in Bermuda’s marine areas.⁹⁷ The list of protected species is extensive, including all marine mammals, sea turtles, and parrotfishes, as well as a wide variety of invertebrates and other reef fishes.⁹⁸ “Taking” under the Fisheries Act “includes injuring, capturing, killing, destroying, collecting and being in possession of” a marine organism.⁹⁹ The Fisheries Act allows for exemptions in only limited circumstances, which extend to scientific research; BIOS, museum, and aquarium use; conservation; control of the fishing industry; establishment of fish nurseries and preserves; and aquaculture.¹⁰⁰

The Fisheries Act provides a very broad prohibition on harm to protected marine species—in some respects more complete than the Protected Species Act, as opportunities for a licence or permit are more limited. Nonetheless, permits may be sought for activities for which the Act does not provide explicit authority. For example, the North Channel dredging project required transplantation of some corals. After considering an opinion from the Attorney General’s chambers on the intersection of the Fisheries Act and Acts authorizing dredging (see Section 3.4 of this report), DCS and DEP jointly recommended issuance of a permit under the Fisheries Act authorizing transplantation of affected corals under an approved transplantation plan.¹⁰¹ To resolve future similar challenges, corals were removed from the Fisheries (Protected Species) Order list in 2016.¹⁰²

3.3.3 Protection of Birds Act

Under the Protection of Birds Act 1975, it is unlawful to capture, kill, or destroy a protected bird, its egg, or any part of a bird without a licence issued by the Minister responsible for conservation services.¹⁰³ Protected birds include all birds other than domestic birds, those bred or imported in captivity and maintained in captivity (including in the Aquarium or Museum), and common crows, starlings, kiskadees, and house sparrows.¹⁰⁴ Licences under the Act are available only for scientific research and public

⁹⁵ The language limits the Minister’s authority in this respect to prohibition, rather than restriction, of activities. Bermuda Fisheries Act 1972, § 5.

⁹⁶ *Id.*

⁹⁷ Fisheries (Protected Species) Order § 2.

⁹⁸ *Id.*

⁹⁹ Fisheries Act § 2.

¹⁰⁰ *Id.* § 18.

¹⁰¹ Memorandum from Norman MacDonald, Senior Crown Counsel, to Drew Pettit, Director, DCS (8 Apr. 2015) (concluding that the Fisheries Act must be read to promote a consistent and coherent framework, such that a permit from DEP would be required to authorize dredging to occur); Memorandum from Fred Ming, Director of DEP and Drew Pettit, Director of DCS to Marc Telemaque, Permanent Secretary, Ministry of Health, Seniors and the Environment (8 Apr. 2015) (recommending issuance of a permit under Section 18 of the Fisheries Act), on file with the authors.

¹⁰² Fisheries (Protected Species) Amendment Order 2016, BR 5/ 2016.

¹⁰³ Protection of Birds Act 1975 § 2.

¹⁰⁴ *Id.* § 1.



museum collections.¹⁰⁵ The Minister can declare nature reserves by order with the affirmative resolution of the Legislature, as described in Section 4.10.4 of this report.

3.3.4 Whale Watching

Whale watching is a popular marine activity in March and April, when humpback whales migrate through Bermuda's waters.¹⁰⁶ Under the Protected Species Act, it is an offense to harm or harass humpback or sperm whales,¹⁰⁷ and the taking¹⁰⁸ of all marine mammals is prohibited under the Fisheries (Protected Species) Order 1978.¹⁰⁹ In addition, in 2011, the Minister responsible for fisheries established the "Bermuda Marine Mammal Sanctuary," covering the entire EEZ, by order pursuant to section 4 of the Fisheries Act 1972.¹¹⁰ In 2014, to prevent encounters that harm whales and dolphins, the Department of Conservation Services released Whale Watching Guidelines.¹¹¹ The Guidelines provide rules on how boats can approach whales and dolphins, including related to distance, speed, and direction.¹¹² Swimming with or feeding whales is not advised.¹¹³ The Guidelines do not have the force of law; however, they encourage people to contact the Fisheries Wardens if they see the harassment of any whale.¹¹⁴

3.4 Dredging and land reclamation

A variety of activities in the marine environment require dredging, notably including channel deepening (as in the current North Channel project) and dock and marina development (e.g., Hamilton Princess marina development). Other activities may also require dredging, such as undersea cable deployment and offshore mining. Where dredging is required, both the dredging activity and disposal of the spoil raise concerns that are addressed by Bermuda law. Spoil can be discharged onto the sea floor or it may be used for land reclamation. While land reclamation is rare on a small scale, large-scale development projects such as the America's Cup facility may involve land reclamation. This section of the report therefore considers land reclamation as well as dredging.

Dredging operations are subject to a constellation of laws that are administered by two Ministries: the Ministry of Public Works, through the Department of Public Lands and Department of Works and Engineering, and the Ministry of Tourism Development and Transport, through the Department of

¹⁰⁵ *Id.* § 3.

¹⁰⁶ See Offshore Bermuda—Whale Watching, Bermuda Tourism (Mar. 22, 2013), at <http://www.gotobermuda.com/blog/Offshore-Bermuda--Whale-Watching>.

¹⁰⁷ Protected Species Order 2012, at sched.

¹⁰⁸ "Taking" includes "injuring, capturing, killing, destroying, collecting and being in possession of" any such fish. Fisheries Act 1972 § 1.

¹⁰⁹ Fisheries (Protected Species) Order 1978 § 2.

¹¹⁰ See Memorandum of Understanding between the United States Office of Marine Sanctuaries and Bermuda Ministry of Environment to collaborate on international protection, conservation, and management of the humpback whale, NOS Agreement MOA-2012-058/8588, at 3 (2012) (explaining creation of sanctuary).

¹¹¹ Bermuda Department of Environment and natural Resources. Guidelines for Whale Watching in Bermuda, (Nov. 2014), at <http://environment.bm/whale-watching-guidelines>.

¹¹² *Id.*

¹¹³ *Id.*

¹¹⁴ *Id.*



Marine and Ports Services (Table 4). Offshore dredging currently is not subject to the Development and Planning Act 1974 unless it touches the land, as in the case of a land reclamation project on or adjacent to the foreshore.¹¹⁵ Except in these cases, neither planning permission nor any EIA or EIS or consultation is required for permission to dredge and dispose of spoil. However, dredging will require approval from the Department of Public Land and Buildings, particularly where it occurs for commercial or private reasons.

Table 4. Management of dredging and land reclamation under Bermuda law.

Entity	Law	Task
Department of Public Lands	Public Lands Act 1984	Permission to dredge and dispose of spoil below the high-water mark
	Land Reclamation Act	Land reclamation through agreement
Department of Works and Engineering	Sale of Reclaimed Lands Act	Sale of reclaimed lands
Department of Marine and Ports Services	Marine Board Act 1962	General responsibility for dredging for navigation
	Minor Dredging Works Act 1945	Specified dredge projects in bays and ports
	Channel Improvement Act	Maintaining channels and specified dredging works

Under the Public Lands Act 1984, the written consent of the Minister with responsibility for works and engineering—currently, the Minister of Public Works—is required to dredge any part of the seabed below the high water mark or to deposit any material on the seabed or seashore.¹¹⁶ The Department of Works and Engineering administers this process on the Minister’s behalf. Before granting permission to dredge, the Minister may require applicants to submit an application containing “plans and particulars” needed to evaluate the proposed operation, and may (but is not obligated to) provide means of informing affected persons.¹¹⁷ The Minister must refuse consent or require conditions upon a determination that an operation “will cause or is likely to result in obstruction or danger” to marine ecology or navigation or to owners with adjoining land.¹¹⁸

Some dredging and disposal will not require the Minister’s approval: the Public Lands Act 1984 excludes from the requirement those operations authorized by any other Act and those carried out under a licence or permission pursuant to the Sale of Reclaimed Lands Act 1951 or Land Reclamation Act 1964.¹¹⁹ While the latter two laws are implemented within the same Ministry as the Public Lands Act,

¹¹⁵ Disposal of spoil in onshore areas covered by the Bermuda Plan 2008 would likely constitute development and would trigger EIA and consultation requirements. Disposal of spoil to create new areas of land attached to an island of Bermuda would likely also trigger planning permission as the new land would attach to a planned area.

¹¹⁶ Public Lands Act of 1984 § 22.

¹¹⁷ *Id.*

¹¹⁸ *Id.*

¹¹⁹ *Id.* § 23. Excepted activities include dredging authorization under any other Act or works authorized by licence or permission under the Land Reclamation Act of 1964 or Sale of Reclaimed Lands Act 1951.



other laws authorizing dredging are implemented by the Department of Marine and Ports Services, and the intersection of these Acts with the Public Lands Act is discussed below.

Under the Land Reclamation Act 1964, the Minister responsible for public lands can, with the approval of the Governor and both houses of the Legislature, enter into an agreement to reclaim land from the seabed “in any area lying within the outer limits of the reefs of Bermuda.”¹²⁰ No area may be reclaimed on the foreshore, or seabed adjoining the foreshore, unless it is greater than one acre.¹²¹ The law mandates that provisions on certain matters be included in reclamation agreements, ranging from plans and dates to damages for breach and disposition of title in the reclaimed land, as well as allowing for optional provisions, including the right to dredge.¹²² An agreement must specify if the Public Lands Act and the Sale of Reclaimed Lands Act do not apply. Once approved, an agreement acts as an operating licence. However, for projects attached to the foreshore, additional planning permission will be required from the DAB, as discussed in Section 3.2 of this report. Such permission will result in consultation, including with the Department of Marine and Ports Services, and will likely require EIA and preparation of an EIS.

The Sale of Reclaimed Lands Act 1951 allows the Minister with responsibility for works and engineering to sell reclaimed land attached to the foreshore to neighbouring landowners.¹²³ As the seabed is part of the public lands, reclaimed lands are the property of the Crown until sold. As such, it will apply to all reclaimed lands unless an agreement under the Land Reclamation Act 1964 otherwise specifies.

Regardless of how dredge permission is required under the Public Lands Act or other acts, the Marine Board Act 1962 places the operation of dredging equipment under the control of the Minister with responsibility for marine and ports services.¹²⁴ This Minister also has specific legislative authority related to channel maintenance, which is discussed in more detail in Section 4.9 of this report.

¹²⁰ Land Reclamation Act §§ 2, 5.

¹²¹ *Id.*

¹²² *Id.* §§ 3-4.

¹²³ Sale of Reclaimed Lands Act 1951 §2.

¹²⁴ Marine Board Act 1962 § 22.



4 Regulation of uses of and activities in the nearshore marine environment

This chapter reviews the legal context governing particular uses and activities in the Bermuda nearshore marine environment. Governance of these issues is regulated by a combination of sector-specific regulation and the overarching laws discussed previously.

4.1 Commercial Fishing

Commercial fishing is an important activity in Bermuda’s nearshore waters and is regulated under the Fisheries Act 1972, Fisheries Regulations 2010, and associated subsidiary orders and short-term notices. These authorities establish licencing and registration requirements for any person fishing for reward or financial gain, including charters. These authorities limit fishing activity by time, area, gear, and species.

Several entities implement fisheries law (Table 5). Currently, the Minister of Health, Seniors, and the Environment is responsible for implementation of fisheries law and does so through the Marine Resources Section of the Department of Environmental Protection.¹²⁵ The Marine Resources Board (MRB) advises the Minister on matters relating to the Fisheries Act and the “protection and use of marine natural resources” and the marine environment.¹²⁶ The Commercial Fisheries Council (CFC, or Council)¹²⁷ assesses eligibility of fishermen “in respect of fishing vessels, fishing equipment and related matters”¹²⁸ and issues certain licences. Enforcement is provided by “fisheries inspectors,” a designation that includes officers from the Fisheries Enforcement Section within the Marine Resources Division, naval officers, customs officers, and police officers.¹²⁹

Table 5. Institutions governing commercial fishing in Bermuda.

Institution	Role
Minister of Health, Seniors, and the Environment	Issue regulations, orders, and short-term notices, including to declare protected areas, prohibit fishing in aggregation areas, and restrict taking of fish and the use of certain fishing methods
Department of Environmental Protection, Marine Resources Section	Administer fisheries regulations, impose conditions on fishing licences and registrations, issue and advise on issuance of licences
Marine Resources Board	Advise Minister on matters relating to the Fisheries Act, “protection and use of marine natural resources” and the marine environment

¹²⁵ Fisheries Act § 1.

¹²⁶ *Id.* § 3. The Minister annually appoints the MRB, which consists of no more than 12 members, with the Director of Environmental Protection and the Director of Conservation Services being *ex officio* members. See also *Id.* at Third Schedule.

¹²⁷ *Id.* § 3A. The Council consists of up to eight persons, including five commercial fishermen and three members from other marine resource user groups, along with the Director of Environmental Protection as an *ex officio* member. *Id.* at Fourth Schedule.

¹²⁸ *Id.* The Council may receive policy directions from the Minister.

¹²⁹ *Id.* § 2.



Institution	Role
Commercial Fisheries Council	Issue and maintain registry of fishing vessel licences, register fishermen, grant licences for fishing lines with over five hooks
Fisheries Enforcement Section	Enforce Fisheries Act and subsidiary authority; search and seize vessels, gear, and fish

4.1.1 Licencing and Registration

The Fisheries Act authorizes the Minister to make regulations providing for, among other things, the licencing and registration of fishing vessels and fishermen.¹³⁰ The Fisheries Regulations 2010 provide for a layered system of licencing and registration of both vessels and persons, to be issued either by the Director of DEP or the Chairperson of the CFC on the advice of the Director.¹³¹ The regulations establish requirements for both fishing vessels and fishermen.

Each fishing vessel when fishing must display a licence issued by the Council.¹³² A “fishing vessel” is any vessel used for fishing by any person operating for reward or financial gain.¹³³ This definition includes charter and other for-hire fishing vessels, as well as personal vessels if they are hired out or used to catch fish for sale (e.g., at the roadside or directly to restaurants).¹³⁴ Fishing vessel licences are available only to qualified vessel owners, who must have Bermudian status or permanent residency.¹³⁵ Take of fish by a foreign fishing vessel without a licence (for commercial, research, or sporting purposes) is an offence that may result in a fine of \$1,000,000 and vessel forfeiture.¹³⁶ However, “no licence has been granted to a foreign commercial fishing vessel since 1994.”¹³⁷ To the extent fishing vessels are “boats” they are also subject to registration under the Marine Board (Island Boats) Regulations 1965,¹³⁸ which address vessel safety in maintenance and operation.

No person other than a registered fisherman can use or allow another person to use a licenced fishing vessel for fishing in Bermuda’s territorial waters or EEZ.¹³⁹ A fisherman is a person who “engages in fishing for reward or who disposes of his catch for financial gain,” including operators and crew of charter vessels, but not including those fishing from foreign fishing vessels.¹⁴⁰ To register, a qualified

¹³⁰ *Id.* § 13.

¹³¹ Fisheries Regulations 2010, as amended (2013), § 4.

¹³² *Id.* § 5. This is a limited-entry fishery, but there is no specific limit. By informal government estimates, about 200 licenses have been issued, and roughly 70-80 of those are considered full time. Personal communications.

¹³³ Fisheries Act § 1.

¹³⁴ *Id.*

¹³⁵ Fisheries Regulations 2010 §§ 4, 5 (allowing for licencing by spouses of Bermudians and permanent residents).

The registered owner of a fishing vessel may, with approval of the CFC, transfer a license to another vessel he owns. *Id.* § 9.

¹³⁶ Fisheries Act § 7.

¹³⁷ Ministerial Statement By The Hon. Michael H. Dunkley, JP, MP. Premier and Minister of National Security (March 16, 2015), at <http://www.royalgazette.com/assets/pdf/RG331789316.pdf>.

¹³⁸ Bermuda Statutory Instrument SR&O 23/1965, Marine Board (Island Boats) Regulations, [http://www.rcbermuda.bm/Documents/Legals/Marine%20Board%20\(Island%20Boats\)%20Regulations%201965.pdf](http://www.rcbermuda.bm/Documents/Legals/Marine%20Board%20(Island%20Boats)%20Regulations%201965.pdf).

