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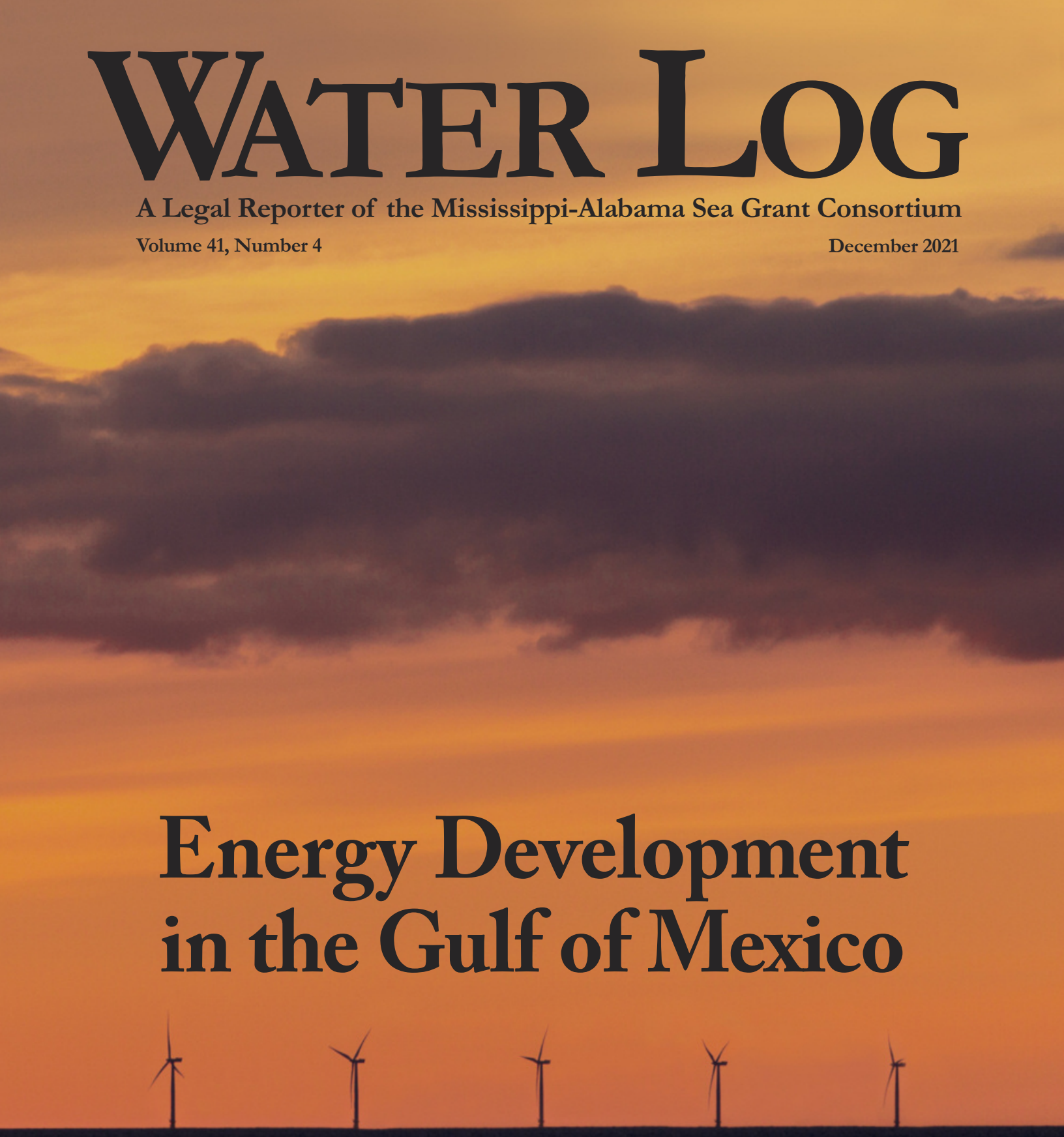

Energy Development in the Gulf of Mexico

Inside This Issue . . .

Cover photograph
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Table of Contents photograph
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• UPCOMING EVENTS •

Keep Alabama Beautiful/Keep Mississippi Beautiful Annual Conference

Jan. 27 – 28, 2022
Birmingham, AL

http://keepalabamabeautiful.org

2022 Invasive Species Forum

Feb. 1 – 3, 2022
Virtual Conference

https://bit.ly/aisf2022

Flood Expo

Feb. 7 – 8, 2022
Miami Beach, FL

https://www.floodexpousa.com

Aquaculture 2022

Feb. 28 – Mar. 4, 2022
San Diego, CA

https://www.was.org/meeting/code/AQ2022

Offshore Wind: Green Energy and Red Tape in the Deep Blue Sea

Davis Delich

The federal government recently began exploring the possibility of offshore wind projects in the Gulf of Mexico. Offshore wind is a promising energy source that America has yet to capitalize on. But the development process takes years, and, as prior experience has shown, its success depends on intergovernmental coordination and local support.

