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Ocean of Uncertainty: Regulatory Barriers to Multiple Uses in Federal Waters



Photo Credit: Deepwater Wind



Photo Credit: ARC Marine, Mussel Farm

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About the Virginia Coastal Policy Center

The Virginia Coastal Policy Center (VCPC) at the College of William & Mary Law School provides science-based legal and policy analysis of ecological issues affecting the state's coastal resources, by offering education and advice to a host of Virginia's decision-makers, from government officials and legal scholars to non-profit and business leaders.

With two nationally prominent science partners – the Virginia Institute of Marine Science and Virginia Sea Grant – VCPC works with scientists, local and state political figures, community leaders, the military, and others to integrate the latest science with legal and policy analysis to solve coastal resource management issues. VCPC activities are inherently interdisciplinary, drawing on scientific, economic, public policy, sociological, and other expertise from within the University and across the country. With access to internationally recognized scientists at VIMS, to Sea Grant's national network of legal and science scholars, and to elected and appointed officials across the nation, VCPC engages in a host of information exchanges and collaborative partnerships.

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VCPC grounds its pedagogical goals in the law school's philosophy of the citizen lawyer. VCPC students' highly diverse interactions beyond the borders of the legal community provide the framework for their efforts in solving the complex coastal resource management issues that currently face Virginia and the nation.

INTRODUCTION

The first wind turbine site in federal waters off the coast of Virginia is presently under development twenty-seven miles off the coast of Virginia Beach.¹ This expansive project plans to site over seventy turbines, making it “the largest single offshore wind project in the nation,” and is set to begin delivering clean energy on shore by 2024.² Not only does the development of wind turbine sites in federal waters allow for greater access to clean energy, it also presents a unique opportunity for the development of a regulatory framework that allows for coexisting offshore uses. Proper planning and policies could allow for diverse economic and environmental opportunities to be built into clean energy ocean infrastructure through the use of comprehensive planning and zoning.³ At sea, comprehensive planning is achieved through marine spatial planning, which is defined as the process of “harmon[izing] current and projected uses of the ocean waters and seabed with desired ecological, economic, and social goals” or as the “public process of analyzing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic, and social objectives that are usually specified through a political process.”⁴ Marine spatial planning is achieved through the regulatory structure of ocean zoning, which is defined as “a scheme for dividing a marine area into districts and within those districts regulating uses to achieve specified purposes.”⁵ The combined concepts of marine spatial planning and ocean zoning, commonly referred to as “zoning the oceans”, have gained increased attention in recent years.⁶ Considering zoning the oceans to allow for coexisting uses at offshore wind sites near the coast of Virginia is therefore a topic ripe for discussion.

The potential for coexisting uses in offshore waters is great, but regulatory framework and federalism concerns exist that prevent zoning the oceans to allow for coexisting uses to reach their full potential. This paper seeks to anticipate and expand upon the potential benefits, consequences, and unknown variables in future development of offshore wind mixed use zones in federal waters off the coast of Virginia. Part I provides a brief introduction to offshore wind, offshore aquaculture, and the current regulatory framework that governs each of those ocean uses. Part II takes a deep dive into attempts to simplify regulatory oversight of mixed offshore uses, including failed congressional attempts, regional collaborations, and state/federal partnerships. Part III considers case studies of projects in Rhode Island state ocean waters and federal ocean waters in the Gulf of Mexico that pursued mixed use offshore wind energy zoning. Part IV offers recommendations on various strategies to achieve efficient use of federal ocean resources through comprehensive

¹ See *Coastal Virginia Offshore Wind Project*, U.S. DEP’T OF THE INTERIOR, BUREAU OF OCEAN MGMT., <https://www.boem.gov/renewable-energy/state-activities/coastal-virginia-offshore-wind-project-cvow> (last visited July 7, 2020); *Coastal Virginia Offshore Wind*, DOMINION ENERGY, <https://www.dominionenergy.com/cvow> (last visited July 7, 2020) [hereinafter DOMINION ENERGY].

² DOMINION ENERGY, *supra* note 1.

³ See *Vill. of Euclid v. Ambler Realty Co.*, 272 U.S. 365, 390 (1926) (upholding the constitutionality of comprehensive zoning under the police power).

⁴ JOHN M. BOEHNERT, *ZONING THE OCEANS*, 63-64 (2013).

⁵ *Id.* at 67.

⁶ See, e.g., *id.* at 239-52 (discussing the support for and benefits of zoning the ocean off Rhode Island, but also noting that active stakeholders such as “fishers, developers, environmentalists, aquaculturists, [and] government officials” each had very different views, and that not all stakeholders were supportive).

zoning of federal offshore wind sites. Finally, Part V concludes this paper and Part VI serves as a helpful appendix for future researchers, offering insight into comparative efforts in China and compiling useful resources for further research.

I. Current Regulatory Framework

This section will give a brief overview of the current regulatory framework that affects offshore wind and offshore aquaculture projects. It will then point out points of overlap and uncertainty in that framework that make developing plans for offshore wind and aquaculture difficult, time-consuming, and expensive.

A. Maritime Jurisdiction and Cooperative Federalism

The first variable to consider in zoning the oceans, and particularly when zoning for mixed uses involving offshore energy, involves the complexities of federalism that govern maritime jurisdiction. Because maritime jurisdiction is highly technical, both a technical and simplified explanation of its relevant pieces follow.

1. Technical Explanation of Maritime Jurisdiction and Cooperative Federalism

The Territorial Sea is an area of mixed state and federal jurisdiction that lies between the ocean's baseline and twelve nautical miles (nmi) out to sea.⁷ States possess primary jurisdiction between the baseline and 3 nmi pursuant to the Submerged Lands Act (SLA)⁸; however, the federal government retains paramount rights to those areas of primary state jurisdiction “for purposes of commerce, navigation, national defense, and international affairs.”⁹ Beyond the state's 3 nmi zone of primary jurisdiction, the federal government assumes primary and exclusive jurisdiction over all resources in the Territorial Sea.¹⁰ However, in areas of federal jurisdiction in the Territorial Sea that lie within six nmi from the baseline, a Revenue Sharing Boundary exists. The Revenue Sharing Boundary, codified in Outer Continental Shelf Lands Act (OCSLA), mandates that the federal government share “fair and equitable” portions of offshore revenues in federal waters that lie within three nmi of a state's jurisdictional boundary in the marginal sea (*i.e.*, six nmi from the

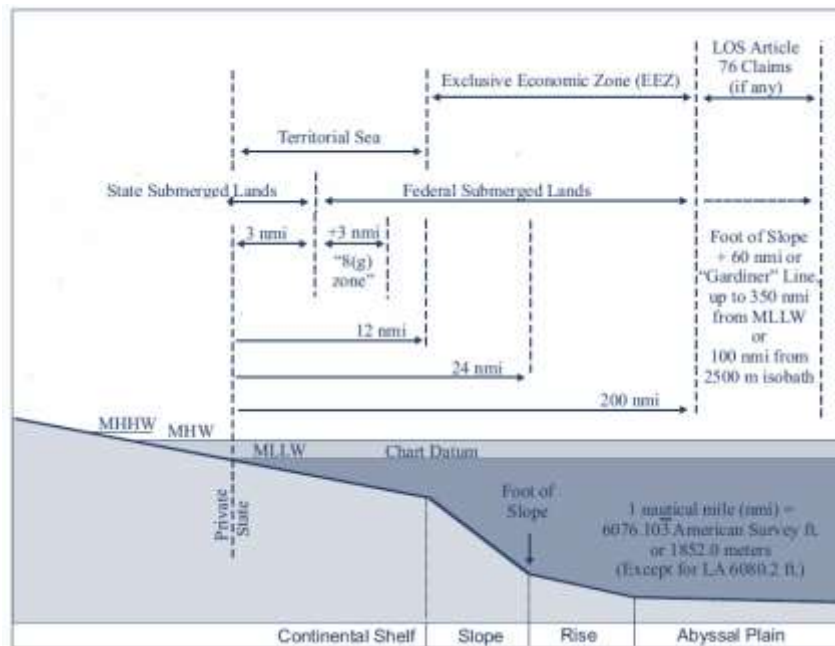
⁷ In Virginia, the ocean's baseline is its mean low-water mark. *See, e.g.*, VA. CODE ANN. § 28.2-100 (2014) (“‘Territorial sea’ means the waters within the belt, three nautical miles wide, that is adjacent to Virginia's coast and seaward of the mean low-water mark.”). The United Nations defines the baseline as the “low-water line along the coast as marked on long-scale charts officially recognized by the coastal state.” U.N. Convention on the Law of the Sea, *opened for signature* Dec. 10, 1982, 1833 U.N.T.S. 3, Part II, § 2 art. 5, Nov. 16, 1995, (entered into force Nov. 16, 1994).

⁸ Submerged Lands Act, 43 U.S.C. § 1314 (2020).