¹³⁹ Fisheries Act §§ 1 (defining EEZ to include territorial waters), Fisheries Regulations § 5.

¹⁴⁰ Fisheries Regulations 2010 §§ 2, 12.



fisherman (Bermudians, their spouses, and permanent residents)¹⁴¹ must apply to the CFC.¹⁴² The CFC will designate fishermen as “full-time fishermen” as appropriate.¹⁴³ While this distinction does not alter treatment under the regulations, registration or licencing conditions may differ for full-time and other fishermen.¹⁴⁴

Licences and registration are subject to conditions set by the Director. The Director can impose any conditions on vessel licences for management or safety reasons,¹⁴⁵ which may differ from vessel to vessel.¹⁴⁶ In addition, the Director may condition registration for reasons related to “better regulation” of the industry. Violation of these conditions is an offence, as is purchase or sale of fish not caught by a registered fisherman on a licenced vessel.¹⁴⁷

The Fisheries Act and regulations establish several additional licences needed to engage in particular fishing activities, which will contain additional conditions (Table 6). A special licence or permit is required to:

- take lobster;¹⁴⁸
- spearfish;¹⁴⁹
- use fixed fishing gear (limited to scientific research, “certain marine resources specified in the licence,” and aquaculture);¹⁵⁰
- use fishing lines with more than five hooks per line;¹⁵¹
- use a gill net or set a net for more than six days;¹⁵² or
- dredge or trawl for fish.¹⁵³

Finally, the Act authorizes the Director to issue a permit to “take, sell, purchase, or possess fish or fish of a specified description, size or weight” for specified purposes.¹⁵⁴ These purposes include:

¹⁴¹ *Id.* § 5.

¹⁴² *Id.* § 12.

¹⁴³ *Id.* § 13.

¹⁴⁴ According to a 2010 report from the Department of Environmental Protection, “[o]nly full-time fishermen are entitled to benefits such as duty-free importation of fishing vessels, essential gear and supplies, fuel rebates, truck permits and participation in specialised fisheries (e.g. spiny lobster fishery).” Bermuda Department of Environmental Protection, A Strategy for the Sustainable Use of Bermuda’s Living Marine Resources (2010), at http://www.caribbeanelections.com/eDocs/strategy/bm_strategy/bm_Fisheries_Strategy.pdf.

¹⁴⁵ Fisheries Regulations 2010 §§ 5, 2(1) (defining “use” as “use for the purpose of taking fish”).

¹⁴⁶ *Id.* § 7 (providing that the register of licenced vessels include “any conditions of the licence imposed under” the regulations).

¹⁴⁷ *Id.* § 18.

¹⁴⁸ *Id.* § 16.

¹⁴⁹ *Id.* § 22.

¹⁵⁰ *Id.* §§ 6, 25. Fixed fishing gear “means any fish pot, trap, weir, snare, fixed line or other type of stationary gear that is used for taking fish.” *Id.* § 2. Fixed line “means any anchored or weighted line rigged with a hook or hooks capable of taking fish independently of a person or fishing vessel.” *Id.* The use of one or more hooks with fixed fishing gear is permitted only where the licence allows for it and sets forth the amount and manner of such use. *Id.* § 6.

¹⁵¹ *Id.* § 23.

¹⁵² *Id.* § 14.

¹⁵³ *Id.* § 26.



- scientific research;
- BIOS, museum, or aquarium use;
- protection or conservation of fish;
- control of the fishing industry;
- establishment and control of fish nurseries and preserves; and
- aquaculture.¹⁵⁵

The licencing and registration requirements work together, such that multiple licences may be needed to engage in an activity, and the types of licence required depend on the use of the fish. For example, take of lobster for commercial use requires a vessel licence, fisherman registration, and a lobster licence; however, commercial fishermen are not eligible for a fixed gear licence and therefore cannot use pots. By contrast, lobster take for scientific purposes would require a special permit from the Director and would be eligible for a fixed gear licence, but would not necessarily require a vessel licence, fisherman registration, or lobster licence. As a result, close consideration is needed to accurately identify the licencing, registration, and permitting requirements for different activities, as well as any other associated limitations on species, gear, or area.

Table 6. Fishing licence, registration, and permit types in Bermuda.

Licence, registration, or permit	Applies to	Available to/for	Issued by
Fishing vessel licence	All fishing vessels, including charter vessels	Bermudians, spouses of Bermudians, and permanent residents	CFC on advice of and subject to conditions identified by Director of DEP
Fisherman registration	All fishermen who dispose of catch for reward or financial gain, including operator/crew of charter vessels	Bermudians, spouses of Bermudians, and permanent residents	CFC on advice of and subject to conditions identified by Director of DEP
Fixed fishing gear licence	Use of fixed gear	Any person, for scientific research, exploiting “certain marine resources,” or aquaculture	CFC on advice of Director or Marine Resources Section, subject to conditions identified by Director of DEP
Lobster licence	Take of lobsters	Any person	Director
Licence for fishing lines with > 5 hooks	Use of longlines	Registered fishermen	Chairperson (Director may impose conditions on registration)
Net permit	Use or possess a gill net or set a net for more than 6 days	Registered fishermen	Director
Spearfishing licence	Take fish by spearfishing	Any person	Director

¹⁵⁴ Fisheries Act § 18.

¹⁵⁵ *Id.*



First, certain restrictions have been established by regulation. These include a closed season for lobster from April 1 to August 31 each year,¹⁵⁷ a no-spearfishing zone within one nautical mile of Bermuda,¹⁵⁸ and strict limits on the use of nets have been established in parts of Flatts Inlet and Harrington Sound.¹⁵⁹ The regulations also provide restrictions applicable to a variety of high-value species (tuna, grouper, snapper, etc.), including size and/or weight limits, catch limits, and gear restrictions.¹⁶⁰

Second, the Fisheries Act authorizes the Minister to declare an area a “protected area.”¹⁶¹ Within a protected area, the Minister may prohibit the taking of all fish or certain species, for any specified period of time (including seasonally).¹⁶² The Minister may also restrict anchoring in a protected area.¹⁶³ This authority was used to establish 29 protected areas and two seasonally protected areas in the Fisheries (Protected Areas) Order 2000.¹⁶⁴ Each of the 29 protected areas has a 300-to-600 meter radius, except for one 1000-meter radius area within which the taking of fish and the use of anchors other than Danforth (sand) anchors is prohibited.¹⁶⁵ These areas are described in Figure 5 as “dive site protected areas” because they are located in and protect popular dive sites.¹⁶⁶ Most of these sites have associated moorings so that anchors are not required. The two seasonally protected areas are called the South Western Area and the North Eastern Area, and within both the taking of fish is prohibited from May 1 to August 31 each year.¹⁶⁷

Third, the Minister can issue a short-term notice in the *Gazette* when there is an “immediate need” for prohibition of fishing in a fish aggregation area “for the conservation and protection of fish in the [EEZ].”¹⁶⁸ A short-term notice can prohibit fishing in the area for a period up to 90 days, after which time a protected area must be declared by Order.¹⁶⁹ This authority has been used to protect grouper

¹⁵⁷ Fisheries Regulations 2010 § 21.

¹⁵⁸ *Id.* § 22.

¹⁵⁹ *Id.* § 14 (prohibiting nets other than cast nets and bait nets not exceeding 12 feet and prohibiting catch of certain species with nets in these areas).

¹⁶⁰ *Id.* §§ 15, 20.

¹⁶¹ Fisheries Act § 4.

¹⁶² *Id.*

¹⁶³ *Id.*

¹⁶⁴ Bermuda Fisheries (Protected Areas) Order 2000, BR 38 / 2000, [http://www.bermulaws.bm/Laws/Consolidated%20Laws/Fisheries%20\(Protected%20Areas\)%20Order%202000.pdf](http://www.bermulaws.bm/Laws/Consolidated%20Laws/Fisheries%20(Protected%20Areas)%20Order%202000.pdf).

¹⁶⁵ *Id.* §§ 2, 3.

¹⁶⁶ Government of Bermuda, Department of Conservation Services (DCS), Bermuda Marine Enhancement Structure Policy. Position Statement and Evaluation Guidelines 10 (2014).

¹⁶⁷ Fisheries (Protected Areas) Order 2000 § 3.

¹⁶⁸ Fisheries Act § 4A.

¹⁶⁹ *Id.* Required notice includes publication in the *Gazette* and advertisements on television and radio. It is a defence if the offender can prove he or she “could not reasonably have been expected to know of the notice.”



spawning aggregations in two areas (each about 2 km²)¹⁷⁰ and to protect blue-striped grunt near St. Catherine's Point.¹⁷¹ Such notices are reissued annually in practice.¹⁷²

Fourth, the Minister can by order prohibit¹⁷³ taking of certain fish (at all or with certain gear) or the use of certain fishing methods.¹⁷⁴ This authority has been deployed in the Use of Fishing Nets Order, which prohibits the use of nets in Shelly Bay, Somerset Long Bay, Whalebone Bay, and Coot Pond.¹⁷⁵ In addition, this authority is the basis for the Fisheries (Protected Species) Order, which prohibits the take of listed species.¹⁷⁶

Fifth, license or permit policy may implicitly establish protected areas if license conditions prohibit certain activities in a specific location. This approach is used to prohibit recreational lobster diving and commercial lobstering, respectively, in designated areas.¹⁷⁷ These restrictions are shown in Figure 5 as the "spiny lobster reservoir" and "no lobster fishing area."

It is important to note that area designations relevant for fishery species can also occur under other legislation. The Coral Reefs Act of 1966 establishes the North and South Shore Coral Reef Preserves, administered by the Department of Conservation Services. In these preserves, it is prohibited to remove, harm, or possess marine flora and fauna, whether alive or dead, attached to the coast, seabed, or any reef.¹⁷⁸ Offenses under the Act are punishable by up to a \$480 fine and six months imprisonment.¹⁷⁹

The Marine Board (Prohibited Areas) Notice 2010 prohibits a ship or boat—including fishing boats—from entering certain areas, including two areas adjoining nature reserves and bay waters abutting a

¹⁷⁰ No. 704, Notice Issued Pursuant to Section 4A of the Fisheries Act of 1972 (Aug. 23, 2013); No. 783, Notice Issued Pursuant to Section 4A of the Fisheries Act of 1972 (Aug. 20, 2010), <http://bermudasun.bm/Content/Default/Aug-2010/Article/25-August-2010-Government-Notices/-3/848/47758>.

¹⁷¹ See, e.g., discussion of Blue Grunt Fish Aggregation Area, at <http://bernews.com/2010/04/north-shore-closed-for-fishing-for-2-months/>.

¹⁷² Personal communication.

¹⁷³ The language limits the Minister's authority in this respect to prohibition, rather than restriction, of activities. Fisheries Act § 5.

¹⁷⁴ *Id.*

¹⁷⁵ Bermuda Statutory Instrument BR 18/1990. Fisheries (Use of Fishing Nets) Order 1990 § 3.

¹⁷⁶ Fisheries (Protected Species) Order § 2. These species include marine turtles, marine mammals, corals, queen conch, harbour conch, Bermuda cone, netted olive, Bermuda scallop, calico scallop, Atlantic pearl oyster, helmets and bonnets, calico clam, west-Indian top-shell, parrotfishes, Nassau grouper, green hamlet, grass hamlet, mutton hamlet, Red grouper, deer hamlet, Yellowfin grouper, prince/princess rockfish, red rockfish, tiger rockfish, gag, Finescale rockfish, and gag grouper. *Id.* In the Fisheries Act, there is a provision that exempts certain uses from all species restrictions when the exemption is permitted. It applies to scientific research, aquarium use, and aquaculture, among other things. Fisheries Act § 18.

¹⁷⁷ DEP, General Conditions for Taking Lobster with a Recreational Licence, 2015 / 2016 Season (2015) (on file with ELI); DEP, Terms and Conditions for the 2015/2016 Spiny Lobster Fishery (Licence to Use Fixed Fishing Gear) (2015) (on file with ELI).

¹⁷⁸ Bermuda 1966/98 Coral Reefs Preserves Act 1966 §§ 1-3.

¹⁷⁹ *Id.* § 3.



hotel beach.¹⁸⁰ Finally, under the Protected Species Act 2003, the Minister may protect critical habitat (including marine habitat) of any protected species (which includes fishery species like finfish, marine mammals, molluscs, and sharks and rays), and may impose conditions and restrictions on activities in the area considered necessary for the protection of the species.¹⁸¹ Specifically, in a critical marine area the Minister may:

- prohibit the mooring of a vessel;
- prohibit the anchoring of a vessel;
- impose speed limits on marine traffic; and
- prohibit or restrict the movement of marine traffic.¹⁸²

Within critical marine areas, the possible restrictions listed in the Act are narrower than those listed for terrestrial areas, and Protected Species Act area designations offer less broad, ecosystem-wide protection than those under the Fisheries Act.

4.1.3 Enforcement

Under the Fisheries Act, fisheries inspectors include every officer of the Department of Environmental Protection appointed by the Minister for the purpose in writing (i.e., Fisheries Wardens within the Fisheries Enforcement Section), every police officer, every customs officer, and every officer of Her Majesty's Royal Navy.¹⁸³ At any time, a fisheries inspector may "stop, go on board and search any vessel" with a reason to suspect a violation and may detain any vessel or thing liable to forfeiture under the act.¹⁸⁴ When the fisheries inspector transports a detainee to shore, the inspector must make a complaint to a police officer or the detainee will be released.¹⁸⁵ If an offense is committed outside of territorial waters but within the EEZ, it is deemed to have been committed wherever the person is found or first transported to shore.¹⁸⁶ Unless otherwise specified, offences under the Act are subject to a maximum \$50,000 fine and two years' imprisonment.¹⁸⁷ Generally under the Act, a second offense is subject to a double fine and double imprisonment.¹⁸⁸ Additionally, the offender may be liable for forfeiture of fish taken in contravention on the regulations, as well as any vessel, instrument, or equipment used in such taking; and suspension or revocation of his licence.¹⁸⁹

¹⁸⁰ Bermuda BR 76 / 2010 Marine Board (Prohibited Areas) Notice 2010, [http://www.bermudalaws.bm/Laws/Consolidated%20Laws/Marine%20Board%20\(Prohibited%20Areas\)%20Notice%202010.pdf](http://www.bermudalaws.bm/Laws/Consolidated%20Laws/Marine%20Board%20(Prohibited%20Areas)%20Notice%202010.pdf).

¹⁸¹ Protected Species Act 2003 § 6.

¹⁸² *Id.*

¹⁸³ Fisheries Act § 2.

¹⁸⁴ *Id.* § 8. All such vessels or things must be returned to port and transferred to the most senior police officer. See *also generally* Fisheries Regulations 2010 § 31.

¹⁸⁵ Fisheries Act § 9.

¹⁸⁶ *Id.* § 12.

¹⁸⁷ *Id.* §§ 13, 4, 5, 6, 17.

¹⁸⁸ *Id.* § 14.

¹⁸⁹ Fisheries Regulations 2010 § 29.



4.2 Recreational fishing

Recreational fishing is a popular activity in Bermuda, carried out by Bermudians both from shore and vessels and by tourists, primarily on charter boats.¹⁹⁰ Bermuda law governs recreational fishing through the Fisheries Act and regulations. These authorities require licencing and/or registration only in limited circumstances, but require fishermen to abide by restrictions on where and how fishing can occur.

As discussed in Section 4.1.1 of this report, fishermen are persons fishing for reward or financial gain, including those operating and serving as crew on charter vessels. Recreational fishermen fishing for consumption or sport—whether or not they have Bermudian status—do not fall within this definition and therefore are not subject to licencing and registration under the Fisheries Act. However, any attempt to sell fish caught “recreationally” or take on charters triggers licencing and registration requirements, and purchase or sale of such fish without licence and registration is unlawful.¹⁹¹ Nonetheless, interviews suggest that roadside sales by unlicensed fishers are not uncommon, though they rarely result in charges or successful prosecution.

While not subject to general licencing and registration requirements, recreational fishermen must obtain a licence for certain activities (Table 6). Most types of restricted activity licences (e.g., use of fixed gear, dredge, trawl, and longlines) are not available to recreational fishermen, but spearfishing and lobster licences are available to any person.¹⁹²

Recreational fishers are subject to all of the area, species, and gear restrictions described in Section 4.1.2 of this report. These include not only restrictions based in the Fisheries Act and Regulations, but also those under the Protected Species Act and Coral Reefs Act, among others. Recreational users are also subject to a few restrictions under the Fisheries Act that do not apply to registered fishermen. The Fisheries Regulations provide that it is an offence for any person, other than a registered fisherman, to use a net other than a cast net less than eight feet in diameter¹⁹³ or to possess more than 30 lane, silk, or whitewater snapper.¹⁹⁴

The use of a vessel for recreational fishing does not require a fishing vessel licence, unless it is a charter vessel. However, recreational vessels must still be registered in the same fashion as vessels and boats used for other recreational purposes, as described in Section 4.4.1 of this report.¹⁹⁵

¹⁹⁰ Research suggests that annual recreational fishery landings are nearly two-thirds of commercial fishery landings, implying that “the collective impact of recreational fishing on Bermuda’s marine resources is quite high.” Joanna Pitt & Tammy Trott, “Insights from a Survey of the Recreational Fishery in Bermuda,” Proceedings of the 65th Gulf and Caribbean Fisheries Institute 254 (2013), at http://www.gcfi.org/proceedings/sites/default/files/procs/GCFI_65-49.pdf.

¹⁹¹ See Fisheries Regulations 2010. § 18.

¹⁹² *Id.* §§ 16, 22.

¹⁹³ *Id.* § 14.

¹⁹⁴ *Id.* § 15.

¹⁹⁵ Registration of Boats Regulations § 3.



4.3 Aquaculture

As Bermuda imports the majority of its seafood, aquaculture may provide an opportunity to support a domestic economy and promote food security. While no marine aquaculture exists in Bermuda at this time, some producers have expressed interest in developing the sector through integrated shellfish and kelp farming and, potentially, other species,¹⁹⁶ and DEP indicates that pilot projects have been undertaken in the past.¹⁹⁷ Several laws apply to aquaculture, including the Fisheries Act and regulations, Protected Species Act, and Public Lands Act. However, aquaculture is not currently covered by the Development and Planning Act as it does not touch the shore. As such, planning permission is not required to install an aquaculture facility.

4.3.1 Fisheries Act and Regulations

The Fisheries Act authorizes the Minister to issue regulations “for the establishment, regulation and control” of aquaculture operations and preserves.¹⁹⁸ While no specific regulations have been promulgated for this purpose to date, several provisions in both the Act and the Fisheries Regulations 2010 limit aquaculture activity.

First, although “fishing” is not defined under Bermuda law, it is likely that this term includes aquaculture. “Fish” is defined to include “marine organisms of all descriptions, whether alive or dead,” and thus appears to encompass not only fish, but also invertebrates, sea vegetables, and other organisms.¹⁹⁹ Aquaculture clearly constitutes “taking” of fish as defined in the Act,²⁰⁰ and any “taking” of fish would fall under any reasonable definition of “fishing.” As a result, vessels used in aquaculture are fishing vessels subject to licencing, their operators need to register as fishermen, and their gear is subject to regulation. Under these regulations, aquaculture gear is also considered fixed fishing gear²⁰¹ and therefore requires a licence from the Director of DEP or the Chairperson of the CFC.²⁰² Aquaculture is specifically listed as a use for which fixed gear fishing will be authorized.

As a type of commercial fishing, aquaculture will be subject to all restrictions on the time, place, and manner of fishing. For example, aquaculture would be prohibited in seasonal closed areas, and aquaculture of species protected or restricted under the Fisheries Act (such as certain grouper) would be prohibited. However, the Director may issue permits authorizing the take, sale, purchase, or possession of any fish, or fish of a specified description, size or weight, for the purpose of aquaculture.²⁰³ These permits may be justified where a restriction does not serve a meaningful conservation purpose

¹⁹⁶ See Greenwave, Greenwave Restorative Ocean Farming Proposal (Jan. 30, 2014) (on file with ELI).

¹⁹⁷ Bermuda. Ministry of Health, Seniors and Environment Department of Environmental Protection (DEP) Marine Resources Section, Aquaculture Policy, at 1 (2011).

¹⁹⁸ Fisheries Act § 13.

¹⁹⁹ *Id.* § 1.

²⁰⁰ *Id.* (“‘taking’ in relation to any fish includes injuring, capturing, killing, destroying, collecting and being in possession of any such fish”).

²⁰¹ Fisheries Regulations § 2 (defining “fixed fishing gear” as “any . . . type of stationary gear that is used for taking fish”).

²⁰² *Id.* § 6.

²⁰³ Fisheries Act § 18.



when applied to aquaculture; for example, sale of fish below the minimum size from aquaculture may be desirable for market reasons and may not raise conservation concerns.

DEP has developed an aquaculture policy to guide its future permitting of aquaculture. It will require marine operators to demonstrate experience; to use native species (non-native species will be allowed only after demonstration that they pose a low risk of impacting native species, and they cannot be cultured in open environments); to use native wild broodstock without causing overfishing; to protect habitat, including by carrying out a baseline ecological assessment; to follow an approved management plan that includes monitoring, standard operating procedures, and an emergency plan; to not create barriers to the movement of wild organisms or disrupt navigation; and to address health management and disease control.²⁰⁴

4.3.2 Protected Species Act

Aquaculture operations may seek to culture species that are protected under the Protected Species Act or (as noted above) the Fisheries Act (see Section 3.3 of this report). Culture of protected species is normally prohibited, although in some cases (e.g., coral rehabilitation) it may benefit the species and in others it may not threaten the species. In such instances, both the Protected Species Act and Fisheries Act provide specific authority for the Minister to issue a licence or permit authorizing aquaculture.²⁰⁵

4.3.3 Public Lands Act

Aquaculture equipment is generally anchored to the seabed so that it is stable and will not break away. As it is semi-permanently attached to the seabed, a lease from the Minister of Public Works, via the estates section, is required pursuant to the Public Lands Act 1984. The process for obtaining this lease is described in Section 3.1.2 of this report.

4.4 Recreational boating

Recreational boating is a large and growing activity in Bermuda, with the number of registered vessels increasing 15% in the last five years.²⁰⁶ Recreational boating encompasses activities such as recreational fishing (not for reward or hire), sailing, and powerboating.²⁰⁷ Each boat used for these and other activities must be registered and their operators must comply with restrictions on use as described below.

Under the Marine Board Act 1962, the Minister responsible for marine and ports (currently, the Minister of Tourism Development and Transport) has general management responsibilities for maritime matters,²⁰⁸ including the authority to make regulations regarding boat travel, registration, and licensing.²⁰⁹ The Minister has used this authority to issue regulations and notices requiring registration

²⁰⁴ See generally DEP, Aquaculture Policy (2011).

²⁰⁵ Protected Species Act 2003 § 8; Fisheries Act § 18.

²⁰⁶ Making the Case for MSP in Bermuda, *supra* note 2, at 10.

²⁰⁷ See *id.* at 37.

²⁰⁸ Marine Board Act § 6.

²⁰⁹ *Id.* §§ 11, 78.



of boats as well as to regulate how and where they can be used. In addition, this authority provides the basis for governance of docks, moorings, and marinas where boats are stored when not in use.

4.4.1 Registration

Recreational vessel registration requirements are established by the Registration of Boats Regulations, issued by the Minister under the Marine Board Act. Under these regulations, it is unlawful to use or keep in Bermuda territorial waters any unregistered boat unless that boat is excepted from this requirement.²¹⁰ Excepted boats include vessels in the service of Her Majesty or other recognized foreign powers; vessels in transit or visiting Bermuda; fishing vessels; licenced “island boats;” rafts and model boats (including lifeboats); flying boats; and boats for re-sale owned by a dealer.²¹¹ These exceptions will cover some recreational boats, as well as floating docks, but the majority must be registered.

4.4.2 Operation and area restrictions

Recreational boats are subject to restrictions on when, where, and how they may be operated. These require boat operators to obey speed limits²¹² and right of way and safety requirements.²¹³ Special provisions apply to powered craft (including restrictions on water skiing and related activities).²¹⁴

Boating is subject to area restrictions, chiefly created by the Minister by notice as authorized under the Marine Board Act 1962 for control of vessel traffic in ship channels.²¹⁵ The Marine Board (Prohibited Areas) Notice 2010 prohibits boats or ships in specified areas, including: Clearwater Beach, Cooper’s Island, certain areas near Dolphin Cove, within 20 meters of certain docks in Hamilton, within 100 meters of the hull of a ship in St. George’s, and within 50 meters of a ship in other areas.²¹⁶ Following a break out of the Westgate Correctional Facility, rules were passed to prohibit all marine traffic (including boats and personal watercraft) within 50m of the shoreline surrounding the Facility (Figure 6).²¹⁷

In addition to area restrictions administered by the Department of Marine and Ports Services under the Marine Board Act 1962, boating is restricted in other areas under other laws:

- The National Parks Act prohibits operation of “any model power boat” and use or storage of vessels (including “power-craft, row boats, sailboats, windsailboards, surfboards, canoes and kayaks”) in a National Park, except where expressly permitted.²¹⁸

²¹⁰ Registration of Boats Regulations § 3.

²¹¹ *Id.* § 4. “Island boats” are boats, other than rowboats, operated for hire or reward in Bermuda. Marine Board (Island Boats) Regulations 1965 § 1.

²¹² Marine Board (Declaration of Speed Limit for Boats) (Mariners) Notice 2001 § 2 (limiting speed within 100 meters of shore to five nautical miles per hour and prohibiting a wake, except in certain areas).

²¹³ See generally Marine & Ports (Navigation) Regulations 1967, S.R&O 29/1967 (requiring pilots or persons in charge of boats to give way to and keep clear of ships and to maintain a reasonable speed and safe distance from other boats).

²¹⁴ Power-Craft Regulations 1960 § 5.

²¹⁵ Marine Board Act § 10(1) (aa).

²¹⁶ Marine Board (Prohibited Areas) Notice 2010 § 2.

²¹⁷ See Marine Board (Prohibited Area) (Westgate Correctional Facility) Notice 2013.

²¹⁸ Bermuda National Parks Regulations 1988, BR 49/1988 §§ 3, 10.



- The Protected Waters (Castle Harbour) Act prohibits entry on the waters or tidal lands in Castle Harbour, as described in the Schedule to that Act, so long as the protected area is clearly marked.²¹⁹
- The Minister responsible for conservation services may restrict vessel traffic in critical marine areas designated under the Protected Species Act,²²⁰ but no critical areas have been designated to date.
- The Bermuda National Trust Regulations prohibit unauthorized boating on Trust Property.²²¹

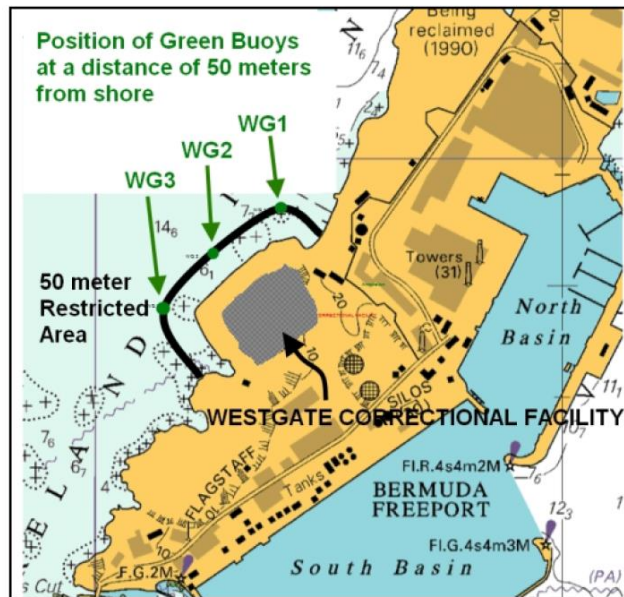


Figure 6. Westgate Correctional Facility prohibited area.²²²

4.4.3 Dock, mooring, and marina regulation

Recreational boats may be stored in the water at a dock, mooring, or marina, each of which is regulated, subject to leasing by the Department of Public Lands and Buildings, and may further be subject to planning permission. As space for protected moorings is limited, allocation and regulation questions are important elements of marine spatial planning in the nearshore waters of Bermuda.

Under the Marine Board Act 1962, the Minister responsible for marine and ports services and the Ports Authority are jointly responsible for anchoring, berthing, and mooring of boats and ships²²³ in Bermuda, and both may issue regulations as needed to discharge their responsibilities. The Act authorizes the Minister to make regulations, among other things, “in respect of the control and siting of all buoys and

²¹⁹ Protected Waters (Castle Harbour) Act 1951, 1, at sched. These waters include dredged areas near the airport runways.

²²⁰ Protected Species Act 2003 § 6.

²²¹ Bermuda National Trust (Open Spaces and Property) Regulations 1975, SR&O 75/1975 § 10.

²²² Marine Board (Prohibited area) (Westgate Correctional Facility) Notice 2013, BR 99/2013, at sched.

²²³ This section presumes that all recreational vessels are boats, not ships, as the latter are defined as sea-going craft rather than those “usually plying in the waters of Bermuda.” Marine Board Act 1962 § 2. “Boat” is defined as any craft that is not a ship. *Id.* Any vessel defined as a ship would be subject to the provisions detailed in Section 4.9 of this report.



moorings in the territorial waters of Bermuda.²²⁴ In issuing a licence for a mooring pile or floating dock pursuant to any such regulations, the Minister must consult and act in accordance with the advice of the Minister responsible for planning (currently, the Minister of Home Affairs).²²⁵

The Act also provides that the Ports Authority “shall regulate” the berthing, anchoring, and mooring of all ships and boats within the ports of Bermuda.²²⁶ “Ports” includes “all harbours, anchorages and moorings within the territorial waters of Bermuda and Hamilton docks, St. George’s docks and the Freeport.”²²⁷ This authority encompasses any dock, mooring, or marina in Bermuda. In practice, the Ports Authority focuses on managing developed harbours but consults on planning permission for vessel berthing when required.

A number of regulations relevant to docking and mooring have been issued. Notably, the Marine Board (Moorings) Regulations 2010 require an annual licence from the Minister to install or use a mooring (including a pile or floating dock).²²⁸ These requirements apply not only to single use docks and moorings, but also to marina developments. A licence may be subject to conditions.²²⁹ The regulations also authorize the Minister to designate by order areas where mooring is prohibited.²³⁰ Sixteen areas are prohibited to mooring pursuant to this authority.²³¹

The Minister responsible for marine and ports services issues licences, although no licence can issue without a written indication of no objection from the Minister responsible for planning.²³² Many of these projects, including marinas, floating docks, and facilities connected to the land, are also subject to planning permission and therefore approval from the DAB will be required. EIA and preparation of an EIS is also likely to be required for marinas. In practice, the Department of Planning will serve as the lead agency for marina, dock, and mooring approval through this planning permission process.²³³

Additional approval from the Ports Authority is required, under the Anchoring and Berthing Regulations, to build “any wharf, pier, jetty, or other structure” below the high water mark in a harbour.²³⁴ While the term harbour does not appear to be defined in the Act or regulations, it is narrower than “ports” and

²²⁴ *Id.* § 103.

²²⁵ *Id.*

²²⁶ Marine Board Act 1962 § 70.

²²⁷ *Id.* § 2.

²²⁸ Marine Board (Moorings) Regulations 2000 § 2. “‘Mooring’ means a device which is used to secure a boat or a ship in a fixed location and includes a mooring pile and a floating dock.” A floating dock “means a floating structure—which is attached to the foreshore or to the bed of the sea; to which access is provided from the foreshore; and to which a boat or a ship may be moored or secured.” *Id.*

²²⁹ *Id.* § 5.

²³⁰ *Id.* § 9.

²³¹ Marine & Ports Authority (Prohibited Areas for Mooring) Notice 1993, BR 49/1993 § 2.