⁹ *Id.*; *see also* TUFTS UNIV. LAW OF THE SEA: MARITIME ZONES (last visited July 7, 2020), *available at* <https://sites.tufts.edu/lawofthesea/chapter-two/>.

¹⁰ State jurisdiction under the SLA is generally three miles, Florida and Texas have state jurisdictions of nine miles. *Outer Continental Shelf*, U.S. DEP'T OF THE INTERIOR, BUREAU OF OCEAN MGMT., <https://www.boem.gov/oil-gas-energy/leasing/outer-continental-shelf> (last visited June 19, 2020); *Zones, Limits, and Maritime Jurisdictions*, MARINE CADASTRE, <https://marinecadastre.gov/news/load.php?url=posts/zones-limits-and-maritime-jurisdictions.html> (last visited July 14, 2020).

baseline).¹¹ According to recent figures, the government gives twenty-seven percent of energy production revenues within three to six nmi from the baseline to coastal states, pursuant to OCSLA.¹² Therefore, Virginia would benefit from encouraging greater mixed use offshore economic development within six nmi of shore. Past the Territorial Sea lies the Contiguous Zone¹³ and the Exclusive Economic Zone (EEZ),¹⁴ both areas of federal jurisdiction. In any area of federal waters, including the EEZ, the state may still hold legal authority to regulate activities or persons that directly impact the state.¹⁵



Virginia and the Outer Continental Shelf, VIRGINIAPLACES.ORG, <http://www.virginiaplaces.org/boundaries/ocs.html> (last visited July 7, 2020).

2. Simplified Version of Maritime Jurisdiction and Cooperative Federalism

While the Virginia offshore wind site is twenty-seven nmi offshore, in federal waters, the Commonwealth retains some rights and jurisdiction over the portions of energy projects and support facilities that are within state waters and that involve state interests.¹⁶ In other words, state permitting is needed for facilities or transmission lines that traverse state subaqueous lands.

¹¹ 43 U.S.C. § 1337(g) (2005).

¹² *Id.*

¹³ The contiguous zone exists between twelve to twenty-four nmi out to sea, where the federal government retains exclusive jurisdiction over the ocean's surface and floor. TUFTS UNIV. LAW OF THE SEA: MARITIME ZONES (last visited July 13, 2020), available at <https://sites.tufts.edu/lawofthesea/chapter-two/>.

¹⁴ The EEZ extends out 200 nmi from the baseline. *Id.*

¹⁵ Coastal Zone Management Act, 16 U.S.C. §1455 (2020); *Skiriotes v. Florida*, 313 U.S. 69 (1941) (holding that states can regulate in federal waters where there is substantial state interest and no conflict with any act of congress).

¹⁶ See generally ENVTL. L. INST., VIRGINIA OFFSHORE ENERGY DEVELOPMENT LAW AND POLICY REVIEW AND RECOMMENDATIONS (Dec. 22, 2008) [hereinafter ELI, VIRGINIA OFFSHORE ENERGY DEVELOPMENT], available at https://www.eli.org/sites/default/files/eli-pubs/d18_19.pdf.

Additionally, while the federal government maintains exclusive regulation over the turbine site, Virginia must approve federally permitted, funded or conducted offshore activities that impact natural resources on the state's coastline, in accordance with the Consistency Requirement of the Coastal Zone Management Act.¹⁷ Finally, Virginia may retain an economic interest over portions of offshore projects that fall within the Revenue Sharing Boundary area of the Territorial Sea, which enhances Virginia's interest in coordinating with the federal government to develop mixed use zoning for offshore wind projects.¹⁸

B. Offshore Wind

Regulated under Section 388 of the Energy Policy Act of 2005, which amended OCSLA,¹⁹ offshore wind energy is gathered through the use of turbines.²⁰ To power a turbine, wind moves over blades that rotate around a hub connected to a device that harnesses the energy to then power a generator, converting the energy into electricity.²¹ Each turbine operates independently and the turbines then collectively deliver power through an undersea cable to an electric service platform (ESP) and from there, onshore.²² Offshore wind turbines are usually located in water no deeper than thirty meters, and are constructed on structures that are piled thirty-two to sixty-four feet into the seabed, where the turbine is attached.²³ Offshore renewable energy development in federal waters is primarily regulated by the Bureau of Ocean Energy Management (BOEM).²⁴ Authorized under the Energy Policy Act of 2005 and Outer Continental Shelf Renewable Energy Program, BOEM oversees "all of the activities needed to support production and transmission of energy from sources other than oil and natural gas."²⁵

Virginia is perfectly positioned for offshore wind, with great wind strength, low frequency of calm periods, shallow water, and few extreme weather events.²⁶ This confluence of positive factors maximizes production while minimizing damage to the turbines themselves, and creates the potential to double the state's energy production.²⁷ The majority of areas with the highest wind potential are in federal waters, with a few areas in the Chesapeake Bay, which is under state jurisdiction.²⁸

There are negative externalities associated with offshore wind development to consider as well. For example, noise from the operation of machinery that accompanies the building of

¹⁷ *Id.* at 71-72.

¹⁸ See 43 U.S.C. § 1337(g) (2005).

¹⁹ 43 U.S.C. § 1337(p)(1) (2005) (amending 43 U.S.C. § 1337).

²⁰ *How do Wind Turbines Work?*, DOE: OFFICE OF ENERGY EFFICIENCY & RENEWABLE ENERGY, <https://www.energy.gov/eere/wind/how-do-wind-turbines-work> (last visited July 7, 2020).

²¹ *Id.*

²² *Id.*

²³ *Id.*

²⁴ *Renewable Energy on the Outer Continental Shelf*, U.S. DEP'T OF THE INTERIOR, BUREAU OF OCEAN MGMT., <https://www.boem.gov/renewable-energy/renewable-energy-program-overview> (last visited July 7, 2020).

²⁵ *Id.*

²⁶ ELI, VIRGINIA OFFSHORE ENERGY DEVELOPMENT, *supra* note 16, at 7.

²⁷ *Id.*

²⁸ *Id.* at 7-8.

offshore sites can harm marine life.²⁹ Additionally, wind siting might affect the migratory and foraging patterns of endangered species, including right whales, migrating bird populations, and sea turtles.³⁰ Though negative environmental externalities exist, offshore wind turbine sites provide a unique opportunity to plan for economically beneficial and environmentally efficient coexisting offshore uses. Offshore aquaculture is just one potential coexisting use of these sites.³¹

C. Offshore Aquaculture

Congress defines Aquaculture as “the propagation and rearing of aquatic species in controlled or selected environments.”³² By extension, offshore aquaculture specifically considers “the rearing of marine organisms in ocean waters beyond significant coastal influence, primarily in the federal waters of the exclusive economic zone.”³³ The Congressional Research service has noted that regulatory uncertainty has been identified as one of the main barriers to offshore aquaculture development in the United States.³⁴ The regulation of aquaculture—let alone aquaculture in offshore federal waters—is more complicated than one might expect. The American legal system has alluded to these complications as far back as 1821:

It is a fact, as singular as it was unexpected in the jurisprudence of our state, that the taking [of] a few bushels of oysters . . . should involve in it questions momentous in their nature, as well as in their magnitude . . . and embracing, in their investigation, the laws of nations . . . the relative rights of sovereign and subjects, as well as the municipal regulations of our own country.³⁵

Current uncertainty involving offshore aquaculture in federal waters touches on many of the difficulties that *Arnold v. Mundy* suggested so many years ago.³⁶ Those who attempt to engage in offshore aquaculture in federal waters must comply with the regulatory oversight of federal agencies. Two issues emerge at this venture. First, although “several permit, consultation and review requirements from multiple federal agencies are required” to engage in offshore aquaculture, “no explicit statutory authority governs permitting and developing aquaculture in

²⁹ See, e.g., U.S. DEP’T OF THE INTERIOR, BUREAU OF OCEAN MGMT., *Fact Sheet: Managing Impacts of Human-Generated Noise on Marine Life* (Nov. 2018); ELI, VIRGINIA OFFSHORE ENERGY DEVELOPMENT, *supra* note 16, at 9-14.

³⁰ See generally U.S. DEP’T OF THE INTERIOR, BUREAU OF OCEAN MGMT., VIRGINIA OFFSHORE WIND TECHNOLOGY ADVANCEMENT PROJECT ON THE ATLANTIC OUTER CONTINENTAL SHELF OFFSHORE VIRGINIA ENVIRONMENTAL ASSESSMENT (Dec. 2014).

³¹ For more information on other coexisting uses, see, e.g., Sylvain Pioch, *The Multi-Use in Wind Farm Projects: More Conflicts or a Win-Win Opportunity?*, AQUATIC LIVING RES. (Apr. 2011) (discussing and providing diagrams for multi-purpose offshore wind sites possibilities in Europe).