²³² Marine Board (Moorings) Regulations 2000 § 6. For more on the regulations, policies, and procedures governing local small boat moorings in Bermuda, see *generally* Department of Marine and Ports Services, Mooring Policy (undated) (on file with ELI); and Department of Marine and Ports Services, Moorings Report to the Ports Authority (29 April 2003) (on file with ELI). Only a Bermuda resident may own a mooring, the need for the mooring must be demonstrated, and a mooring is licensed for the size of the boat to be accommodated. *Id.* at 2.

²³³ *Id.*

²³⁴ Marine & Ports Authority (Berthing & Anchoring) Regulations 1967 § 9.



likely applies only to managed harbours, including those listed in the Marine and Ports (Prohibited Areas for Mooring) Notice 1993. The Ports Authority also has control over capital works, and extension or improvement at Hamilton, St. George's, or Freeport docks must have Ports Authority Approval.²³⁵ However, the Corporation of Hamilton, the Corporation of St. George's, and the West End Development Corporation (WEDCO)²³⁶ must "maintain, supervise and operate their respective docks efficiently and safely and [] provide the funds and labour necessary" for such activities.²³⁷ The municipalities are responsible for port dues and wharfage at their docks.²³⁸

As discussed in Section 3.1.2 of this report, activities that encroach on the seabed or foreshore require a licence from the Department of Works and Engineering. Moorings, docks, and marinas all require public land leases, and in practice the Department issues leases just short of 21 years where feasible so that approval from the legislature and Cabinet are not required. However, marinas may require longer leases for economic reasons, and a term between 21 and 121 years may be negotiated on a case-by-case basis.

4.5 Recreational swimming

Swimming is an important recreational activity for Bermudians. It is not directly regulated under the laws of Bermuda, but the law does affect where it may occur through land ownership rules, area restrictions, and water pollution control laws.

Bermuda property law affects where swimming occurs. Beaches, like other lands, can be privately owned, and in practice many Bermuda beaches are held by private entities. The foreshore—the land between high and low tide—is public by default, however. While leases and sales of these areas are allowed by Bermuda law, such transactions are rare. As a result, the public generally may access and swim in areas below the high water mark. The public may also have a right to access these areas, to the extent that the Crown's tenure over the foreshore and seabed is limited by public rights of use for swimming. Such rights are not explicitly established in statute or recent case law, however. In practice, access is provided in some places.

Swimming is prohibited in certain areas, largely as a consequence of general area prohibitions provided in the following laws:

- The Bermuda National Trust Act prohibits bathing in waters on Trust Property without authorization.²³⁹

²³⁵ Marine Board Act 1962 § 72.

²³⁶ Under the West End Development Corporation Act of 1992, the Corporation "is to manage and develop all designated land in the scheduled area with a view to the progressive improvement of the social and economic conditions obtaining there." West End Development Corporation Act of 1992 § 4. These areas are defined as: "Watford Island, Boaz Island, Ireland Island South and Ireland Island North, together with those small islets forming the Crawl off Ireland Island South, and also the North and South Basins and the breakwaters thereto," in addition to waters in Great Sound defined in the Act. *Id.* at sched. Powers of the Corporation include managing land over which it has control, to enter into contracts, and to acquire/hold/sell land.

²³⁷ Marine Board Act § 73.

²³⁸ *Id.* § 75.

²³⁹ Bermuda National Trust Regulations § 10.



- The Bermuda National Parks Regulations 1988 prohibit entry into parts of designated protected areas that are closed to public access by notice.²⁴⁰
- The Protected Waters (Castle Harbour) Act prohibits entrance on the waters or tidal lands in Castle Harbour,²⁴¹ and, as a consequence, swimming is not allowed in the area.

In other areas, swimming is not advised due to sewage outfalls and pollution concerns. For example, currents pushed sewage outfalls back towards south coast beaches in 2014. Such sewage outfalls may pose a public health risk. The Department of Health has general control over hygiene and sanitation relating to bathing beaches, among other locations.²⁴² Under this authority, it may close beaches where necessary to protect public health.

4.6 Diving and snorkelling

Diving and snorkelling are important recreational, tourist, and commercial activities on the Bermuda Platform. In addition to being an important economic driver, diving for entertainment is “often synergistic with marine conservation as the protection of the reef and shipwrecks allows for the promotion of non-destructive dives around the Bermuda platform.”²⁴³

Diving services for hire are governed by the Minister responsible for marine and ports services pursuant to regulations issued under the Marine Board Act 1962.²⁴⁴ Recreational and commercial diving practices are governed by the same Minister under regulations issued pursuant to the Merchant Shipping Act 2002. In addition, diving of any kind is subject to area designations under several Acts.

4.6.1 Diving services

The Marine Board (Diving) Regulations 1997 establish licencing requirements for all dive instructors and guides acting for hire or reward. No person can operate a diving service²⁴⁵ or offer services as a diver²⁴⁶ without the appropriate diving licence from the Minister through the Department of Marine and Ports Services.²⁴⁷ These requirements apply to scuba and helmet diving and to snorkel operations.²⁴⁸

The senior dive instructor on a “dive operation” (i.e., a commercial dive) is responsible for the safety of participants and for flying a diving flag during dive operations.²⁴⁹ Vessels are limited to 5 knots within

²⁴⁰ Bermuda National Parks Regulations § 3.

²⁴¹ Protected Waters (Castle Harbour) Act 1951, 1, Schedule.

²⁴² Public Health Act 1949 § 167. The Department of Health follows the US EPA Recreational Water Quality Criteria for Marine Water. *See, e.g.*, Bermuda Seawater Monitoring Programme, at <http://www.arcgis.com/home/item.html?id=4283f889fc9c4bbd8a9c0d63a2f21176>.

²⁴³ Making the Case for MSP in Bermuda, *supra* note 2, at 37.

²⁴⁴ Marine Board Act § 102.

²⁴⁵ Marine Board (Diving) Regulations 1997 § 2 (defining “diving service” as “any trade or business offering instruction in diving or in the use of diving equipment”).

²⁴⁶ *Id.* (defining “diver” as a person who “for hire or reward acts, or offers his services, as a diving instructor or as a diving guide”).

²⁴⁷ *Id.* §§ 3-4.

²⁴⁸ *Id.* § 2 (defining “diving equipment” to include snorkels, fins, and face masks).

²⁴⁹ *Id.* §§ 5-6.



100m of any vessel flying a diving flag.²⁵⁰ Dive operations may be prohibited or restricted in areas declared by the Minister by notice in the *Gazette*.²⁵¹ Dive operations are also subject to the Code of Safe Diving Practice issued by the Minister under the regulations,²⁵² which covers, among other things, boat and underwater operations, including mooring and anchoring provisions.²⁵³ The Code is not legally binding, but failure to adhere to it is admissible in judicial and other proceedings.²⁵⁴

In addition to diver and dive operation licencing, boats used for hire or reward must be licenced under the Marine Board (Island Boats) Regulations 1965.²⁵⁵ Under these regulations, Island Boats must be inspected for safety,²⁵⁶ and no Island Boat may carry passengers for hire or reward without a licenced pilot in charge.²⁵⁷

4.6.2 Diving not subject to Marine Board (Diving) Regulations

Most “diving projects” not covered by the Marine Board (Diving) Regulations are subject to the Merchant Shipping (Diving Safety) Regulations 2005, which apply in Bermuda to commercial dives—those from a craft controlled by the diving contractor but that are not subject to the Marine Board (Diving Regulations)—and dives without a dive contractor, but from a craft and using dive equipment provided by the owner or master for profit or gain (e.g., scientific, archaeological, or recreational dives where a vessel and dive equipment are hired but the vessel owner does not participate in the dive).²⁵⁸ Dives subject to these regulations place duties on the owner and master of the craft as well as on the diving contractor and appointed diving supervisor, including creation of a diving project plan and competence and fitness requirements for participants.²⁵⁹ Vessels used in dives pursuant to these regulations will generally be Island Boats and subject to the same licencing provisions as those discussed above.

The majority of dives are likely to be subject to either licencing under the Marine Board (Diving) Regulations or Merchant Shipping (Diving Safety) Regulations, but dives undertaken using private equipment on private craft are not. These dives can occur without licencing or other provisions, other than appropriate vessel registration, as discussed in Section 4.4.1 of this report.

4.6.3 Area restrictions

In addition to prohibited and restricted areas established by the Minister and applicable to dive operations, the Historic Wrecks Act and the Fisheries Act provide authority for area restrictions that can affect where commercial or recreational diving and snorkelling can occur.

²⁵⁰ *Id.* § 6.

²⁵¹ *Id.* § 12.

²⁵² *Id.* § 19.

²⁵³ See generally, Department of Marine and Ports Services, The Code of Safe Diving Practice, at <http://www.seaexpress.bm/Documents/BaM/THE%20CODE%20OF%20SAFE%20DIVING%20PRACTICE.pdf>.

²⁵⁴ Marine Board (Diving) Regulations 1997 § 19(2).

²⁵⁵ Marine Board (Island Boats) Regulations 1963 § 1.

²⁵⁶ *Id.* § 5.

²⁵⁷ *Id.* § 24.

²⁵⁸ Merchant Shipping (Diving Safety) Regulations 2005 § 3.

²⁵⁹ See generally Merchant Shipping (Diving Safety) Regulations 2005.



Under the Historic Wrecks Act 2001, the Custodian of Historic Wrecks must classify all known wrecks and marine heritage sites as “open” or “restricted” to recreational use by divers.²⁶⁰ Once classified, each wreck or site is identified with either green or red submarine markers to indicate its classification.²⁶¹

Diving at a restricted site without a licence issued by the Custodian is an offense punishable by a \$5,000 fine.²⁶² A licence can be issued to investigate or conduct research at a wreck or site, including for a pre-disturbance survey, research at a restricted site, or “work” at an open site.²⁶³

The Fisheries Act provides protections for diving at sites popular for viewing natural history. As described in Section 4.1.2 of this report, the Minister responsible for fisheries has established 29 protected areas 300-1000 metres in diameter, denominated “dive protected sites,” in which fishing is prohibited and diving thereby encouraged (see Figure 5).

Additional laws provide authority that could be used to set aside areas where diving is encouraged or restricted. While we are not aware of existing relevant restrictions, these authorities include the National Parks Act, which authorizes restrictions in protected area management plans, and the Protected Species Act, which could restrict access to designated critical habitat areas.

4.6.4 Marine habitat enhancement structures

Marine habitat enhancement structures (MHES), or artificial reefs, are popular in Bermuda as a way to both dispose of end-of-life vessels and to enhance dive opportunities by providing areas where fish and other organisms will congregate. Placement of MHES on the seabed is complex and requires approval from multiple departments.

The United Kingdom Food and Environment Protection Act 1985²⁶⁴ governs deposits in the sea, including but not limited to scuttling of vessels. It applies in relevant part to overseas territories pursuant to the Environment Protection (Overseas Territories) Order 1988,²⁶⁵ which is implemented by DEP in Bermuda. The Order requires a licence from the Governor to scuttle a vessel or make other deposits of substances or articles in the sea or under the seabed, unless exempted by the Governor.²⁶⁶ According to the 2014 DCS Marine Enhancement Structure Policy, the Governor has delegated this authority to the DEP, which issues licences and enforces the act; as a result, DEP approval is required to place any MHES in Bermuda waters. For additional information on licencing, see Section 4.12.2 of this report.

Section 22 of the Public Lands Act also applies to placement of MHES in Bermuda. Under this section, written consent of the Minister responsible for public lands is required to “deposit any object or any materials” on the bed of the sea (see also Section 3.4). Deposit of a vessel or other MHES also may

²⁶⁰ Historic Wrecks Act §§ 6, 2.

²⁶¹ *Id.*

²⁶² *Id.* § 9.

²⁶³ *Id.* § 8.

²⁶⁴ United Kingdom Food and Environment Protection Act 1985 ch.48, as amended.

²⁶⁵ Environment Protection (Overseas Territories) Order 1988 No. 1084 (extending Parts II and IV of the Act to overseas territories).

²⁶⁶ *Id.* at sched. 1 § 5.



constitute occupation of the seabed that triggers a need to obtain a lease or other approval from the Minister as discussed in section 3.1.2 of this report.

Licensing or other approvals under one or both of these authorities is likely to include consultation with DCS, which lacks direct regulatory authority, but in practice will play an important advisory and stakeholder convening role. In 2014, DCS issued a Marine Enhancement Structure Policy to “guide the evaluation of marine habitat enhancement structure proposals in Bermuda” on the Bermuda Platform.²⁶⁷ The Policy provides that creation of an artificial reef will not be supported “unless it has significant education, research, recreation, economic and/or resource management potential.”²⁶⁸ The policy recognizes seven acceptable uses for these structures, including for commercial and sport fisheries and stock enhancement; recreational diving; environmental purposes and habitat; and scientific research.²⁶⁹ These are contrasted with unacceptable uses, such as disposal of waste products as a principal aim (e.g., tires); attempting to increase catch of certain fish species absent scientific evidence that habitat is limiting population size; and placement that would put persons or property in danger, or that would result in the destruction of or damage to fish, wildlife, natural habitat, or cultural heritage (known and potential).²⁷⁰

The Department of Marine and Ports Services is also deeply involved in vessels that become MHES, in part as these vessels are by definition less than seaworthy and may pose a risk to ports and harbours. As described in the DCS policy, the Department has traditionally prepared vessels for scuttling in partnership with local dive shops and with private funding. The Department will also be consulted on the location of the vessel to ensure that it will not pose a hazard to navigation, pursuant to its authority under the Marine Board Act 1962 and associated regulations (see Section 4.9 of this report).

4.7 Cultural heritage

Marine cultural heritage is an important component of Bermuda’s nearshore marine environment. With 150 shipwrecks and more to be discovered, heritage sites are a tourist draw, an element in Bermuda’s maritime heritage and culture, and an important scientific and archaeological resource.²⁷¹ The Historic Wrecks Act governs access to and use of these resources “to preserve, protect and safeguard Bermuda’s underwater cultural heritage.”²⁷²

The Minister responsible for conservation services (currently, the Minister of Health, Seniors and the Environment) administers the Act through DCS and the Custodian of Historic Wrecks. The Historic Wrecks Authority, the members of which are appointed by the Minister, advises the Minister and the Custodian, including on the classification of wrecks and issuance of licences.²⁷³ Inspectors for

²⁶⁷ DCS, Bermuda marine enhancement structure policy: position statement and evaluation guidelines 1 (2014).

²⁶⁸ *Id.*

²⁶⁹ *Id.* at 17-18.

²⁷⁰ *Id.* at 18.

²⁷¹ Making the Case for MSP in Bermuda, *supra* note 2, at 36.

²⁷² Historic Wrecks Act, Preamble.

²⁷³ *Id.* §§ 3, 5.



enforcement of the Act include the Marine Police, Fisheries Wardens, the Custodian and Conservation Officers, but enforcement is difficult due to the large number of wrecks and limited manpower.²⁷⁴

Under the Act, the Custodian is responsible for marine heritage within 24 miles of Bermuda’s baseline and for controlling access to those wrecks and sites.²⁷⁵ The Custodian’s responsibility includes wrecks²⁷⁶ and “marine heritage sites,” which are submarine areas not known to contain a wreck but that contain or may contain historical artefacts.”²⁷⁷ As discussed in part in Section 4.6.3 of this report, the Custodian must classify all known wrecks and list them on the official Register of Wrecks, and must classify and identify the location of marine heritage sites.²⁷⁸ Wrecks and sites can be classified as “open” or “restricted” (“closed”) to use by recreational divers and must be marked by coloured submarine markers indicating their classification.²⁷⁹ Classification criteria are included in the DCS Marine Heritage Policy.²⁸⁰ In all cases it is unlawful to mark, remove, or otherwise interfere with, deal in, or possess a wreck or historic artefact,²⁸¹ as the Act vests all wrecks and historical artefacts in the Crown—and possession lies with the Minister.²⁸² Designation of a wreck or marine heritage site does not affect other activities that could affect the site, such as use of fishing nets.