³² See CONG. RES. SERV., R45952, U.S. OFFSHORE AQUACULTURE REGULATION AND DEVELOPMENT, 4 (Oct. 10, 2019) [hereinafter U.S. OFFSHORE AQUACULTURE] (citing definition from the Aquaculture Act of 1980 (16 U.S.C. § 1802(1))).

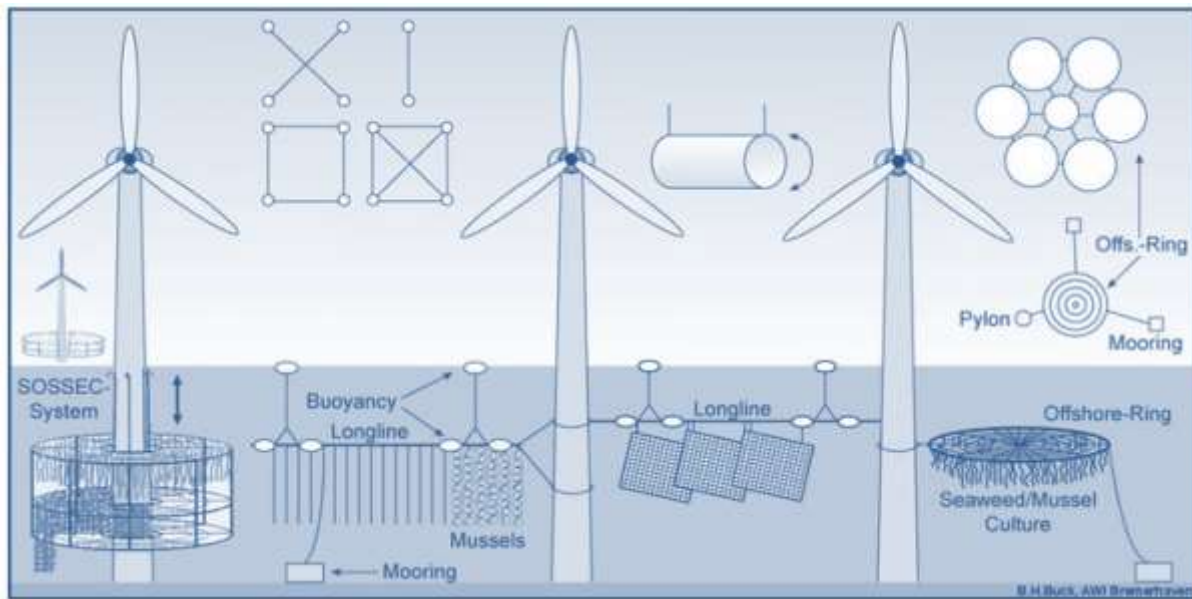
³³ *Id.*

³⁴ *Id.*

³⁵ *Arnold v. Mundy*, 6 N.J.L. 1, 79 (1821).

³⁶ See *id.*

*federal waters.*³⁷ Uncertainty therefore acts as a deterrent for those who seek to avoid accidental liability for failed compliance with federal statutes. Second, these permitting requirements and regulatory oversight that theoretically exist create time-consuming and costly regulatory barriers that may prevent aquaculturists from pursuing the development of sites in federal waters to begin with. This is especially unfortunate where ongoing ocean uses in federal waters already exist (such as offshore wind sites). There, both regulatory uncertainty and regulatory barriers to including aquaculture as an allowable use in those already regulated zones serves to disincentivize the most economically and environmentally efficient use of the built ocean environment in federal waters. This is not all bad news: lack of a federal statute to regulate offshore aquaculture or for zoning the oceans could potentially invite creative and collaborative solutions among states, agencies, and stakeholders.³⁸



A diagram highlighting the potential for various kinds of coexisting aquaculture uses at wind sites. Kifile W. Hagos, *Impact of Offshore Wind Energy on Marine Fisheries in Rhode Island*, R.I. DEP'T OF ENVTL. MGMT. (July 28, 2007).

D. Regulatory Uncertainty

Regulatory uncertainty is the predominant barrier to allowing for coexisting uses in federal waters, particularly when it comes to offshore wind and aquaculture.³⁹ Currently, several permit, consultation, and review requirements from multiple federal agencies are required for each

³⁷ U.S. OFFSHORE AQUACULTURE, *supra* note 32, at 1 (emphasis added).

³⁸ For instance, one could creatively argue that the coastal state should regulate some coexisting uses. Support for this solution is in *Skiriotes v. Florida*, 313 U.S. 69 (1941), where the Supreme Court held that like the federal government, a state could regulate the conduct of its citizens on the high seas beyond its territorial waters “with respect to matters in which the state has a legitimate interest and where there is no conflict with acts of congress.” *Id.* For more on these solutions, see Sections II-III, *infra*.

³⁹ See U.S. OFFSHORE AQUACULTURE, *supra* note 32, at 1.

activity—at least seventeen federal statutes relating to offshore wind regulation and at least twelve federal statutes relating to offshore aquaculture regulation—but no explicit statutory authority governs permitting and developing aquaculture in federal waters.⁴⁰

Several federal statutes and agency regulations overlap to regulate both offshore aquaculture and offshore wind, including: (1) the Fish and Wildlife Coordination Act,⁴¹ (2) the Rivers and Harbors Appropriations Act of 1899,⁴² (3) the Clean Water Act,⁴³ (4) the National Environmental Policy Act (NEPA),⁴⁴ (5) the Endangered Species Act (ESA),⁴⁵ (6) the Marine Mammal Protection Act (MMPA),⁴⁶ (7) the Magnuson Stevens Fishery Conservation and Management Act (MSA),⁴⁷ (8) the Coastal Zone Management Act (CZMA),⁴⁸ and (9) Coast Guard Regulation Approval.⁴⁹ As the regulatory framework stands, most oversight regarding offshore activities stems from the United States Coast Guard (USCG),⁵⁰ the Bureau of Safety and Environmental Enforcement (BSEE),⁵¹ the Bureau of Ocean Energy Management (BOEM),⁵² and the Coastal Zone Management Act (CZMA).⁵³

BOEM, the agency responsible for managing the development of the outer continental shelf energy and mineral resources, has been considered for this role; however, it is not clear whether they have the authority to do so. A 2020 guidance document released by BOEM reiterates the bureau’s authority to regulate renewable energy and site characterization (“e.g., geological, geophysical, and archaeological surveys”) activities, but makes no mention of aquaculture or anything else resembling co-existing uses.⁵⁴ The Army Corps of Engineers (ACOE) has also been

⁴⁰ *See id.* at 11-19.

⁴¹ Fish and Wildlife Coordination Act, 16 U.S.C. §§ 661-666c (1934).

⁴² Rivers and Harbors Appropriation Act of 1899, 33 U.S.C. § 403 (1899) (Section 10 permit).

⁴³ Federal Water Pollution Control Act, 33 U.S.C. §§ 1251-1387 (1972). (aquaculture requires a NPDES permit).

⁴⁴ National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321-4370m-12 (1970) (both offshore wind and aquaculture likely require EIS).

⁴⁵ Endangered Species Act of 1973, 16 U.S.C. §§ 1531-1544 (1973).

⁴⁶ Marine Mammal Protection Act, 16 U.S.C. §§ 1361-1362, 1371-1389, 1401-1407, 1411-1418, 1421-1421h, 1423-1423h (1972).

⁴⁷ Magnuson–Stevens Fishery Conservation and Management Act, 16 U.S.C. §§ 1801-1803, 1811-1813, 1821-1829, 1851-1869, 1881-1885, 1891-1891d (1976) (aquaculture requires a Permit; both offshore wind and aquaculture require “essential fish habitat” review).

⁴⁸ Coastal Zone Management Act, 16 U.S.C. §§ 1455-1466 (1972) (consistency review requirement).

⁴⁹ *See* 14 U.S.C. § 83; 33 C.F.R. §§ 66.01, 64.21.

⁵⁰ *See, e.g.*, U.S. OFFSHORE AQUACULTURE, *supra* note 32, at 19.

⁵¹ Specifically, BSEE is a department under the U.S. Department of the Interior that “has regulatory responsibility for the offshore energy industry on the outer continental shelf.” U.S. Offshore Aquaculture, *supra* note 32, at 19. BSEE is also responsible for “review[ing] aquaculture applications and provid[ing] comments regarding potential conflicts, interactions, or effects on mineral exploration, development, and production operations.” *Id.* *See generally* BSEE, <https://www.bsee.gov> (last visited July 7, 2020).

⁵² United States Bureau of Ocean Management, formerly known as the Marine Minerals Service (MMS), is under the U.S. Department of the Interior. *See generally* U.S. DEP’T OF THE INTERIOR, BUREAU OF OCEAN MGMT., <https://www.boem.gov> (last visited July 7, 2020).

⁵³ Coastal Zone Management Act, 16 U.S.C. §§ 1455-1466 (1972) (consistency review requirement).

⁵⁴ U.S. DEP’T OF THE INTERIOR, BUREAU OF OCEAN MGMT., Guidelines for Activities Requiring Authorization for Renewable Energy Development on the Outer Continental Shelf (May 27, 2020), *available at* <https://www.boem.gov/sites/default/files/documents/newsroom/Activities%20Requiring%20Authorization.pdf>.

considered, but has been found to lack authority to regulate activities on the OCS “that do not involve installation of structures or devices on the seabed,” therefore ACOE would be an inappropriate choice to regulate mixed use ocean zoning of offshore wind areas as well.⁵⁵ The National Marine Fisheries Service (NMFS) additionally attempted to establish a permitting scheme for offshore aquaculture and was found to be without authority to promulgate such regulations.⁵⁶

Each existing statute and regulating authority has been legislatively tailored to meet specific needs, and there is no evidence that legislature intended in those statutes or agencies to regulate mixed offshore uses of two areas as complex and highly regulated as offshore wind and offshore aquaculture. Rather than attempting to force existing statutes to meet current tangential needs that go beyond their original purpose, the safer, though perhaps less realistic, option would be for Congress to either amend an existing statute or, preferably, to pass a new statute that would allow for comprehensive offshore zoning in federal waters. Such legislation would anticipate and provide for comprehensive offshore zoning in federal waters and would allow for efficient permitting and regulation of mixed uses, including offshore wind and aquaculture. To discuss what must be changed through Congress to promote more efficient and co-existing uses of federal offshore wind sites, it is necessary to study the previously proposed, yet ultimately unsuccessful, changes to that framework.

II. ATTEMPTS TO SIMPLIFY REGULATORY OVERSIGHT OF OFFSHORE AQUACULTURE

The following section reviews attempts to simplify the regulatory framework of offshore aquaculture. This paper will first take a general look at congressional attempts, and then focus specifically on the National Offshore Aquaculture Act of 2005 and the Advancing the Quality and Understanding of American Aquaculture Act to highlight some of the concerns held by various stakeholders and to shed light on why these previous attempts to simplify the regulatory framework have been unsuccessful.

A. Congressional Attempts

Congress has tried, and failed, multiple times to enact a comprehensive permitting framework that would encourage multiple offshore uses. In 2019, a Congressional report titled “U.S. Offshore Aquaculture Regulation and Development,” issued by the Congressional Research Service, and authored by Harold Upton, was released.⁵⁷ The report describes some of the Congressional attempts to enact aquaculture legislation to date, including bills introduced in the 109th, 110th, 111th, and 112th, and 115th Congresses. Although these bills “varied to some degree on the balance between the potential rights and responsibilities of aquaculturalists, especially between aquaculture development and environmental protection,”⁵⁸ they typically “focused on

⁵⁵ *Id.*

⁵⁶ *Gulf Fishermen's Ass'n v. Nat'l Marine Fisheries Serv.*, 341 F. Supp. 3d 632, 637 (E.D. La. 2018) (“The MSA does not authorize the regulation of aquaculture.”).

⁵⁷ See U.S. OFFSHORE AQUACULTURE, *supra* note 32.

⁵⁸ *Id.* at 44.

establishing a regulatory framework to develop offshore aquaculture in federal waters of the EEZ.”⁵⁹ The earlier bills seemed drafted with an eye on the potential economic boon that aquaculture might offer if the existing regulatory framework is simplified, while the later bills seem more concerned with addressing environmentalists’ qualms, worries, and fears. Bills introduced in the 115th Congress focused heavily on environmental concerns, and would have “required the Secretary of Commerce to consult with other deferral agencies, coastal states, and fishery management councils to identify the environmental and management requirements and standards that apply to offshore aquaculture under existing federal and state laws.”⁶⁰

1. The National Offshore Aquaculture Act of 2005

Introduced in the 109th Congress, the National Offshore Aquaculture Act of 2005⁶¹ (the “Act”) was envisioned by some as “a one-stop permitting system coordinated by the NOAA and integrated with NOAA’s environmental stewardship responsibilities.”⁶² The Act would have provided the Department of Commerce with “authority to directly regulate aquaculture in federal waters and to establish a coordinated process among the federal agencies that have responsibilities over certain aspects of offshore aquaculture operations under other statutes.”⁶³ The bill also included an opt-out provision, which would allow states to opt-out of aquaculture development in federal waters off their shores.⁶⁴ Although it failed to pass, a hearing before the Senate Subcommittee on National Ocean Policy Study (the “Hearing” and the “Subcommittee”) sheds some light on the competing views held by various stakeholders regarding offshore aquaculture.

The private sector has expressed both interest and concern about the possibility of offshore aquaculture.⁶⁵ John Cates, president of a commercial fish farming operation in Hawaii, spoke during the Hearing of the promise that offshore aquaculture presents. He “can see longevity in [his] career” farming fish, whereas he previously “felt commercial fishing was “going to be short-lived.”⁶⁶ Still, he had two recommendations for the Act. First, he suggested an increase in the lease term provided for under the bill,⁶⁷ reasoning that he would not personally “invest in an EEZ if I only had a [ten]-year lease.”⁶⁸ According to Mr. Cates, a ten-year lease period is too short for the amount of investment required to develop and manage an offshore aquaculture operation.⁶⁹ His other recommendation was to remove the opt-out provision included in the bill. Mr. Cates expressed concern that under the opt-out provision, states could opt-out for political, rather than

⁵⁹ *Id.*

⁶⁰ *Id.* at 44.

⁶¹ National Offshore Aquaculture Act of 2005, S. 1195, 109th Cong. (2005).

⁶² *Hearing on Aquaculture before the Subcomm. on Nat’l Ocean Policy Study of S. Comm. on Commerce, Science, and Transportation*, 109th Cong. 3 (2006) (Statement of Carlos Gutierrez, Secretary of Commerce) (S. HRG. 109-1109 at 3).

⁶³ *Id.*

⁶⁴ *Id.*

⁶⁵ *See* *Hearing on Aquaculture*, *supra* note 62 (Statement of John R. Cates, President of Cates International Inc.) (S. HRG. 109-1109) at 18.

⁶⁶ *Id.*

⁶⁷ *Id.*

⁶⁸ *Id.*

⁶⁹ *Id.*

environmental reasons, threatening investments.⁷⁰ While Mr. Cates clearly supports aquaculture, he just as clearly recognizes the need for investments to be protected. Later in the hearing, speaking to Dr. Hogarth of the NMFS, and alluding to Mr. Cates' earlier comments, Senator Boxer seemed to strike a cautious but understanding tone. Recognizing the investments made by NMFS and others into offshore aquaculture, Boxer said "I don't want to see your investments go down the tubes."⁷¹ However, the Senator seemed most concerned with the potential health and environmental ramifications of offshore aquaculture, warning "[t]he irony is we could have a system if we're not careful, Mr. Chairman, that winds up reducing, you know, the wild fish and getting our people sick."⁷²

There are concerns among environmentalists as well, as outlined by Dr. Rebecca Goldberg, Senior Scientist with Environmental Defense Fund (EDF), a nonprofit environmental advocacy group.⁷³ Although Dr. Goldberg noted that the EDF supported the development of aquaculture generally as a means to increase food supplies, she professed unmistakable concerns about the adequacy of the environmental safeguards included in the Act.⁷⁴ Specifically, Dr. Goldberg cited four risks that the net-cage fish farming method poses to the environment. First, farmed fish that escape could cause ecological damage through the "introduction of non-native fish species"⁷⁵ and "reduced fitness of wild fish as a result of interbreeding".⁷⁶ She argued that both storms and shark attacks on the net-cages pose a high risk of "large scale escapes from offshore farms."⁷⁷ Her second concern was the risk of an outbreak of disease and parasites facilitated by "large numbers of animals in a small area."⁷⁸ On a related note, her third concern was the resulting pollution from fish wastes.⁷⁹ Dr. Goldberg calculated that the "\$5 billion per year offshore aquaculture industry target figure used by NOAA, would discharge annually an amount of nitrogen equivalent to that in untreated sewage from 17 million people."⁸⁰ And finally, the fourth concern was "the farming of carnivores."⁸¹ The current feed for these farmed fish requires fish meal and fish oil provided by wild fish,⁸² which in turn requires "two to four times more wild fish to be caught for their feed than is ultimately harvested."⁸³ Dr. Goldberg's concerns are genuine and problematic. Recognizing the seriousness of the environmental concerns raised by Dr. Goldberg, Senator Olympia J. Snowe asked whether "it would be better to forgo Senate action on this bill altogether—even if this means maintaining the status quo, allowing offshore aquaculture to proceed without

⁷⁰ *Id.* at 18-19.

⁷¹ See Hearing on Aquaculture, *supra* note 62 (Statement of Senator Barbara Boxer) (S. HRG. 109-1109) at 56.

⁷² *Id.*

⁷³ See Hearing on Aquaculture, *supra* note 62 (Statement of Dr. Rebecca Goldberg, Senior Scientist, Environmental Defense Fund) at 28.