The Custodian on the advice of the Authority is also responsible for issuing licences for access to wrecks and sites. The Custodian can issue a licence, subject to conditions, to: (i) carry out a non-invasive pre-disturbance survey to document the structure and location of wreck or other items; (ii) conduct research on a restricted wreck or site (including authorisation of removal of artefacts and remains); or (iii) conduct work on an open wreck.²⁸³

4.8 Utilities

The nearshore environment is an important resource for utility use, including for desalination, electricity plants, and telecommunications uses. Desalination utilizes seawater as a water source and discharges briny water back into the ocean. Electricity production likewise relies on the ocean for cooling and may use undersea cables or pipelines to deliver power throughout Bermuda. Telecommunications companies use the seabed for placement of undersea cabling both within Bermuda and to connect Bermuda to North America and Europe. The relevant laws governing construction and operation of industrial facilities and undersea cabling are summarized in this section, although they also are relevant to other uses relevant to nearshore MSP. In addition, uses and activities summarized elsewhere in this report—

²⁷⁴ *Id.* § 13; personal communication.

²⁷⁵ *Id.* § 1 (defining “waters of Bermuda” as waters within 24 nm of the baseline).

²⁷⁶ *Id.* (defining “wreck” as “the remains of any vessel found on the shores or in the waters of Bermuda which has been abandoned by its owner for at least 50 years”).

²⁷⁷ *Id.* § 6. “Historic artefact” means “flotsam, jetsam, lagan and any artefact found in the waters of Bermuda which is associated with a wreck or a marine heritage site and which is more than 50 years old.” *Id.* at 2.

²⁷⁸ *Id.* § 6.

²⁷⁹ *Id.*

²⁸⁰ Bermuda Wrecks Authority, Marine Heritage Policy § 7 (Mar. 2012).

²⁸¹ Historic Wrecks Act § 7.

²⁸² *Id.* § 10.

²⁸³ *Id.* § 8.



such as offshore energy production and marine transport, and marine pollution—are important for utility operations in Bermuda.

4.8.1 Utility facility construction and operation

Creation and operation of certain utility facilities requires both planning permission and often direct licencing from the Environmental Authority. Planning permission is required and may often require EIA and preparation of an EIS. In addition, where a facility (such as a desalination plant) qualifies as coastal development, input from the Department of Marine and Port Services and the Minister of Public Works is required (see section 3.2 of this report).

The Clean Air Act 1991 prohibits construction or operation of a “controlled plant” without permission from the Environment Authority.²⁸⁴ The Minister responsible for the environment—currently, the Minister of Health, Seniors and the Environment—is responsible for administration of the Act, appointment of the Authority, and issuance of rules and regulations guiding implementation.²⁸⁵

The Act defines electrical and steam plants, among many other industrial and some commercial facilities, as controlled plants subject to the Act.²⁸⁶ As a result, a construction permit is needed for new or modified facilities, and an operating licence is required to operate any such facility. These permits and licences both may include terms and conditions “whether or not related to” air contaminants.²⁸⁷ Construction permits can also demand changes in project size and location. Thus, Clean Air Act licencing and permitting conditions may go substantially beyond consideration only of stack emissions. The content of permits is influenced by public notice and comment, which is required by the Clean Air Rules 1993, and both permits and licences are likely to be issued only after consultation with other relevant ministries and departments, such as DCS.²⁸⁸

Discharge from operation of utility facilities is likely to also trigger requirements as a discharge of a pollutant. This may include both discharge of chemical and other substances as well as discharge of brine from desalination or thermal pollution. The Water Resources Act 1975 prohibits pollution or fouling of public water, including sea water. Any matter or substance “likely to affect the quality of public water or to cause injury whether directly or indirectly to . . . marine life” may violate this restriction.²⁸⁹ It is an offense to discharge such a pollutant, and the Minister responsible for the environment may issue a notice requiring a polluter to undertake pollution-prevention activities.²⁹⁰

²⁸⁴ Clean Air Act 1991 §§ 4, 7.

²⁸⁵ *Id.* §§ 11, 25. The Minister has issued the Clean Air Regulations 1993 under the Act.

²⁸⁶ *Id.* at First Schedule (also including as controlled plants, *inter alia*, cement and asphalt manufacturing, sand and gravel processing, sewage treatment and disposal, and incinerator facilities as well as any facilities running on internal combustion generators).

²⁸⁷ *Id.* §§ 6, 9.

²⁸⁸ Bermuda Clean Air Rules 1993 §§ 6-11.

²⁸⁹ Bermuda Water Resources Act 1975 § 34.

²⁹⁰ *Id.* § 29.



4.8.2 Undersea cables and pipelines

An estimated 50 km of undersea cables and pipelines currently exist in Bermuda's nearshore waters, and recent development proposals may increase that number substantially.²⁹¹ Undersea cabling and pipelines are addressed in UNCLOS. Under the Convention, countries have the sovereign right to regulate undersea cables in the territorial sea.²⁹² Beyond the territorial sea, all nations enjoy the freedom "of the laying of submarine cables and pipelines,"²⁹³ provided that delineation of the course of such cables and pipelines is subject to the consent of the coastal state.²⁹⁴ Under this regime, Bermuda's authority to regulate the location and position of undersea cables and pipelines within a proposed marine spatial planning area depends on the location and use of the cable or pipeline at issue.

Bermuda law governing undersea cables or pipelines is primarily drawn indirectly from laws governing operation and construction of utility infrastructure. Relevant licencing requirements include:

- **Water:** Freshwater pipelines in the marine environment (e.g., connecting supply between islands) are subject to the Water Resources Act 1975, which requires authorization from the Environmental Authority to construct "works," including pipelines.²⁹⁵
- **Electric:** A licence from the Minister responsible for energy (currently, the Minister of Economic Development) is required to produce or supply electric power. The Act does not directly require a licence for construction of electric cables, however.
- **Oil and Gas:** Petroleum products are governed by regulations under the Building Authority Act 1962. The Liquefied Petroleum Gases (Handling, Storage, Supply & Transport) Regulations 1988 govern transfer of liquid petroleum gas (e.g., propane) from tanker vessels to shore-based tanks. The regulations require the use of shutoff valves on pipelines for this purpose and bar the use of fuel docks for passenger or cargo transport.²⁹⁶ In addition, any bulk storage facility requires a licence from the Minister responsible for planning.²⁹⁷ Other petroleum products, such as fuel oil, are governed by the Building Authority (Petroleum) Regulations 1962, which require permitting by the Building Authority for a number of activities,²⁹⁸ but do not directly discuss pipelines. As a result, there appear to be no current laws or regulations governing fuel oil pipelines in Bermuda. Additional marine pollution regulations related to pipelines apply as discussed in Section 4.12 of this report.
- **Telecommunications:** Construction and operation of telephone and data systems, including undersea cables, are regulated by the Telecommunications Act 1986 or the Electronic

²⁹¹ Making the Case for MSP in Bermuda, *supra* note 2, at 12.

²⁹² See UNCLOS art. 2. Ships laying undersea cables do not qualify for "innocent passage" under UNCLOS, allowing the coastal state to regulate their activities. *Id.* at 18

²⁹³ *Id.* arts. 58 (EEZ), 79 (continental shelf). Bermuda's EEZ and continental shelf are coterminous, as discussed in Section 3.1.1 of this report.

²⁹⁴ *Id.* art. 79. Coastal states have greater rights over cables and pipelines used for exploring and exploiting the resources of the continental shelf. *Id.*

²⁹⁵ Water Resources Act 1975 §§ 4, 11.

²⁹⁶ Liquefied Petroleum Gases (Handling, Storage, Supply & Transport) Regulations 1988 § 7.

²⁹⁷ *Id.* § 5.

²⁹⁸ Building Authority (Petroleum) Regulations 1962.



Communications Act 2011. These authorities each require a license, certificate, or permit issued by the Regulatory Authority²⁹⁹ under policies developed by the Minister responsible for telecommunications (currently, the Minister of Economic Development) with the assistance of the Department of Telecommunications.³⁰⁰

Several laws of general application are relevant to undersea cabling. These include planning permission for any cable or pipeline that comes ashore in Bermuda (see Section 3.2 of this report), a lease or other approval for occupation of the seabed and foreshore (see Section 3.1.2 of this report), input from the Department of Marine and Ports Services pursuant to its general authority over maritime matters and dredging authority under the Marine Board Act 1962; and approval by the Department of Public Lands for dredging (see Section 3.4 of this report).

4.9 Passenger and cargo transport

Cargo and passenger shipping is an important economic sector in Bermuda—cargo vessels make weekly trips to and from the United States, providing nearly all of Bermuda’s goods, and the cruise ship industry is substantial—in 2012, for example, it comprised “157 cruise ship arrivals bringing over 378,000 passengers.”³⁰¹ A full explanation of the complex rules governing marine transport in Bermuda is beyond the scope of this report, but this section provides an overview of the primary authorities governing this sector and their potential intersection with nearshore MSP.

The Marine Board Act 1962, the Merchant Shipping Act 2002, and the Public Lands Act 1984, along with their associated subsidiary legislation, are the primary laws governing passenger and cargo maritime transport in Bermuda. These Acts are implemented across two Ministries, four Departments, the Ports Authority, and several local jurisdictions (Table 7). However, the Marine Board Act 1962 establishes that the Minister with responsibility for marine and ports services (currently, the Minister of Tourism Development and Transport) has “general management, control and supervision of all maritime matters in Bermuda,” and in practice the Department of Marine and Ports Services is the primary regulatory entity governing transport in Bermuda.

Table 7. Institutions relevant to marine transport in Bermuda.

Ministry	Institution	Act	Role
Tourism Development and Transport	Department of Maritime Administration	Merchant Shipping Act	Ship registration and regulations; marine pollution (including under international treaty obligations), waste, exclusion zones, and other merchant shipping issues
	Minister	Passenger Ships Act	Issue permits to ships entering and leaving Bermuda with passengers
	Department of Marine and Ports Services	Marine Board Act	“General management, control and supervision of all maritime matters in Bermuda,” including ship channels

²⁹⁹ Electronic Communications Act 2011 § 14; also, *see generally* Regulatory Authority Act 2011.

³⁰⁰ Telecommunications Act 1986 § 9. *See also* Electronic Communications Act 2011 §§ 13-17.

³⁰¹ Making the Case for MSP in Bermuda, *supra* note 2, at 38.



Ministry	Institution	Act	Role
			(including dredging), vessel navigation in territorial waters, dumping, and ferries
	Ports Authority	Marine Board Act	Consults with the Minister; regulates berthing, anchoring, and mooring of all ships and boats; controls and regulates ports and port dues; approval of dock extension or improvement at Hamilton, St. George’s, and Freeport
Public Works	Department of Works and Engineering	Public Lands Act	Permission to dredge or deposit on seafloor, except where activity authorized elsewhere
	Department of Public Lands	Public Lands Act	Lease or licence for occupation of crown lands of the foreshore and seabed
Local Authorities	Corporation of Hamilton, Corporation of St. George’s, West End Development Corp.	Marine Board Act	“[M]aintain, supervise and operate their respective docks efficiently and safely and [] provide the funds and labour necessary” for such activities; port dues and wharfage

4.9.1 Ship registration, licencing, permitting, and fees

All Bermuda ships—defined as all vessels used in navigation—other than fishing vessels and those owned by the Crown, must be registered under the Merchant Shipping Act 2002.³⁰² Under the Act, the Minister responsible for maritime administration (currently, the Minister of Tourism Development and Transport) may make regulations governing, among other things, registration of Bermuda ships and regulation of ships not registered in Bermuda while in Bermuda jurisdiction.³⁰³ Under the Act, the Department of Maritime Administration maintains the Bermuda Ship Registry, and the Minister has issued regulations providing for the safety of ships and crew, among other issues.³⁰⁴

Island boats plying Bermuda waters for hire or reward (other than fishing vessels), such as water taxis, also must be licenced under the Marine Board Act 1962,³⁰⁵ which authorizes the Minister responsible for marine affairs to make regulations regarding the registration, classification, and licensing of any boat used for carrying passengers or cargo or any other purpose.³⁰⁶ Under the Act, no unlicensed person may pilot a commercial passenger or cargo vessel, excluding Her Majesty’s ships (unless the vessel is less than 50 gross tons).³⁰⁷

³⁰² Merchant Shipping Act § 2 (defining “ship”), § 16 (defining “British ship” and “Bermuda ship”), § 24 (registration).

³⁰³ *Id.* § 3. The Light Tolls Regulations specify fees for different vessel classes. Marine Board (Light Tolls) Regulations 2013, Schedule I.

³⁰⁴ Merchant Shipping Act § 93.

³⁰⁵ Marine Board Act §§ 77, 89. The details of the licences and other requirements (such as inspection) are detailed in the Marine Board (Island Boats) Regulations 1965.

³⁰⁶ Marine Board Act 1962 § 78.

³⁰⁷ *Id.* §§ 48, 51.



The Marine Board Act 1962 and other Acts also provide for fees and payments for vessels arriving at Bermuda. All ships coming to anchor or berthing in Bermuda from “beyond the seas” must pay a light toll upon arrival (excluding Her Majesty’s ships, purely scientific ships, crafts usually plying in Bermuda’s waters, and ships exclusively traveling for pleasure and not for reward or hire).³⁰⁸ Ports Authority regulations also require vessels to pay wharfage,³⁰⁹ and all ships (excluding Her Majesty’s ships, purely scientific ships, crafts usually plying in Bermuda’s waters, and ships exclusively traveling for pleasure and not reward or hire) “lying moored, or at anchor, or at any dock or shore” must pay port dues to the Director of the Department of Marine and Ports Services.³¹⁰

Cruise ships are subject to special fees and permissions. The Passenger Ships Act requires passenger ships coming into or leaving Bermuda to obtain a permit from the Minister responsible for tourism.³¹¹ Those ships with casinos must also be licensed by the Minister pursuant to the Cruise Ships (Casinos) Act 2013.³¹²

The Department of Marine and Ports Services also operates a ferry service as required by the Marine Board Act 1962, with fares specified by regulation.³¹³ In addition, the Minister “may engage in the business of transporting by water passengers or goods to and from ocean-going ships.”³¹⁴

4.9.2 Shipping channels

Cargo and passenger ships require safe shipping channels through Bermuda’s reef system. The Bermuda Platform includes two primary shipping channels that must be kept clear (Figure 7), as well as the Town Cut, which is used to access St. George’s Harbour. While the channels must be maintained to keep them clear of shifting sands, a project to widen and deepen the North Channel is also in development in response to increasing sizes of cruise ships.³¹⁵

³⁰⁸ *Id.* § 25; Marine Board (Light Tolls) Regulations 2013.

³⁰⁹ Marine and Ports Authority (Ships Wharfage) Regulations 1969.

³¹⁰ Marine and Ports Authority (Port Dues) Regulations § 1.

³¹¹ Passenger Ships Act § 3.

³¹² Cruise Ships (Casinos) Act 2013 § 3.

³¹³ Marine Board Act 1962 §§ 93-97; Marine Board (Ferry Services) Regulations 1992 § 2.

³¹⁴ Marine Board Act § 96.

³¹⁵ Making the Case for MSP in Bermuda, *supra* note 2, at 38.