⁷⁴ *Id.*

⁷⁵ *Id.*

⁷⁶ *Id.* at 28-29.

⁷⁷ *Id.* at 29.

⁷⁸ *Id.*

⁷⁹ *Id.*

⁸⁰ *Id.*

⁸¹ *Id.*

⁸² *Id.*

⁸³ *Id.*

any regulatory framework in place?”⁸⁴ In response, Dr. Goldberg urged Congress to forgo passage of the Act.⁸⁵

Still others, such as Carlos Gutierrez, former Secretary of Commerce, see aquaculture as a way to meet the growing domestic demand for seafood, while simultaneously providing economic opportunities for coastal communities.⁸⁶ Speaking before the subcommittee, Gutierrez described the increasing need for aquaculture in the United States because of the demand for seafood on a national level. As of the Hearing in 2006, the United States imported seventy percent of its seafood,⁸⁷ with half of those imports the product of aquaculture.⁸⁸ The result of this reliance on imported seafood is an \$8 billion seafood trade deficit.⁸⁹ Secretary Gutierrez cited aquaculture in federal waters as a means to increase domestic seafood supply, while at the same time, decrease the nation’s reliance on imported seafood and reduce the large seafood trade deficit.⁹⁰ He also stressed the sustainable economic opportunity offshore aquaculture posed for coastal communities.⁹¹ This is an important characteristic because coastal communities frequently fear job loss and natural disasters.⁹² Gutierrez noted several examples of communities integrating aquaculture into their economies, including the farming of Isle of Shoals blue mussels in New Hampshire and of red drum and shrimp in Brownsville, Texas.⁹³ He also mentioned a general interest in scallops as a product of offshore aquaculture.⁹⁴ These early successes at the local level seemed to provide the Secretary with a promising outlook of what could be done offshore. Later in the Hearing, Senator Frank Lautenberg of New Jersey raised concerns about the bill that stood in stark contrast to the optimism shown by Secretary Gutierrez, stating that “offshore aquaculture raises serious environmental concerns and poses risks that need to be addressed up front, not after the fact.”⁹⁵ Senator Lautenberg also expressed concern “that we do not yet have sufficient understanding of how off-shore aquaculture might affect our commercial and recreational fishing industries.”⁹⁶

The reason for the failure of the National Offshore Aquaculture Act of 2005 can be drawn from comments made by Senators Boxer, Snowe, and Lautenberg. Each had concerns about the potential threat offshore aquaculture poses to the environment, marine life, and existing industries. Each was reluctant to support a bill they saw as falling short of protecting a variety of stakeholder

⁸⁴ See Hearing on Aquaculture, *supra* note 62 (Questions submitted by Senator Olympia J. Snowe to Dr. Goldberg) (S. HRG. 109-1109) at 124.

⁸⁵ *Id.*

⁸⁶ See Hearing on Aquaculture, *supra* note 62, at 3.

⁸⁷ See Hearing on Aquaculture, *supra* note 62 (Statement of Carlos Gutierrez, Secretary of Commerce) (S. HRG. 109-1109) at 3.

⁸⁸ *Id.*

⁸⁹ *Id.*

⁹⁰ *Id.*

⁹¹ *Id.* at 4.

⁹² *Id.*

⁹³ *Id.*

⁹⁴ *Id.*

⁹⁵ See Hearing on Aquaculture, *supra* note 62 (Statement of Frank Lautenberg, Senator from New Jersey) (S. HRG. 109-1109) at 65.

⁹⁶ *Id.*

interests. Their concerns are emblematic of why Congress has failed to pass offshore aquaculture legislation to date.

2. Advancing the Quality and Understanding of American Aquaculture Act

More recently, the Advancing the Quality and Understanding of American Aquaculture Act (AQUAA Act; S. 3138 and H.R. 6966) was introduced in the 115th Congress. The AQUAA Act would have “provided NMFS with the authority to issue aquaculture permits and to coordinate with other federal agencies that have permitting and consultative responsibilities” in that area.⁹⁷ Structurally, the Act proposed that NOAA would be the lead agency “for providing information on federal permitting requirements in federal waters,”⁹⁸ while the Secretary of Commerce would be responsible for developing environmental impact statements “for areas determined to be favorable for marine aquaculture and compatible with other ocean uses.”⁹⁹ The Act would not have superseded NEPA, and states that “individual projects may require additional review pursuant to NEPA.”¹⁰⁰ Among the other provisions of the AQUAA Act, are requirements for the Secretary of Commerce to consult with other federal agencies, states, and fishery management councils to comply with various federal and state laws.¹⁰¹ The AQUAA Act proposed the creation of an “Office of Marine Aquaculture within NOAA” to provide the needed institutional support of offshore aquaculture.¹⁰² Helpfully, the AQUAA Act identified a list of ten standards that should be considered and applied when issuing offshore aquaculture permits.¹⁰³ Like the AQUAA Act’s earlier counterparts, the AQUAA Act failed to garner the necessary support to pass.

At the time of the Congressional report, no comprehensive offshore aquaculture legislation had been introduced in the 116th Congress.¹⁰⁴ This is a noticeable departure from the steady stream of bills introduced in recent years. Regulatory uncertainty is just one of many challenges that Congress must tackle to encourage aquaculture development. According to the 2019 Congressional report, some observers doubt that offshore aquaculture will develop quickly, and instead “expect that offshore aquaculture may occur incrementally as inshore areas are developed and culture techniques are refined.”¹⁰⁵ At least in part, this delay in development can be attributed to the need for further support from the federal government. The 2019 Congressional report notes the USDA’s support of agriculture, and suggests that similar federal support may be needed for aquaculture.¹⁰⁶

⁹⁷ U.S. OFFSHORE AQUACULTURE, *supra* note 32, at 44 (discussing S. 3138 (115th Congress) and H.R. 6966 (115th Congress)).

⁹⁸ *Id.*

⁹⁹ *Id.*

¹⁰⁰ *Id.*

¹⁰¹ *Id.*

¹⁰² *Id.*

¹⁰³ *Id.*

¹⁰⁴ *Id.* at 43.

¹⁰⁵ *Id.* at 45.

¹⁰⁶ *Id.*

B. Regional Collaborations

Where the federal government has been unable to provide a workable framework for marine planning, coastal regions have attempted to pick up the slack. MARCO, the Mid-Atlantic Regional Council on the Ocean, was created in 2009 by the governors of New York, New Jersey, Delaware, Maryland, and Virginia in an effort to conserve and efficiently designate uses of the shared ocean resources through comprehensive regional marine spatial planning and zoning.¹⁰⁷ Regional priorities include encouraging climate change adaptation, renewable energy development, marine habitat conservation, and conservation of water quality.¹⁰⁸ MARCO creates incredibly detailed and useful maps of marine spatial zones.¹⁰⁹ But without federal authority to permit in offshore federal waters, this organization can only provide guidance.

The Mid-Atlantic Ocean Action Plan (OAP) involved a collaboration of state and local governments in the mid-Atlantic region, as well as federal agencies, that came together to form the Mid-Atlantic Regional Planning Body (MPB).¹¹⁰ Their mission was to “enhance current ocean management and satisfy the diverse interests of Mid-Atlantic ocean stakeholders.”¹¹¹ The purpose of the OAP was to put into motion President Obama’s National Ocean Policy (NOP), an executive order that provided “an opportunity for interested coastal and ocean regions to engage in marine planning to promote a healthy marine environment” through collaborative governance.¹¹²

Unfortunately, the general mission of OAP and federal collaboration within the MPB was put to the side in 2018 when President Trump released an executive order announcing his ocean policy, emphasizing increasing economic opportunities and national security at sea and repealing President Obama’s NOP, de-emphasizing collaborative efforts between states.¹¹³ As a result, BOEM increasingly encourages a “regional approach” to planning, but does not discuss zoning the oceans.¹¹⁴

¹⁰⁷ See MID-ATLANTIC GOVERNORS’ AGREEMENT ON OCEAN CONSERVATION (June 4, 2009), available at <https://www.midatlanticocean.org/wp-content/uploads/2013/11/MidAtlantic-Governors-Agreement.pdf>.

¹⁰⁸ See MARCO Overview, MARCO, <https://www.midatlanticocean.org/about/overview/> (last visited July 7, 2020).

¹⁰⁹ See generally Mid-Atlantic Ocean Data Portal, MARCO, <http://portal.midatlanticocean.org/visualize/#x=-73.24&y=38.93&z=7&logo=true&controls=true&basemap=Ocean&tab=data&legends=false&layers=true> (last visited July 7, 2020).

¹¹⁰ See U.S. DEP’T OF THE INTERIOR, BUREAU OF OCEAN MGMT., MID-ATLANTIC OCEAN ACTION PLAN (2016), available at <https://www.boem.gov/sites/default/files/environmental-stewardship/Mid-Atlantic-Regional-Planning-Body/Mid-Atlantic-Regional-Ocean-Action-Plan.pdf>.

¹¹¹ U.S. DEP’T OF THE INTERIOR, BUREAU OF OCEAN MGMT., APPROACH TO THE MID-ATLANTIC OCEAN ACTION PLAN, 1 (Jan. 22, 2015), available at <https://www.boem.gov/sites/default/files/environmental-stewardship/Mid-Atlantic-Regional-Planning-Body/Approac--to-Mid-Atlantic-Regional-Ocean-Action-Plan.pdf>.

¹¹² U.S. DEP’T OF THE INTERIOR, BUREAU OF OCEAN MGMT., CHARTER FOR THE MID-ATLANTIC REGIONAL PLANNING BODY, 1 (June 20, 2016), available at <https://www.boem.gov/sites/default/files/environmental-stewardship/Mid-Atlantic-Regional-Planning-Body/Final-MidA-RPB-Charter-with-signatures-%284%29.pdf>.

¹¹³ See Ocean Policy to Advance the Economic, Security, and Environmental Interests of the United States, Exec. Order No. 13840, 83 Fed. Reg. 29431, (June 19, 2018) <https://www.whitehouse.gov/presidential-actions/executive-order-regarding-ocean-policy-advance-economic-security-environmental-interests-united-states/>.

¹¹⁴ See, e.g., *A Message from BOEM’s Acting Director: The Path Forward for Offshore Wind Leasing on the Outer Continental Shelf*, U.S. DEP’T OF THE INTERIOR, BUREAU OF OCEAN MGMT. (June 11, 2019),

C. Coastal Management Plans and the Coastal Zone Enhancement Program

While a streamlined federal program would be helpful, the states are not left without options to zone the oceans both in state and federal waters. The CZMA provides ample opportunity for states and the federal government to collaborate regarding offshore uses.¹¹⁵ The National Coastal Zone Management Program, administered by NOAA, is a “voluntary partnership between the federal government and U.S. coastal [states] authorized by the Coastal Zone Management Act . . . to address national coastal issues.”¹¹⁶ Once a state opts in, it must promulgate its own Coastal Management Plan (“CMP”) to address its unique coastal issues according to the Act’s guidelines, after which the plan is reviewed and approved by NOAA before taking effect.¹¹⁷ Two of the CZMA’s primary components are the “federal consistency requirement” and the Coastal Zone Enhancement Program.¹¹⁸ The consistency requirement ensures that federal actions with reasonably foreseeable effects on coastal uses and resources are consistent with the enforceable policies of the state’s approved CMP.¹¹⁹ The Coastal Zone Enhancement Program provides incentives to states to enhance their CMP and promote energy siting and aquaculture.¹²⁰ The CZMA also encourages states to create “special area management plans” to be included in the state’s CMP following approval by NOAA.¹²¹ The CZMA defines a special area management plan as “a comprehensive plan providing for natural resource protection and reasonable coastal-dependent economic growth containing a detailed and comprehensive statement of policies; standards and criteria to guide public and private uses of lands and waters; and mechanisms for timely implementation in specific geographic areas within the coastal zone.”¹²²

Rhode Island was the first state to successfully include an approved Ocean Special Area Management Plan (Ocean SAMP) within its CMP that allowed for comprehensive ocean zoning.¹²³ Rhode Island’s Ocean SAMP included “extensive policies and regulations fostering the development of preferred uses, specifically alternative energy production, principally wind power”

<https://www.boem.gov/newsroom/notes-stakeholders/message-boems-acting-director-path-forward-offshore-wind-leasing-outer>.

¹¹⁵ See, e.g., Coastal Zone Management Act, 16 U.S.C. §§ 1455-1466.; see also VIRGINIA COASTAL ZONE MANAGEMENT PROGRAM, OCS STUDY BOEM 2016-040, COLLABORATIVE FISHERIES PLANNING FOR VIRGINIA’S OFFSHORE WIND ENERGY AREA (May 2016).

¹¹⁶ See NOAA, *About the National Coastal Zone Management Program*, OFFICE FOR COASTAL MANAGEMENT, <https://coast.noaa.gov/czm/about/> (last visited July 7, 2020) [hereinafter NOAA, CZMP].

¹¹⁷ 16 U.S.C. § 1454 (1999).

¹¹⁸ NOAA, CZMP, *supra* note 116.

¹¹⁹ 16 U.S.C. § 1456 (1992).

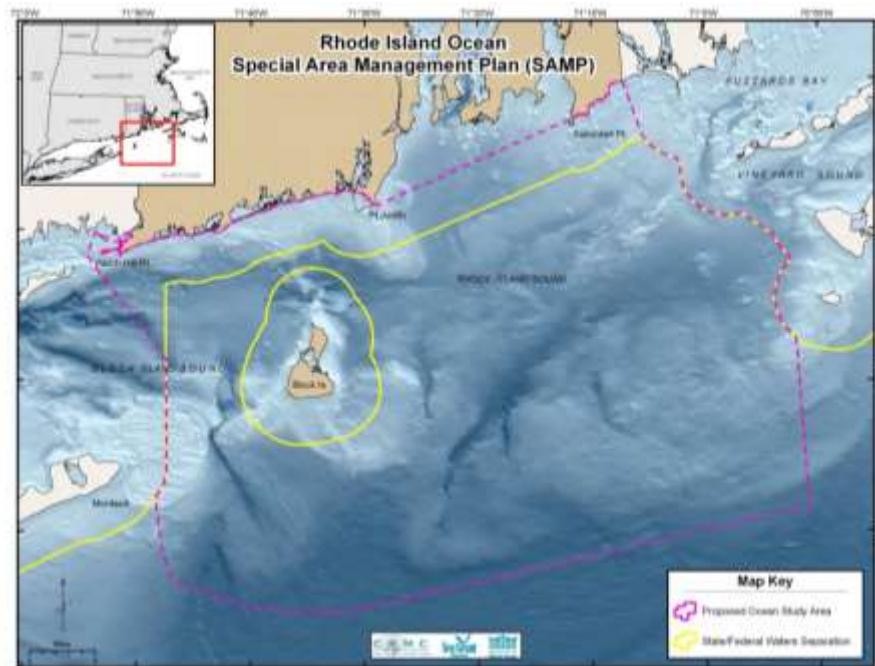
¹²⁰ *Id.* at §1456(b); see also NOAA, *The Coastal Zone Enhancement Program*, OFFICE FOR COASTAL MANAGEMENT, <https://coast.noaa.gov/czm/enhancement/> (last visited July 7, 2020).

¹²¹ 16 U.S.C. § 1452(3) (1992).

¹²² 16 U.S.C. § 1453(17) (1992).

¹²³ BOEHNERT, *supra* note 4, at 135, 142; see 650-20-05 R.I. CODE R. § 2 (2020) (“establishing the Ocean Special Area Management Plan (SAMP) for the offshore waters (beyond 3 nautical mile state water boundary) . . . [and] provid[ing] the regulatory framework for promoting a balanced and comprehensive ecosystem-based management approach to the development and protection of Rhode Island’s ocean-based resources.”).

in offshore waters.¹²⁴ Most notably, the SAMP zoned not only state waters, but also twenty-seven miles out to sea—well into federal waters—incorporating almost 1,500 square miles of ocean around Rhode Island.¹²⁵



RHODE ISLAND OCEAN SPECIAL AREA MANAGEMENT PLAN VOL. 1, at 10, available at http://www.crmc.ri.gov/samp_ocean/finalapproved/RI_Ocean_SAMP.pdf (approved on May 4, 2011).

Rhode Island achieved this feat by “tak[ing] advantage of the federal consistency provisions within the Coastal Zone Management Act . . . to extend the applicability of the Ocean SAMP to activities in federal waters.”¹²⁶ The Ocean SAMP allowed Rhode Island to effectively zone for mixed uses around the Block Island wind farm, discussed below.¹²⁷ Rhode Island has

¹²⁴ BOEHNERT, *supra* note 4, at 135, 142; see 650-20-05 R.I. CODE R. § 8 (2020) (allowing for zoning of renewable energy sites in offshore state and federal waters under Rhode Island’s CMP).

¹²⁵ BOEHNERT, *supra* note 4, at 142.

¹²⁶ *Id.*; see 650-20-05 R.I. Code R. §8.3(F) (“‘Geographic location description’ or ‘GLD’ means a geographic area in federal waters, consistent with the Ocean SAMP study area, where certain federal agency activities, licenses, and permit activities pursuant to 15 C.F.R. Part 930 Subparts D and E will be subject to Rhode Island review under the Coastal Zone Management Act (CZMA) federal consistency provisions.”). For more on how Rhode Island utilizes the consistency requirement in managing its coastal resources, see Rhode Island Coastal Resources Management Council, *Federal Consistency Manual* (last revised Dec. 7 2018), http://www.crmc.ri.gov/regulations/Fed_Consistency.pdf.