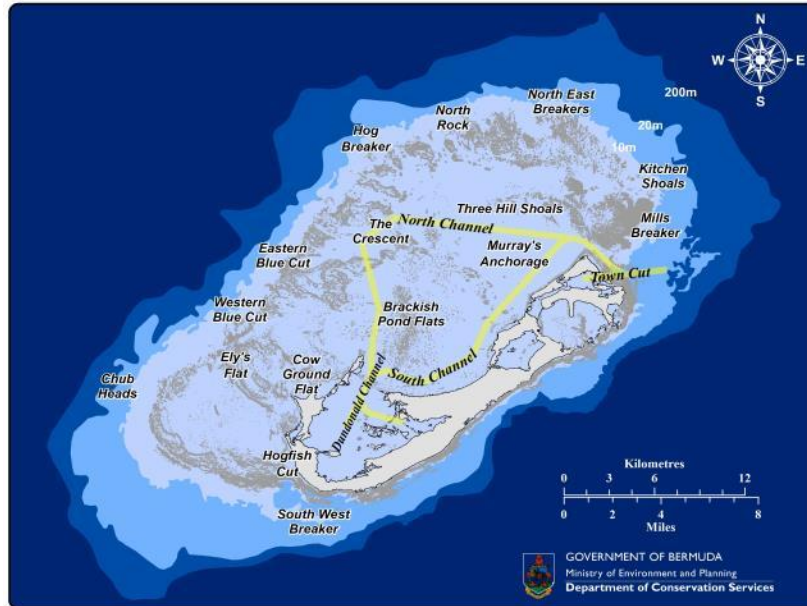


Figure 7. Shipping channels on the Bermuda Platform.³¹⁶

Channels must be buoyed and marked,³¹⁷ and their use is subject to regulations addressing channel traffic, discharges, right-of-way, and anchoring. For example, it is unlawful to exceed ten knots in or make any deposit or discharge in, or in the approaches or extensions to, the Head of the Lane Channel, Timlins Narrows, or Two Rock Channel, and anchoring is prohibited in Two Rock Channel except under duress.³¹⁸ Similar regulations apply to the “Main Ship Channel leading from Five Fathom Hole by way of the Narrows, Murray's Anchorage and the North Shore of Bermuda to Grassy Bay”³¹⁹ and the Dundonald and Staggs Channels.³²⁰

Improvement and maintenance of channels and ports is primarily a function of the Department of Marine and Ports Services under the Marine Board Act 1962, Channels Improvement Act 1937, and other laws (see also Section 3.4 of this report). Most port alterations or construction requires planning permission, after consultation and, for major port infrastructure, EIA and preparation of an EIS. However, dredging may not.

While in most cases dredging requires permission from the Minister with public lands authority (see Section 3.4 of this report), dredging for transport may not, as it is under the separate control of the Ministry of Tourism Development and Transport. The Minister is responsible for the administration of several laws authorizing dredging, including the Marine Board Act 1962, Minor Dredging Works Act 1945, and Channels Improvement Act, each of which is administered by the Department of Marine and Ports Services.

³¹⁶ Memorandum from Fred Ming, Director of DEP and Drew Pettit, Director of DCS to Marc Telemaque, Permanent Secretary, Ministry of Health, Seniors and the Environment (8 Apr. 2015), at 2.

³¹⁷ Marine Board Act 1962 § 19.

³¹⁸ See generally The Marine and Ports Authority (Hamilton Channels) Regulations 1967.

³¹⁹ See generally Marine Board (Navigation) (Ship Channels) (No. 2) Regulations.

³²⁰ See generally Marine Board (Navigation) (Ship Channels) (No. 3) Regulations.



The Marine Board Act 1962 gives the Minister general authority over the “management, control and supervision of all maritime matters”—including administration and control of ship channels and dredging thereof.³²¹ The Act requires the Minister to “employ all dredgers, rock breakers, and other craft, plant, machinery, and equipment intended or used for that purpose in deepening and widening of the channels and removal of the shoals and other obstacles to navigation” in Bermuda.³²² The Minor Dredging Works Act authorizes the Minister to dredge specific “bays and anchorages” listed in the Act,³²³ while the Channels Improvement Act requires the Minister to arrange for specific dredging and deepening projects (which are generally carried out by the Department of Works and Engineering), including: maintenance of existing ship channels; widening of the Port of Hamilton channel; and deepening of the Town Cut channel.³²⁴ The Minister is also responsible for the upkeep of the Pembroke Canal, with powers to clear out, deepen, or widen the canal.³²⁵

The Acts implemented by the Department of Marine and Ports are “other acts” that may allow the Minister of Tourism Development and Transport to authorize dredging without the permission of the Minister of Public Works pursuant to the Public Lands Act. The particular works authorized by the Channels Improvement Act and Minor Dredging Works Act are very likely to be “authorized” by those Acts.

4.9.3 Port operations

Ports are an essential component of cargo and passenger shipping, and the Marine Board Act 1962 establishes the Ports Authority, which is comprised of eleven members appointed by the Minister, to make most management decisions for Bermuda’s ports.³²⁶ The Minister may give the Ports Authority general directions, and the Minister may consult the Ports Authority in carrying out his or her duties under the Act.³²⁷ The Ports Authority regulates ports; mooring, anchoring, and berthing of boats and ships;³²⁸ and controls and regulates ports and port dues.³²⁹ Ports regulations address anchoring,³³⁰ dumping,³³¹ and dues and wharfage fees,³³² among other issues.

³²¹ Marine Board Act 1962 § 5. This responsibility is subject to other laws. *Id.*

³²² *Id.* § 22.

³²³ Minor Dredging Works Act 1945:53 § 1, schedule (authorizing dredging in the Foot of the Lane; Boss’s Cove; Jew’s Bay; Riddell’s Bay; Mills Creek; Fairylands Creek; Flatts Inlet; Hungry Bay; Devonshire Dock; Bailey’s Bay; and Burchall’s Cove).

³²⁴ Channels Improvement Act 1937 § 1.

³²⁵ Pembroke Canal Act of 1969 § 2.

³²⁶ Marine Board Act 1962 § 3.

³²⁷ *Id.* §§ 7, 8.

³²⁸ *Id.* § 70.

³²⁹ *Id.* § 76.

³³⁰ See generally Marine and Ports Authority (Berthing and Anchoring) Regulations.

³³¹ See generally Marine and Ports Authority (Dumping) Regulations.

³³² Marine and Ports Authority (Port Dues) Regulations. The Dangerous Vessels Act 1990 addresses “vessels which present a grave and imminent danger to the safety of any person or property or risk of obstruction to navigation.” § 3.



Any person entering the ports of Bermuda shall anchor or moor as directed by the Harbour Master.³³³ The Harbour Master may require ships to be moved and ships must comply with the Harbour Master’s general or specific directions.³³⁴ As noted in Section 4.13 of this report, the Ports Authority is responsible for maritime security in harbour zones, which are restricted areas requiring permission to enter during the period 30 minutes before to 30 minutes after the departure of a ship.³³⁵ The Marine Board (Prohibited Areas) Notice 2010 prohibits any ship or boat from approaching docks and ships in port as well as entering into listed dangerous areas.³³⁶ At the Dockyard Port, the Governor has authority to make regulations, and the Admiralty may appoint the Harbour Master.³³⁷

4.10 Conservation

A substantial number of general and specific Bermuda laws create (or provide for creation of) areas of the marine environment that are set aside for conservation, including but not limited to areas displayed in Figure 5. This section reviews these laws and institutions, as well as the extent to which each of these laws has been applied to create protected areas in the Bermuda nearshore environment.

Table 8. Conservation area classifications.

Conservation Area Type	Responsible Institution	Purpose in Marine Environment
National park protected area	Department of Parks	“[T]o safeguard and maintain plants and animals as well as geological, marine and other natural features or products,” to provide for the use of an area in its natural state, and to protect and maintain marine products ³³⁸
Bermuda National Trust land	Bermuda National Trust	“[T]o promote the permanent preservation for the benefit of Bermuda of lands,” ensuring “the preservation (so far as possible) of their natural aspect features and animal and plant life” ³³⁹
Coral reef preserve	Department of Conservation Services	To protect corals from harvest
Nature reserve	Department of Conservation Services	To protect areas “especially suited for the feeding and nesting of protected birds” ³⁴⁰
Protected species area	Department of Conservation Services	To protect “any critical terrestrial or marine habitat essential for the protection of a specified protected species” ³⁴¹
Environmental	Multiple Institutions	To protect land that “possess[es] natural features of

³³³ Marine Board (Anchoring and Berthing) Regulations § 3.

³³⁴ *See id.*

³³⁵ Maritime Security (Harbour Areas) (Restricted Zones) Order 2010 § 2; Maritime Security Act 1997 § 12.

³³⁶ *See generally* Marine Board (Prohibited Areas) Order.

³³⁷ Dockyard Port Act 1905 § 4.

³³⁸ National Parks Act 1986 § 5. Marine products are defined as “all forms of marine plants and animals, artifacts or handicrafts or traces thereof, wrecks, relics, or traces thereof, and all other material comprising tidal land within the marine area.” *Id.* § 2.

³³⁹ Bermuda National Trust Act §§ 2, 3.

³⁴⁰ Protection of Birds Act 1975 § 5.

³⁴¹ Protected Species Act of 2003 § 6.



conservation area		special environmental value,” related to (among other things) “beach protection; cave protection; habitat protection; other natural features protection” ³⁴²
Castle Harbour protected waters	Department of Conservation Services	To protect Castle Harbour

4.10.1 National Parks Act

The Bermuda National Parks Act 1986 established a national parks system that today is comprised of sixty-one protected areas of land and water designated by the Minister responsible for parks (currently, the Minister of Public Works).³⁴³ The Department of Parks administers the Act on behalf of the Minister, and the Act also establishes a National Parks Commission to advise the Minister “on matters affecting the long-term conservation and management” of the protected areas and on priority areas for acquisition or designation.³⁴⁴

These protected areas may include both land and water areas, including “tidal waters and tidal lands and the subsoil beneath such tidal lands and coastal waters”³⁴⁵—which has been implemented through creation of a 100-yard buffer in marine areas around terrestrial parks.³⁴⁶ Each protected area is managed and administered to protect, maintain, and enhance the natural or historic purpose for which it was specified, as set out in a classification system in the Act.³⁴⁷ A park may be established to accomplish one or more of four objectives:

- “to safeguard and maintain plants and animals as well as geological, marine and other natural features or products, and fragile ecosystems of national or international significance where strict protection is required and human use is generally limited to scientific research and educational purposes in order to protect and preserve these special or fragile natural resources;
- to provide for the use of the area in its natural state with a minimum of commercial and mechanized activity;
- to provide open space; [or]
- to protect and maintain historic monuments and buildings (including forts), marine products, sites of particular historic, archaeological, or aesthetic value and to so manage them so as to protect them from deterioration, and to provide public enjoyment, research and educational opportunities.”³⁴⁸

In practice, two types of protected areas have been established: nature reserves (Class A), “managed to protect special or fragile natural features and provide limited public access;” and Parks (Class B),

³⁴² Development and Planning Act 1974 § 28.

³⁴³ National Parks Act 1986, Second Schedule.

³⁴⁴ *Id.* § 10.

³⁴⁵ *Id.* § 3.

³⁴⁶ Personal communication.

³⁴⁷ National Parks Act 1986 § 3. While national parks can include private lands, marine parks are by default public, and provisions in respect of private land are not addressed here.

³⁴⁸ National Parks Act 1986 § 5.



“managed in a manner to encourage conservation and enjoyment of the natural, historic and educational features of these areas with a minimum of commercial activity.”³⁴⁹

The Department of Parks within the Ministry manages and administers each protected area and must maintain a National Parks Plan that includes “priorities and needs concerning acquisition, development, management and research of lands for protected areas.”³⁵⁰ The Director of Parks must also prepare a management plan for each protected area, after consultation with other Departments, to serve as a guide for activities in the Park.³⁵¹ Approximately 11 parks in Bermuda have established management plans.³⁵² Activities in a protected area must be consistent with the management plan and any regulations established by the Minister for the protected area, but the Minister may issue a permit for any unauthorized activity after consultation with the Commission.³⁵³ Without a permit, it is an offence to damage the environment in any designated protected area.³⁵⁴

The Bermuda National Parks Regulations 1988 spell out specific prohibitions and restrictions in protected areas. While these provisions are primarily targeted at small-scale and recreational activities on land, some are broadly worded, including a prohibition on taking any animal, including fish, and the use of model boats.³⁵⁵ Use of vessels is restricted and storage prohibited except where expressly permitted.³⁵⁶ Overnight mooring of vessels in designated camping areas within protected areas is one such permitted act.³⁵⁷

Under the Act, an authorized officer is a “police officer, park ranger, park warden, conservation officer or other officer of the Department,” and anyone designated as such by the Minister.³⁵⁸ A warrant is not required for an authorized officer to require the production of a permit, and they may seize property with reasonable grounds for believing an offense has been committed.³⁵⁹ Offenses are punishable by a \$1,000 fine or 3 months imprisonment, with second offenses double.³⁶⁰ As noted below, these provisions have been proposed to be amended.

Finally, it is important to note that while the National Parks Act is not intended to derogate from the Marine Board Act 1962, Wreck and Salvage Act 1959, or Fisheries Act 1972, these Acts and associated

³⁴⁹ National Parks Act 1986, First Schedule.

³⁵⁰ *Id.* § 8.

³⁵¹ *Id.* § 11. Such management plans must be reviewed and revised every 10 years.

³⁵² Personal communication.

³⁵³ National Parks Act 1986 §§ 12, 25. Among other things, the Minister may make regulations on fees for permits. Under the Regulations, all persons entering a protected area must pay the prescribed fee. National Parks Act Regulations § 15.

³⁵⁴ National Parks Act 1986 § 17.

³⁵⁵ National Parks Act Regulations § 3.

³⁵⁶ *Id.* §§ 3, 10.

³⁵⁷ National Parks Act § 2 (defining “camp” to include overnight mooring of a vessel); National Parks Act Regulations § 4 (prohibiting camping except in designated areas).

³⁵⁸ National Parks Act 1986 § 2.

³⁵⁹ *Id.* § 18.

³⁶⁰ *Id.* § 28.



regulations prevail over the National Parks Act.³⁶¹ Thus, where the Fisheries Act 1972 would allow fishing within a protected area, but the National Parks Regulations 1988 would bar that activity, the Fisheries Act would presumably prevail.

Bermuda lawmakers have for some time been considering amendments to the National Parks Act 1986. The draft Bermuda National Parks Amendment Act 2009 would have amended the Parks Act. While it is not in force and is likely to be amended before its eventual enactment, we note its provisions here for completeness. The amendment act would create three sub-types of parks: Amenity Parks, Marine Parks and Nature Reserves, and Recreational Parks, each of which would be managed by a different Department.³⁶² It would also enhance protections for historic artefacts in protected areas, other than artefacts protected under the Historic Wrecks Act 2001 (see Section 4.7 of this report). Enforcement provisions would also be strengthened by redefining “authorised officer” to mean a police officer and any other officer of a Department authorized in writing to carry out functions under the Act (and giving such officers all the powers of police when enforcing the Act); increasing penalties; and creating a ticketing system for violations.³⁶³

4.10.2 Bermuda National Trust

The Bermuda National Trust Act 1969 establishes the Bermuda National Trust to “to promote the permanent preservation for the benefit of Bermuda of lands,” ensuring “the preservation (so far as possible) of their natural aspect features and animal and plant life.”³⁶⁴ The Trust currently owns more than 250 acres of open space, “including Warwick Pond, Paget Marsh, Spittal Pond, Gladys Morrell Nature Reserve and Gilbert Nature Reserve.”³⁶⁵ It has an Environmental Conservation Office and Marine Environmental Committee, which along with other Committees works with other government entities to promote environmental stewardship.³⁶⁶

The National Trust is a membership organization³⁶⁷ managed by the Council of the Trust, which includes a President and 12 council members.³⁶⁸ The Council also may make regulations for administering the Trust, subject to approval by the Minister responsible for archives—currently, the Minister of Community, Culture and Sports.³⁶⁹ The Bermuda National Trust (Open Spaces and Property) Regulations 1975 set out the restrictions governing use of Trust lands.

The Trust has the power to acquire land by purchase, lease, or otherwise,³⁷⁰ including “any land which may be under water and any reefs within the territorial waters of Bermuda.”³⁷¹ It can also sell or

³⁶¹ *Id.* § 32.

³⁶² Bermuda National Parks Amendment Act 2009 § 2 (on file).

³⁶³ *Id.* §§ 2, 16.

³⁶⁴ Bermuda National Trust Act §§ 2, 3.

³⁶⁵ Environment and Conservation, Bermuda National Trust, at http://www.bnt.bm/Environmental_and_Conservation/environment_and_conservation.php.

³⁶⁶ *Id.*

³⁶⁷ Bermuda National Trust Act § 6.

³⁶⁸ *Id.* § 9. While a quasi-governmental entity, the Trust is not listed on the organizational chart in Figure 2.

³⁶⁹ *Id.* § 11.

³⁷⁰ *Id.* § 4.



otherwise devise lands unless the Council determines them to be inalienable.³⁷² Under the regulations, it is an offense to take sand and soil and harm vegetation and animals, pollute, boat, bathe, or moor in or on Trust property.³⁷³ Offenses are penalized by up to a \$250 fine.³⁷⁴

4.10.3 Coral Reef Preserves Act

The Coral Reef Preserves Act of 1966 establishes the North and South Shore Coral Reef Preserves (see Figure 5), which are administered by the Department of Conservation Services. The Act and these preserves were created primarily to stop the recreational harvest of corals for handicraft and jewellery. While this activity is no longer popular, and coral is now otherwise protected under the law, the Act remains in force.³⁷⁵ The Act prohibits removal, harm, or possession of marine flora and fauna, whether alive or dead, that is attached to the coast, seabed, or any reef.³⁷⁶ Offenses under the Act are punishable by up to a \$480 fine and 6 months imprisonment.³⁷⁷

4.10.4 Protection of Birds Act

Under the Protection of Birds Act 1975, the Minister responsible for conservation services (currently the Minister of Health, Seniors, and the Environment) may by Order, subject to the affirmative resolution of the Legislature, designate land as a nature reserve³⁷⁸ where it appears “especially suited for the feeding and nesting of protected birds” or otherwise important as a habitat for their preservation.³⁷⁹ DCS manages nature reserves on behalf of the Minister.

Several nature preserves have been established to date (Figure 8), including in Southampton Island (also known as Brangman's Fort), Horn Rock, Green Rock, Bird Rock, Idol Islet, Cock Rocks (2), Gurnet Rock, Tom's Rock, Rushy Island, Nonsuch Island, Castle Island, Charles Island,³⁸⁰ and unnamed islets located in Harrington Sound, the Great Sound and Hamilton Harbour used by the common tern.³⁸¹ Nature reserves are also established in Evans Bay and Spittal Pond by Order. Nature reserves include some waters (ponds and lakes) and several islands but do not appear to include any marine areas.

³⁷¹ *Id.* § 1.

³⁷² *Id.* §§ 4-5.

³⁷³ Bermuda National Trust Regulations §§ 2, 9, 10.

³⁷⁴ *Id.* § 26.

³⁷⁵ However, the bottom habitat itself is not protected. Personal communication.

³⁷⁶ Coral Reef Preserves Act 1966, as amended, §§ 1-3.

³⁷⁷ *Id.* § 3.

³⁷⁸ The term “nature reserve” is used both for Class A protected areas under the National Parks Act and areas designated under the Protection of Birds Act, and in fact the areas designated overlap in some cases.

³⁷⁹ Protection of Birds Act 1975 § 5.

³⁸⁰ Nature Reserve (Castle Harbour) Order 1979, Schedule.

³⁸¹ See *generally* Nature Reserve (Tern Nesting Areas) Order 1976.

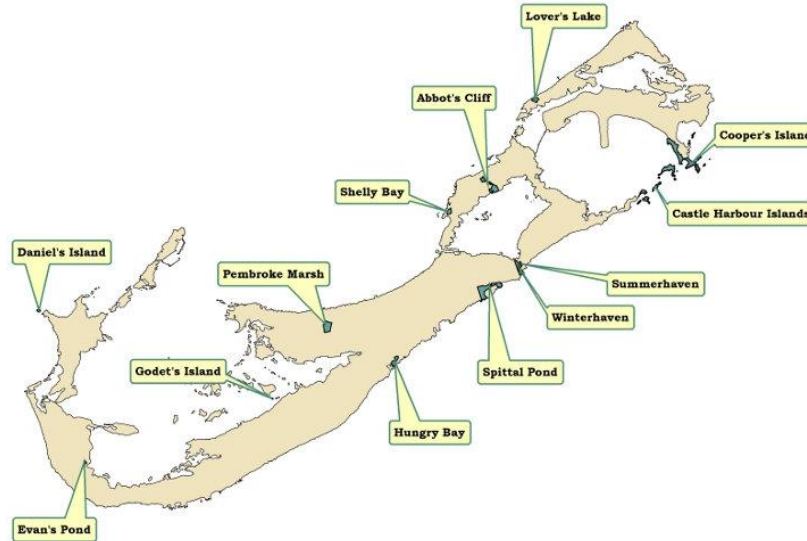


Figure 8. Nature reserves.³⁸²

4.10.5 Additional authorities providing conservation area authority

In addition to the foregoing laws specifically designed for designation of areas for conservation purposes, several laws previously discussed elsewhere include relevant authority. These include:

- **Protected Species Act:** As discussed in Section 3.3 of this report, the Protected Species Act authorizes the Minister to designate protected areas necessary as critical habitat to a listed protected species. No protected areas have been established to date.
- **Development and Planning Act:** As discussed in Section 3.2.1 of this report, Section 28 of the Development and Planning Act authorizes the Minister to designate environmental conservation areas for protection of areas including beaches, caves, habitats, and other natural features. These areas are identified in the Bermuda Plan 2008 and include coastal areas out to the low tide line. However, the Bermuda Plan 2008 does not extend into the marine environment, so these areas are therefore limited to the terrestrial environment.
- **Protected Waters (Castle Harbour) Act:** The Protected Waters (Castle Harbour) Act prohibits entrance (including vessels and boats) on marked waters or tidal lands in Castle Harbour.³⁸³
- **Marine Board Act:** As discussed in Section 4.4.2 of this report, the Marine Board (Prohibited Areas) Notice 2010 prevents entry into certain areas.

4.11 Energy production

Offshore energy production is an activity that does not currently exist but may be developed in the future in Bermuda. Recent proposals and studies have examined potential placement of offshore wind facilities and wave energy facilities in Bermuda waters. As described in the National Electricity Sector

³⁸² Nature Reserves, Government of Bermuda, at <http://www.conservation.bm/nature-reserves/>.

³⁸³ Protected Waters (Castle Harbour) Act 1951 § 1, Schedule.



Policy of Bermuda,³⁸⁴ environmental permitting and planning requirements for offshore wind, wave, tidal, and ocean thermal will be important to Bermuda's future energy sector.³⁸⁵ This Section focuses on requirements applicable specifically to new offshore energy production facilities, but we note that these facilities substantively will overlap with other utility uses noted in Section 4.8 of this report. In particular, they will involve undersea cables connecting to land and associated approvals.³⁸⁶

The Energy Act provides rules for energy production and sale in Bermuda, though it does not directly address energy production in the marine environment.³⁸⁷ The Minister responsible for energy (currently the Minister of Economic Development) administers the Act with the assistance of the Department of Energy and may delegate responsibility to the Energy Commission or to any public officer.³⁸⁸ The Energy Commission advises the Minister and is authorized to conduct inquiries on energy-related matters.³⁸⁹

The Energy Act 2009 requires a license from the Minister to produce, supply, sell, or distribute energy. Licences may be subject to terms and conditions specified by the Minister,³⁹⁰ however, the Act does not include any environmental requirements or provisions. Application of this provision to new offshore energy sources would require consideration of whether the Bermuda Electric Light Company (BELCO) or a new entity was producing the energy; if the former, this would likely require amendment of an existing licence, and the latter would require a new licence.

In addition to the Energy Act, any new offshore facility would be subject to Clean Air Act permitting and licencing as a facility generating electricity or steam.³⁹¹ This licencing would address many of the environmental considerations that might not be squarely within the expertise of the Department of Energy.

4.12 Runoff, sewage, and water pollution

Pollution—including from vessels, from sewage outfalls and residential cesspit seepage, from road runoff, and from dumping—is a concern in Bermuda's nearshore waters, as it may wash back on

³⁸⁴ See <http://cloudfront.bernews.com/wp-content/uploads/2015/06/15-06-05-Ministerial-Statement-Electricity-Policy.pdf>.

³⁸⁵ Bermuda Ministry of Economic Development, National Electricity Sector Policy 27 (2015).

³⁸⁶ We presume that energy production is limited to renewable sources for the purposes of this report.

³⁸⁷ Making the Case for MSP in Bermuda, *supra* note 2, at 43. Note that the brief discussion of energy production in the present report does not take into account Bermuda's new Electricity Act 2016, which passed Parliament in March and reshapes the legal framework for the electricity sector in Bermuda. In so doing, the Act opens the power generation market to competition. An express purpose of the Act is to promote the use of renewable energy, which is defined to include "energy produced by solar, wind, biomass, landfill gas, municipal solid waste, ocean (including tidal, wave, current, and thermal), geothermal, or hydro resources." Electricity Act 2016 §§ 6, 2.

³⁸⁸ Energy Act 2009 § 3.

³⁸⁹ Energy Act 2009 § 5.

³⁹⁰ *Id.* § 8. Contravention of the license requirement is an offense punishable by a \$50,000 fine on summary conviction *Id.* at § 9.

³⁹¹ New facilities do not require a construction permit if they are moveable, although they do require an operating licence. Clean Air Act § 4. This exemption could apply to wave energy facilities or certain other offshore energy production facilities.



beaches, cause harm to habitats and species, and otherwise threaten Bermuda’s environment and economy.³⁹²

4.12.1 Sewage outfalls and seepage

Material deposited from sewage outfalls could damage Bermuda’s nearshore environment.³⁹³

Bermuda’s waste disposal facilities include sewage collection facilities in Hamilton and St. George’s, each of which discharge via outfalls into the marine environment. While St. George’s does not treat its sewage, the Hamilton facility currently provides some treatment prior to release.³⁹⁴ Outside of areas serviced by a public sewerage scheme, sewage is collected primarily in individual septic or cesspit (or cesspool) facilities. None of these individual facilities treats the sewage beyond maceration or primary levels, resulting in seepage of nutrients into the ocean (albeit filtered by the limestone platform, allowing the water to retain its exceptional clarity).

The public sewer systems in Bermuda are operated under the Hamilton Sewerage Act 1917 and the St. George’s Sewerage Act 1943. These Acts establish sewer management systems with outfalls at Hungry Bay and Tobacco Bay, respectively. These Acts are not associated with any restrictions on fishing or related activities in nearby waters. The Minister responsible for works and engineering (Public Works) is responsible for managing public sewerage systems pursuant to the Public Lands Act³⁹⁵ and may make regulations regarding the disposal of sewage.³⁹⁶ The Public Health Act 1949 gives the Minister with responsibility for health authority to inspect sewerage systems, and the Minister’s consent is needed to extend, reduce, or alter municipal sewer systems.³⁹⁷ The Act also allows for provisions prohibiting or restricting what can be placed in the sewer on the grounds that could damage or block the system or be prejudicial to public health.³⁹⁸

Under the Development and Planning Act, the deposit of refuse or waste materials on land (including land under water) qualifies as development requiring planning permission (an EIS may be required as well).³⁹⁹ Private waste disposal facilities therefore fall under the Act, as do large-scale sewage facilities. The latter are also subject to permitting and licencing under the Clean Air Act, which defines “controlled plant” to include facilities treating or disposing of sewage.⁴⁰⁰ The conditions on planning permissions and Clean Air Act permits and licences may include conditions to address the nature and amount of

³⁹² Making the Case for MSP in Bermuda, *supra* note 2, at 12. There have been reported instances of sewage-related “grease balls” appearing on Bermuda beaches. Personal communication.

³⁹³ Making the Case for MSP in Bermuda, *supra* note 2, at 12.

³⁹⁴ Recently, the Ministry of Health and Environment recognized the complexity of the problem of inadequate sewage treatment and called for better coordination and communication—including with stakeholders—on the topic of disposal of sewage waste generated in and around the City of Hamilton. Ministry of Health and Environment, Ministerial Statement to the House of Assembly by the Minister of Health and Environment The Honourable Trevor G. Moniz, JP, MP, “Update on the Disposal of Waste,” May 9, 2014.

³⁹⁵ Public Lands Act 1984 § 5.

³⁹⁶ Development and Planning Act 1974 § 54.

³⁹⁷ Public Health Act 1949 § 13.

³⁹⁸ *Id.* § 14.

³⁹⁹ Development and Planning Act 1974 § 14.

⁴⁰⁰ Clean Air Act 1991, First Schedule.



nutrient discharge that may affect the marine environment. Facilities intended merely to discharge sewage into the sea may also require a licence from the Governor pursuant to the UK Environment (Protection) Order 1988, which is discussed below.

4.12.2 Pollution from ships

The Merchant Shipping Act 2002 directs the Minister responsible for maritime administration (currently, the Minister of Tourism Development and Transport) to take or coordinate “measures to prevent, reduce and minimise the effects of, marine pollution.”⁴⁰¹ Under the Act, marine pollution “means pollution caused by ships, offshore installations or submarine pipelines affecting or likely to affect Bermuda or Bermuda waters.”⁴⁰² Specific responsibilities of the Minister within this duty include, *inter alia*, preparing and implementing a National Plan for responding to incidents that may cause marine pollution (with a view to preventing pollution and minimizing its effects) and acquisition, use, and disposal of ships (see Section 4.6.4 of this report).⁴⁰³ The Act applies in all of Bermuda’s territorial waters, including all waters over which UNCLOS authorizes Bermuda’s control.⁴⁰⁴

The Act authorizes the Minister to make statutory instruments to give effect to international agreements related to marine pollution to which Bermuda is a party through the UK.⁴⁰⁵ The Minister can also make regulations governing transfers of materials, including fuel and ballast, between ships in Bermuda;⁴⁰⁶ and to provide for and require the use of facilities for reception of waste at harbours and development of waste management plans by harbours.⁴⁰⁷ Discharge of oil in Bermuda from a ship is an offence unless into the sea as prescribed by regulations⁴⁰⁸ or to preserve safety of a ship or its cargo or crew. The Act also provides for response to oil pollution incidents and of certain pollutants other than oil.⁴⁰⁹ The Merchant Shipping (Prevention of Air Pollution from Ships) Regulations 2015 restrict air pollution discharges from ships in accordance with international law.⁴¹⁰ The Merchant Shipping (Prevention of Pollution by Sewage and Garbage from Ships) Regulations 2015 require most ships to have a sewage certificate and sewage systems and prohibit discharge of sewage from ships unless

⁴⁰¹ Merchant Shipping Act 2002 § 8.

⁴⁰² *Id.*

⁴⁰³ *Id.*

⁴⁰⁴ Merchant Shipping (Prevention of Pollution) (Limits) Regulations 2004 § 2 (citing Part XII of UNCLOS, which, *inter alia*, authorizes limitation on pollution from ships in innocent passage at section 211).

⁴⁰⁵ Merchant Shipping Act 2002 §§ 122-23. The relevant international agreements include the International Convention for the Prevention of Pollution from Ships, the Protocol relating to Intervention on the High Seas in Cases of Marine Pollution by Substances other than Oil, other relevant agreements, and UNCLOS. *Id.*

⁴⁰⁶ *Id.* § 124.

⁴⁰⁷ *Id.* §§ 125-27.

⁴⁰⁸ Discharge of oil from a ship is prohibited unless the ship is on a voyage, is not in a special area, the oil content does not exceed 15 ppm, and the ship has certain filtering and monitoring capabilities. Merchant Shipping (Prevention of Oil Pollution) Regulations 2010 § 12. Special areas are those defined “in a Resolution of the Maritime Environment Protection Committee of the International Maritime Organisation.” *Id.* § 16.

⁴⁰⁹ Merchant Shipping Act 2002 §§ 135-37; The Merchant Shipping (Prevention of Pollution – Substances other than Oil) (Intervention) Order 2004 (listing chemicals to which Sections 135 and 136 apply in addition to oil).