¹²⁷ See *Sea2shore: The Renewable Link*, U.S. DEP’T OF THE INTERIOR, BUREAU OF OCEAN MGMT., <https://www.boem.gov/renewable-energy/state-activities/sea2shore-renewable-link> (“The Rhode Island Coastal Resources Management Council approved its two-year ocean Special Area Management Plan (SAMP) in October 2010. On July 22, 2011, the National Oceanic and Atmospheric Administration (NOAA) approved the incorporation of the ocean SAMP into the state’s federally approved coastal management program. In 2009, the State executed a Joint Development Agreement with Deepwater Wind [Block Island Farm] to build in [state waters approximately 2.5 nmi southeast of Block Island] designated by the SAMP.”) (last visited July 7, 2020).

publicly shared its step-by-step Ocean SAMP adoption process that other states may use to include an Ocean SAMP in their own CZMPs, which could provide those other states similar authority to zone beyond traditional jurisdictional boundaries, as has been the case in Rhode Island.¹²⁸

In its recent Coastal Zone Management Program assessment, Virginia identified its top Ocean Resource Management Priority as “[e]nsuring that traditional uses of the ocean can be sustainably maintained while accommodating new uses such as offshore energy development and better management of old resources . . . that are lately in high demand.”¹²⁹ Furthermore, the Governor of Virginia has listed marine spatial planning as one of Virginia’s specific program goals through the CZMP.¹³⁰ Following in the footsteps of Rhode Island, Virginia could meet those objectives by creating and integrating its own Ocean SAMP into its CZMP, which might allow Virginia to plan for economically and environmentally efficient coexisting uses of ocean resources, such as offshore wind and aquaculture. Virginia already has designated several coastal areas that lie in state-controlled waters, rather than federal waters, as Seaside SAMPs. That process could be expanded to allow for the designation of Ocean SAMPs as well.¹³¹ This would also align with the current federal administration’s objective to increase states’ economic opportunities at sea.¹³²

III. CASE STUDIES IN STATE AND FEDERAL WATERS

Despite—and in part due to—the lack of predictable federal regulatory oversight, some states and federal administrations have taken their own initiative in zoning the oceans and encouraging mixed uses in state waters.¹³³ The following section discusses two of those attempts, the first at the state level and the second at the federal level.

¹²⁸ Rhode Island’s three-step process for implementing its Ocean SAMP through its CZMP can be found at: R.I. Coastal Resources Management Council, *The Ocean SAMP Adoption Process* (last updated Jan. 2011), https://seagrant.gso.uri.edu/oceansamp/pdf/documents/about_adoptionprocess.pdf.

¹²⁹ VIRGINIA COASTAL ZONE MANAGEMENT PROGRAM, FINAL SECTION 309 COASTAL NEEDS ASSESSMENT & STRATEGY 77 (last updated Dec. 2018) (approved by NOAA Jan. 29, 2019), available at <https://coast.noaa.gov/data/czm/enhancement/media/va309-2016.pdf>.

¹³⁰ Gov. Ralph Northam, Letter to Dr. Jeffrey L. Payne, Director of Coastal Management NOAA, 2 (Sept. 4, 2018), https://www.deq.virginia.gov/Portals/0/DEQ/CoastalZoneManagement/DescriptionBoundary/VA_CZM_Letter_to_Continue_Program_in_Perpetuity_9-4-18.pdf (“Goal 10: To promote informed decision-making by maximizing the availability of up-to-date educational information, technical advice, and scientific data including the use of new tools such as marine spatial planning.”); see also *Virginia CZM Program Goals*, VA. DEP’T OF ENVTL. QUALITY, <https://www.deq.virginia.gov/Programs/CoastalZoneManagement/DescriptionBoundary/Goals.aspx> (last visited July 7, 2020).

¹³¹ See *Virginia Special Area Management Planning*, VA. DEP’T OF ENVTL. QUALITY, <https://www.deq.virginia.gov/Programs/CoastalZoneManagement/CZMIssuesInitiatives/SpecialAreaManagementPlanning.aspx> (last visited June 19, 2020).

¹³² See *Ocean Policy to Advance the Economic, Security, and Environmental Interests of the United States*, Exec. Order No. 13840, 83 Fed. Reg. 29431 (June 19, 2018).

¹³³ See generally BOEHNERT, *supra* note 4.

A. Block Island, Rhode Island

A case study from state waters off the coast of Rhode Island provides a glimpse into the economic opportunities and challenges posed by mixed use settings in offshore wind sites, and highlights the need for mixed use schemes that account for a variety of stakeholders, including recreational and commercial fishermen. Block Island Wind Farm is America's first offshore wind farm.¹³⁴ The site features five turbines, sited approximately three miles southeast of Block Island, Rhode Island.¹³⁵ The wind farm began operations in December of 2016 and now produces enough energy to power 17,000 homes.¹³⁶ However, this wind farm is in state, rather than federal waters.¹³⁷ The site's proximity to shore makes it suitable for some uses, such as recreational fishing, that may not be suitable for wind farms located further offshore. Regardless, multiple uses have been implemented in and around the wind farm, which speaks to the viability of mixed use settings in other offshore wind sites generally.

A University of Rhode Island (URI) study, funded by Rhode Island Sea Grant, assessed the perception of the impact of the Block Island Wind Farm among fishermen.¹³⁸ To gather data, URI, through Professor Tracey Dalton, who chairs URI's Department of Marine Affairs Coastal Institute¹³⁹, and Talya ten Brink, a doctoral candidate studying Marine Affairs¹⁴⁰, surveyed twenty-five fishermen in total (both commercial and recreational).¹⁴¹ Survey results found that "almost all of the fishermen agreed that there is more recreational fishing taking place in the vicinity of the wind turbines than before the turbines were installed."¹⁴² This increase in recreational fishing activity is due to the turbine support structures, which "serve as artificial reefs that attract a wide variety of fish and marine invertebrates to the area."¹⁴³ Previously unobserved species, such as Cod, are now being fished in the area,¹⁴⁴ which in turn brings recreational fishermen to a site "they seldom visited prior to the wind farm installation."¹⁴⁵ The region's recreational fishermen have welcomed this turn of events. However, commercial fishermen have concerns over increased

¹³⁴ *Block Island Wind Farm Project Overview*, <https://us.orsted.com/Wind-projects> (last visited July 7, 2020).

¹³⁵ *Id.*

¹³⁶ *Id.*

¹³⁷ See *Sea2shore: The Renewable Link*, U.S. DEP'T OF THE INTERIOR, BUREAU OF OCEAN MGMT., <https://www.boem.gov/renewable-energy/state-activities/sea2shore-renewable-link> ("Deepwater Wind Block Island Wind Farm [is] a 30 MW offshore wind project located in state waters offshore Rhode Island") (last visited July 7, 2020).

¹³⁸ Todd McLeish, *Recreational and Commercial Fishermen View the Block Island Wind Farm Through a Different Lens*, RHODE ISLAND SEA GRANT (Jan. 10, 2019), <https://seagrants.gso.uri.edu/recreational-and-commercial-fishermen-view-the-block-island-wind-farm-through-a-different-lens/>.

¹³⁹ Tracey M. Dalton, *Department of Marine Affairs, College of the Environment and Life Sciences*, THE UNIVERSITY OF RHODE ISLAND, <https://web.uri.edu/dalton/> (last visited July 1, 2020).

¹⁴⁰ Talya ten Brink, *PhD Candidate*, THE UNIVERSITY OF RHODE ISLAND, <https://web.uri.edu/rinsfepscor/meet/talya-ten-brink/> (last visited July 1, 2020).

¹⁴¹ Todd McLeish, *Recreational and Commercial Fishermen View the Block Island Wind Farm Through a Different Lens*, RHODE ISLAND SEA GRANT (Jan. 10, 2019), <https://seagrants.gso.uri.edu/recreational-and-commercial-fishermen-view-the-block-island-wind-farm-through-a-different-lens/>.

¹⁴² *Id.*

¹⁴³ *Id.*

¹⁴⁴ *Id.*

¹⁴⁵ *Id.*

activity on their fishing grounds.¹⁴⁶ This increase has led to fears among commercial fishermen “that their gill nets and other gear would become entangled in the recreational fishermen’s gear, forcing them to be more cautious about where they fish.”¹⁴⁷

Talya ten Brink has suggested that her survey “might inspire wind farm developers to build relationships with charter boats and recreational fishing organizations that would benefit from offshore wind farm installations.”¹⁴⁸ She also suggests that “supporting the acquisition of new navigation equipment for the fishermen” may help to diminish some of the concerns among commercial fishermen of the risks of running into the turbine structures.¹⁴⁹ Sufficient spacing of the turbines may help to further diminish the concerns of commercial fishermen. Offshore wind leaseholders in New England have proposed “one nautical mile of spacing between wind turbines for upcoming development.”¹⁵⁰ The commercial fishing industry has sought a greater distance between the turbines, as much as four nautical miles, to ensure safe travel.¹⁵¹ The Coast Guard has also noted the need for sufficient spacing to allow for search and rescue missions.¹⁵² It seems likely that the safety concerns noted by commercial fishermen and the Coast Guard could be resolved through proper siting and spacing of the turbines.

Despite the concerns voiced by some of the commercial fishermen, Rhode Island’s implementation of a mixed-use area surrounding the Block Island Wind Farm may fairly be called a model to build from. The concerns notwithstanding, the area is currently being used by both recreational and commercial fishermen, and, of course, the wind turbines themselves.¹⁵³ Despite the lack of aquaculture within the Block Island Wind Farm, there are signs that “the foundations of the Block Island Wind Farm and maritime life can not only co-exist, but perhaps even flourish, together.”¹⁵⁴ A recent study has shown “that a single turbine can support up to four metric tons of shellfish, which in turn attracts fish to the area,”¹⁵⁵ and there is footage showing “fish feeding at the base of one of the Block Island Wind Farm’s 110-foot tall steel turbine foundations, which have created an artificial reef teeming with marine life.”¹⁵⁶ The coexistence of marine life and the Block Island Wind Farm is an encouraging sign for those wishing to introduce offshore aquaculture in wind farms.

¹⁴⁶ *Id.*

¹⁴⁷ *Id.*

¹⁴⁸ *Id.*

¹⁴⁹ *Id.*

¹⁵⁰ Cassius Shuman, *Turbine Spacing Proposal Irks Fishing Industry*, THE BLOCK ISLAND TIMES (Nov. 27, 2019), <https://www.blockislandtimes.com/article/turbine-spacing-proposal-irks-fishing-industry/56094>.

¹⁵¹ *Id.*

¹⁵² *Id.*

¹⁵³ *Id.*

¹⁵⁴ Cassius Shuman, *Wind Turbines and Fish Co-existing, so far*, THE BLOCK ISLAND TIMES (July 7, 2018), <https://www.blockislandtimes.com/article/wind-turbines-and-fish-co-existing-so-far/51751>.

¹⁵⁵ *Id.*

¹⁵⁶ *Id.*

B. The Gulf of Mexico

In 2016, the NMFS, a division of the National Oceanic and Atmospheric Administration (NOAA) implemented a new regulatory structure for aquaculture activity in the federal waters of the Gulf of Mexico Exclusive Economic Zone.¹⁵⁷ Although NOAA is no longer issuing permits via the NMFS for aquaculture in the federal waters of the Gulf of Mexico, the agency's actions serve as an example of a non-congressional attempt to simplify the existing federal regulatory framework. This approach's failure indicates the need for future Congressional action.

Under the Magnuson-Stevens Act (MSA), implemented in 1976 to conserve and manage fishery resources in the United States,¹⁵⁸ Regional Fishery Management Councils were established.¹⁵⁹ Each of those Councils are responsible for preparing Fishery Management Plans (FMPs).¹⁶⁰ Importantly, the authority to issue FMPs provided for in the MSA, is limited to FMPs that are "necessary and appropriate for the conservation and management of the fishery, to prevent overfishing and rebuild overfished stocks, and to protect, restore, and promote the long-term health and stability of the fishery."¹⁶¹ The regional councils propose FMPs and the regulations necessary to implement those FMPs, then those regulations are "promulgated by the Secretary of Commerce through the NMFS."¹⁶² The Gulf Council is the regional fishery management council authorized to "manage fisheries in the federal waters of the Gulf of Mexico off the coasts of Texas, Louisiana, Mississippi, Alabama, and Florida."¹⁶³

In 2016, the NMFS "with the help of the Gulf Council, finalized regulations authorizing a commercial aquaculture permitting scheme in federal waters."¹⁶⁴ The regulatory structure established by the NMFS created an application process for the permitting of aquaculture facilities and established regulations for the management of these facilities."¹⁶⁵ A group of plaintiffs, including commercial fishermen and food safety advocates,¹⁶⁶ brought an action challenging the authority of the NMFS under the MSA to implement aquaculture regulations. Plaintiffs also alleged that the NMFS had "failed to properly consider a litany of environmental problems that will be presented by [the existence of] aquaculture in the Gulf of Mexico"¹⁶⁷ In 2018, the U.S. District Court for the Eastern District of Louisiana ultimately found that the "NMFS was without authority under the MSA to promulgate the Regulations," and therefore found it unnecessary to examine the plaintiffs' claims regarding the failure of the NMFS to consider environmental

¹⁵⁷ *Gulf Fishermens Ass'n v. Nat'l Marine Fisheries Serv.*, 341 F. Supp. 3d 632, 635-42 (E.D. La. 2018).

¹⁵⁸ *Id.* at 636.

¹⁵⁹ *Id.*

¹⁶⁰ *Id.*

¹⁶¹ *Id.* (quoting 16 U.S.C. §1853(a)(1)(A)).

¹⁶² *Id.* at 636-37.

¹⁶³ *Id.*

¹⁶⁴ *Id.* at 637.

¹⁶⁵ *Id.*

¹⁶⁶ *Id.* at 635.

¹⁶⁷ *Id.*

problems posed by the aquaculture scheme.¹⁶⁸ In vacating the regulations,¹⁶⁹ the court determined that “Congress was aware of aquaculture when it enacted the MSA, yet did not explicitly include the management of aquaculture within the NMFS’s authority.”¹⁷⁰ Under the court’s decision, NOAA is no longer issuing aquaculture permits through NMFS. Instead, Congress must amend the MSA for the NMFS to implement a similar aquaculture permitting scheme.

IV. RECOMMENDATIONS

A. Congress Should Pass Legislation to Simplify the Current Regulatory Framework for Offshore Aquaculture

Currently, those wishing to engage in offshore aquaculture must thread their way through a welter of federal regulations and requirements, which is both confusing and time consuming. This almost certainly deters many from seeking approval for offshore aquaculture projects. Offshore renewable energy in federal waters is, for the most part, currently regulated by BOEM, while offshore aquaculture lacks a single, comprehensive overarching regulatory agency or statute. This complexity has caused problems but opportunities for simplification are emerging. Although the existing framework would benefit from simplification and streamlining, previous attempts to do so have been unsuccessful. The Gulf of Mexico case study shows that Congressional action is necessary, and might lead to economic opportunities for coastal communities. With the proper Congressional action, the problem of a prohibitively complex regulatory system may be solved, and new opportunities created and enhanced. Amending the MSA to grant the NMFS the authority to implement a permitting scheme for offshore aquaculture is one method that Congress could consider to simplify the existing regulatory framework.

B. Regional Organizations and States Should Continue Research to Address Stakeholder Concerns

Rhode Island’s Block Island Wind Farm demonstrates the viability of mixed use zoning for offshore wind energy sites. While the project is small and in state waters, it is nonetheless a model for success that could potentially inform mixed use approaches in the federal waters off Virginia’s coast. Given the concerns of both environmentalists and commercial fishermen, more research is needed to identify practices that will result in an efficient, orderly, and safe mixed use environment. Further research into the potential threat that aquaculture poses to wildlife is needed to answer some of the concerns held by environmentalists. This research could create confidence among environmentalists that aquaculture development can be done in a way that does not threaten the environment. Commercial fishermen understandably have concerns about safety, sharing fishing grounds with other users, and potential liability in mixed use settings. Further research into these issues within existing offshore wind sites, and also future sites, may help to allay these concerns. Regional organizations, such as MARCO, should continue researching the ocean

¹⁶⁸ *Id.* at 637.

¹⁶⁹ *Id.* at 642.

¹⁷⁰ *Id.* at 639.

environment and its potential uses, and individual states, including Virginia, should collaborate with a variety of stakeholders to better understand and, ultimately, address their concerns.

C. Stakeholders Should Collaborate to Ensure the Best Siting Possible

Because offshore aquaculture legislation that could simplify and clarify the existing regulatory framework has not yet been passed, it is important for the various stakeholders to work among themselves to address concerns. Commercial fishermen, environmentalists, and offshore wind operators should endeavor to communicate with each other and collaborate at the earliest stages of the development of offshore wind sites, whether they include offshore aquaculture or not, to identify and address concerns that each stakeholder has about environmental issues, safety, navigation, access, and sustainability.

V. CONCLUSION

The development of offshore wind sites in the federal waters of the United States creates an opportunity for the development of offshore aquaculture within those wind farms. To ensure that this endeavor is both commercially viable and environmentally sound, Congress should pass legislation to simplify and clarify the regulatory structure governing offshore aquaculture. Further research is necessary to ensure that federal legislation adequately addresses the concerns held by various stakeholders. These stakeholders should work together to the greatest extent possible to create mutually beneficial, safe, environmentally sound, and efficient practices.