⁴¹⁰ See generally Merchant Shipping (Prevention of Air Pollution from Ships) Regulations 2015. Bermuda has an oil spill response contingency plan; equipment (e.g., skimmers) is located around the Island. BELCO also has response equipment. Personal communication.



treated; discharged more than three nautical miles from land after use of a lesser sewage system; or discharges more than 12 nautical miles from land.⁴¹¹ Disposal of plastics and certain garbage is also prohibited from any ship in any case,⁴¹² or within three nautical miles of land in the case of food waste.⁴¹³

In addition, the Minister may establish temporary exclusion zones where a ship, structure, or other thing is wrecked, damaged, or distressed in Bermuda waters and it appears the risk of significant harm (meaning pollution or property damage) may be reduced by restricting access.⁴¹⁴ No ship shall enter an exclusion zone, with a fine of \$75,000 on summary conviction, and \$150,000 on indictment.⁴¹⁵

The Marine Board Act 1962 also governs pollution from ships, particularly in reference to activities in port. No person may bring a wreck, vessel, floating dock, or other article into Bermuda's waters if it is likely to restrict free navigation⁴¹⁶—a measure to avoid a need to block channels or to need to dispose of hulks by creating MHES or otherwise (see Section 4.6.4 of this report). Similarly, no person may deposit ballast, oil, or rubbish into the waters of a harbour without permission from the Minister.⁴¹⁷ More broadly, it is unlawful for any person to “deposit or throw any ballast, rubbish or filthy water into the waters of the harbours of Bermuda or so near to the foreshore thereof as to be in danger of being washed or falling into those waters.”⁴¹⁸

A ship staying in Bermuda's territorial waters for a cumulative total of seven days or more within one year must, prior to arrival in Bermuda, apply to the Department of Environment and Natural Resources for an Operating Licence for a Controlled Plant.⁴¹⁹

4.12.3 Ocean Dumping

Ocean dumping is subject to two separate authorities, including the Public Lands Act 1984 and the UK Environment Protection Order 1988, which are implemented by the Department of Public Lands and the DEP, respectively.

Deposit of material on public lands, including on or under the seabed, requires permission of the Minister responsible for public lands, as described in Section 3.4 of this report. While this requirement appears not to apply to deposits of pollutants into the sea, it applies to deposits that would sink to the seabed.

⁴¹¹ Merchant Shipping (Prevention of Pollution by Sewage and Garbage from Ships) Regulations 2015, §§ 7-20, 23-5.

⁴¹² *Id.* §§ 26-27.

⁴¹³ *Id.* § 28.

⁴¹⁴ Merchant Shipping Act § 109.

⁴¹⁵ *Id.* § 110.

⁴¹⁶ Marine & Ports Authority (Dumping) Regulations 1967 § 1.

⁴¹⁷ *Id.* § 2.

⁴¹⁸ Marine & Ports Authority (Anchoring and Berthing) Regulations 1967 § 9.

⁴¹⁹ See Government of Bermuda, “Ship environmental policy and waste disposal,” at <https://www.gov.bm/ship-environmental-policy-and-waste-disposal>.



Deposits of any substances and articles in the sea (whether or not aqueous) and under the seabed in Bermuda are subject to the UK Food and Environment Protection Act 1985, as amended, which was applied to Bermuda by the Environment Protection (Overseas Territories) Order 1988.⁴²⁰ The Act requires a licence from the Governor in order to:

- deposit substances or articles in the sea or under the seabed of the territorial sea⁴²¹ from, *inter alia*, any vessel, marine structure, container, or structure on land constructed or adapted wholly for depositing solids at sea;⁴²²
- make such deposits in any waters from a British vessel or structure;
- scuttle a vessel in the territorial sea, or elsewhere if controlled by a British vessel; or
- incinerate substances or articles on a vessel or structure in the territorial sea, or elsewhere on a British vessel or structure.⁴²³

In issuing a license, the Governor must have regard to the need to protect the marine environment, living resources, human health, and legitimate uses of the sea, in addition to other matters the Governor considers relevant.⁴²⁴ The Governor by regulations may exempt certain operations from the license requirement and may include conditions on any license.⁴²⁵ To enforce the requirements, the Governor may make any person an authorized officer, who has rights of entry on vessels in the territory, foreign vessels in the fisheries zone, and British vessels anywhere in the sea.⁴²⁶ Violation of the license requirement is an offense punishable by a fine up to £2,000 on summary conviction and/or two years imprisonment on indictment.⁴²⁷ The DEP implements the Act and Order on behalf of the Governor.

Finally, littering and pollution of ocean waters by individuals is prohibited. The Waste and Litter Control Act 1987 prohibits any disposal of waste—including sewage and unwanted articles—in a public place without authorization, including in the territorial waters.⁴²⁸ The Water Resources Act 1975 also provides that any person who “interferes with or pollutes or fouls any public water,” including seawater, commits

⁴²⁰ See generally, The Environment Protection (Overseas Territories) Order 1988, 1988 No. 1084. While the text of the Order does not specify explicitly that amendments to the Act will apply to the overseas territories, the note at the end of the Order does so specify. We presume that although this note is not part of the Order, it correctly summarizes the effect of any amendments.

⁴²¹ As amended, this provision applies in UK waters and UK controlled waters, the latter of which is defined as “any part of the sea within the limits of an area designated under section 1(7) of the [UK] Continental Shelf Act 1964.” Environmental Protection Act 1990, 1990 ch. 43, at § 146. While a variety of areas have been designated under the Continental Shelf Act 1964, these areas do not include those beyond the territorial sea of overseas territories. Therefore, we interpret this section to apply only within the Bermuda territorial sea.

⁴²² Application of this provision to pollution outfalls appears unlikely, as such outfalls generally are part of systems created for a broader purpose (e.g., water treatment). However, a pump or other mechanism intended to push materials to sea, or facilities intended merely to collect and discharge sewage or other materials, could meet this definition.

⁴²³ UK Food and Environment Act 1985, ch. 48, as amended, §§ 5, 6.

⁴²⁴ The Environment Protection (Overseas Territories) Order 1988, Schedule 1 § 8.

⁴²⁵ *Id.* at Schedule 1 § 7. The Governor may also take remedial action.

⁴²⁶ *Id.* at Schedule 1 § 11.

⁴²⁷ *Id.* at Schedule 1 § 21.

⁴²⁸ Waste and Litter Control Act 1987 §§ 2, 4, 5.



an offence.⁴²⁹ This prohibition applies to the discharge of any matter or substance likely to affect water quality or to cause direct or indirect injury to marine life.⁴³⁰

4.13 Maritime security and law enforcement

Maritime security is an important activity in Bermuda's nearshore marine environment. Maritime security involves not only national defence, but also law enforcement and port security. While a complete review of the maritime security apparatus is beyond the scope of this report, this section provides an overview of these activities as relevant to nearshore MSP.

The UK is responsible for the national security and defence of Bermuda, but in practice does not maintain a military presence on the island. Instead, Bermuda maintains the Bermuda Regiment as an independent defence force pursuant to the Defence Act 1965. The Bermuda Regiment is a reserve force under the command of the Governor that includes a Boat Troop.⁴³¹ The Regiment supports the Bermuda Police Service (BPS) and provides other services, including but not limited to maritime support to BPS, Customs, and Fisheries and humanitarian assistance in response to hurricanes and other natural and man-made disasters.⁴³² Since 2010, the Bermuda Regiment has assisted BPS with joint maritime patrols.⁴³³

The BPS is the primary law enforcement agency for Bermuda pursuant to the Police Act 1974. The BPS is led by a Commissioner of Police and Deputy Commissioner of Police appointed by the Governor.⁴³⁴ The Service also includes "such numbers of assistant commissioners, superintendents, chief inspectors, inspectors, sergeants, constables and police cadets as may from time to time be determined by the Governor."⁴³⁵ Functions of the Service include (among others) preserving the peace, protecting property, "assisting in preserving order in the waters of Bermuda and in enforcing port and maritime regulations," and functions prescribed by other laws.⁴³⁶ The BPS has a marine unit, although the 2014 national security review called for it to be reallocated to another agency—perhaps HM Customs, which does not currently have a marine presence.⁴³⁷

⁴²⁹ Water Resources Act 1975 § 34.

⁴³⁰ *Id.*

⁴³¹ See generally, National Security and Defence Review Committee, Bermuda National Security and Defence Review: Toward a More Secure Bermuda 43 (2014). See also Royal Bermuda Regiment, Support Company (Sp Coy), at <http://www.bermudaregiment.bm/home/companies/46-regiment/organisation/companies/25-support-company-sp-coy> (reviewing Boat Troop vessels and capabilities).

⁴³² National Security and Defence Review Committee, Bermuda National Security and Defence Review: Toward a More Secure Bermuda 32-33 (2014).

⁴³³ *Id.* at 33. More recently, some Bermuda Regiment soldiers have trained and been sworn in as Special Constables to assist the BPS. See "Soldiers To Be Sworn In As 'Special Constables,'" Bernews, July 20, 2015, at <http://bernews.com/2015/07/regiment-police-join-forces/>.

⁴³⁴ Police Act 1974 § 7.

⁴³⁵ *Id.*

⁴³⁶ *Id.* § 4.

⁴³⁷ National Security and Defence Review Committee, Bermuda National Security and Defence Review: Toward a More Secure Bermuda 67 (2014).



Bermuda’s laws specify a number of enforcement entities in addition to the police. For example, Fisheries Inspectors authorised to enforce the Fisheries Act include officers of the DEP appointed by the Minister, commissioned officers of the Royal Navy, all customs officers, and all police officers.⁴³⁸ Similarly, the National Parks Act provides that an authorized officer is a “police officer, park ranger, park warden, conservation officer or other officer of the Department [of Parks],” and anyone designated as such by the minister.⁴³⁹ Inspectors under the Historic Wrecks Act are “the Marine Police, Fisheries Wardens and the Technical officers of Conservation Service including the Custodian and Conservation Officers.”⁴⁴⁰ Authorized officers empowered to enforce specific laws (e.g., fisheries officers, park wardens) have the duties and powers, including powers of search, seizure, and arrest, as are set forth both in the relevant laws.

Security on land—notably, port and harbour security—is an important element in ensuring the safe functioning of Bermuda’s marine economy. The Department of Marine and Ports Services is responsible for the safety of shipping and other boat traffic in Bermuda. Relevant security operations for ports and for shipping include the Maritime Security Act 1997, which provides for safety of harbours and the Maritime Security (Harbour Areas) (Restricted Zones) Order 2010 made by the Governor under that Act; and the Merchant Shipping Act 2002⁴⁴¹ and associated Merchant Shipping (Special Measures to Enhance Maritime Security) Regulations, which set forth measures for maritime security that apply to all ships in the waters of Bermuda.⁴⁴² Her Majesty’s Customs has enforcement priority at borders and ports of entry pursuant to the Customs Department Act 1952 and Revenue Act 1898, but lacks a presence on the water.⁴⁴³ Its efforts are focused on revenue collection and detection of contraband rather than vessel safety issues.

While a range of officers are authorised to enforce laws in the maritime environment in Bermuda, capacity to enforce the laws at sea remains limited. A 2014 report by the Bermuda National Security and Defence Review Committee comprehensively reviewed these issues, concluding that operating capacity is limited in both the territorial sea and EEZ. While the Bermuda Regiment, BPS, and Fisheries Inspectors of DEP do conduct activities at sea, their reach is limited. Activity beyond the inshore waters is little policed at this time, but investment in expansion of the Boat Troop of the Bermuda Regiment could expand offshore capacity.⁴⁴⁴

⁴³⁸ Fisheries Act § 2.

⁴³⁹ National Parks Act 1986 § 2. Note that the proposed National Parks Amendment Act 2009 would revise this definition to encompass the police and any officer authorized to enforce the Act.

⁴⁴⁰ Bermuda Wrecks Authority, Marine Heritage Policy § 11 (2012).

⁴⁴¹ Merchant Shipping Act 2002 § 121A.

⁴⁴² See generally, Merchant Shipping (Special Measures to Enhance Maritime Security) Regulations 2004.

⁴⁴³ National Security and Defence Review Committee, Bermuda National Security and Defence Review: Toward a More Secure Bermuda 48-49 (2014).

⁴⁴⁴ *Id.* at 55.



4.14 Scientific research and education

Bermuda law does not explicitly govern marine scientific research; as a result, no permit or licence is needed to undertake research in the ocean.⁴⁴⁵ However, certain activities for research on living organisms in the ocean are restricted by the Fisheries Act 1972 and Protected Species Act 2003. Under these authorities, taking fish for research without a permit may be unlawful—e.g., if the catch is “for hire or reward,” involves fish are below minimum size, uses restricted or otherwise illegal gear; occurs in a protected area; or involves organisms on a list of protected species. The Fisheries Act 1972 addresses this by providing for issuance of a permit “to take, sell, purchase or possess” any fish for the purpose of scientific research, even if it otherwise would be prohibited by the Act.⁴⁴⁶ In addition, researchers may use fixed fishing gear if authorized by a licence issued by the Director or the Commercial Fisheries Council.⁴⁴⁷ In protected areas, a licence can authorize otherwise restricted activities.⁴⁴⁸ The Protected Species Act, too, provides for licencing to authorize otherwise-restricted activities for the purpose of scientific research.⁴⁴⁹

Provisions in other laws also address marine research. Under the National Parks Act, scientific research is a valid use of marine areas protected by the Act, and the Director of Parks is directed to encourage and oversee research activities.⁴⁵⁰ Under the Historic Wrecks Act, the Custodian of Wrecks may issue licences for marine scientific research on wrecks and marine heritage sites.⁴⁵¹ Under the Endangered Animals and Plants Act, researchers may study protected species with a permit issued by the Management Authority after consultation with the Scientific Authority.⁴⁵² Finally, under the Merchant Shipping Act, the Minister is responsible for provisioning research on marine pollution.⁴⁵³

4.15 Mining

While Bermuda lacks terrestrial deposits of valuable minerals, there has been interest in offshore mining within Bermuda’s EEZ to survey for the presence of minerals on or under the seabed and to extract those minerals if found. One company has the right to survey for minerals currently in Bermuda, although not to extract any that it discovers; however, it has not undertaken survey activities at sea to date.

⁴⁴⁵ A related topic is bioprospecting, which is “the exploration of biodiversity for commercially valuable genetic and biochemical resources. ...” UN Environment Programme, CBD Secretariat, COP 5, “Information on marine and coastal genetic resources, including bioprospecting,” Progress Report on the Implementation of the Programmes of Work on the Biological Diversity of Inland Water Ecosystems, Marine and Coastal Biological Diversity, and Forest Biological Diversity (Decisions IV/4, IV/5, IV/7) 2 (2000). Newly identified marine genetic resources (MGRs) can have commercial and industrial applications in areas such as pharmaceuticals and biomedicine. *Id.* There is a need, however, to ensure that bioprospecting is undertaken sustainably and that Bermuda’s people share equitably in the proceeds from discoveries in Bermuda’s waters.

⁴⁴⁶ Fisheries Act § 18.

⁴⁴⁷ Fisheries Regulations § 6.

⁴⁴⁸ Fisheries Act § 4.

⁴⁴⁹ Protected Species Act 2003 § 8.

⁴⁵⁰ National Parks Act §§ 5, 8.

⁴⁵¹ Historic Wrecks Act § 8.

⁴⁵² Endangered Animals and Plants Act 2006 § 2.

⁴⁵³ Merchant Shipping Act § 8.



As Bermuda lacks mineral deposits, it has never developed mining legislation. As a result, the only authority governing offshore mining is derived from other laws of general applicability governing the offshore environment, all of which have been discussed previously. These notably include the:

- Public Lands Act 1984, under which a lease from the Minister through the Department of Public Lands is required to extract minerals from the seabed (and in this case would require negotiation of a royalty agreement) (see Section 3.1.2 of this report);
- Public Lands Act 1984, under which permission from the Minister through the Department of Works and Engineering is required for dredging and deposits on the seabed (see Section 3.4 of this report);
- Marine Board Act 1962 and Merchant Shipping Act 2002, under which vessels must be appropriately registered and licenced for use and comply with conditions of that registration or licencing, including prohibitions on discharges, e.g., within a ship channel (see Sections 4.9.1, 4.9.2, and 4.12.2 of this report);
- Protected Species Act and Fisheries Act, under which take of listed species (e.g., by dredging) is unlawful without permission (see Sections 3.3.1 and 3.3.2 of this report); and
- United Kingdom Environment Protection (Overseas Territories) Order 1988, under which a licence from the Governor is needed to deposit material (e.g., dredge spoils) on the seabed (see Section 4.6.4 of this report).