What is an offshore wind farm?

The defining features of an offshore wind farm (OWF) are likely familiar to most Americans, who can probably call to mind the profiles of tall, white, origami-like turbines (sometimes called windmills), dotting a prairie somewhere in the heartland. Replace the tallgrass with ocean waters, and that image remains largely intact for an OWF. Here, an obvious analog is the oil well, whose offshore presence in the Gulf of Mexico is well-established. Similar to oil, wind developers see promise in our oceans for a simple reason: resource abundance and access.

One significant difference from terrestrial wind farms is the sheer size of an offshore turbine. Take, for example, General Electric's Haliade-X turbine, a prototype of which just became operational in Dutch waters in October 2021.[1] Just one blade on a Haliade-X is slightly longer than a football field, including both end zones. And size matters: a single Haliade-X turbine can provide up to 74 gigawatt hours of annual energy production. That is enough to power roughly 16,000 homes.[2] The larger of the two operational OWF in American waters has five turbines off the coast of Rhode Island capable of producing 0.03 GW annually. Compare this to a windfarm in the United Kingdom, Hornsea Project One, which has 174 turbines capable of a total of 1.2 GW annually.[3]

The construction of even one turbine is a feat of modern engineering. Most turbines are designed to be anchored into the ocean floor. The standard process utilizes specialized wind turbine installation vessels, which temporarily jack themselves up from the ocean floor. There are, however, no less than six foundation types with their own associated processes (*see* image below).

Credit: Josh Bauer, NREL, ***Comparison of Environmental Effects from Different Offshore Wind Turbine Foundations (Aug. 2021).***

So how does offshore wind figure into the broad landscape of energy production? Quite prominently, wagers one legacy energy company. BP officials stated that they expect offshore wind to be the energy industry's "fastest-growing business over the next 20 years," in announcing a £879 million deposit to lease an area off the British Isles that could power up to seven million homes.[4]

The Gulf of Mexico and its Task Force

What does the Gulf of Mexico have to do with all of this? After all, several states along the Atlantic coast are much further along in the process of developing offshore wind. In 2017, however, the National Renewable Energy Lab (NREL) of the U.S. Department of Energy began studying the Gulf's wind energy potential. In two reports issued in 2020, NREL found that offshore wind development was technically and economically feasible in the Gulf.[5] Then, in October 2020, Governor Edwards of Louisiana requested the relevant federal agency convene the Gulf of Mexico Intergovernmental Renewable Energy Task Force (Task Force).

There is more to an OWF than scientific studies and specialized construction. An OWF also requires extensive approval at different levels of government. That is where the Task Force comes in. It provides an official line of communication between federal agencies and state, local,

and tribal officials to ensure that there is mutual support for and awareness of potential projects. While the Task Force does not have any official decision-making authority, it is a forum for interests, concerns, and procedural questions before they arise later in the process.

The Gulf Task Force held its first meeting on June 15, 2021.[6] The participants included: officials from 16 federal agencies or offices; a Member of the U.S. House of Representatives and a staff member from another U.S. Representative; representatives from two Tribes; and a number of state-level officials. Each spoke of their own entity's role in OWF leasing. The discussion included questions about jurisdiction, permit requirements, timelines, coordination strategies, and general procedures, highlighting the Task Force's purpose.

Who does What?

American companies secure permits and leasing rights to develop offshore wind from federal agencies. In 2005, Congress amended the Outer Continental Shelf Lands Act (OCSLA) to give the Department of the Interior the authority to lease and permit offshore renewable energy projects.[7] The Department then delegated this responsibility to a subordinate agency, the Bureau of Ocean Energy Management (BOEM or "the Bureau").

OCSLA's title also describes where federally-approved projects are located: the "outer continental shelf" (OCS). In short, the OCS – waters belonging to the federal government – begins roughly three nautical miles off the coastline. With some caveats, all territory inward from that point belongs to the respective states.[8]

Nonetheless, not even the feds, in federal waters, can unilaterally develop offshore wind energy. State authorities must also be onboard with the idea. For instance, states can exert regulatory control over access to electric transmission lines – necessary infrastructure to transport energy onshore.[9]

Government officials are not the only relevant actors. OWFs also require commercial entities that are willing and able to deliver these projects from 'cradle to grave.' This includes manufacturers, laborers, shipping companies, maintenance crews, and any number of the niche enterprises necessary to execute an OWF. Conversely, for the project to proceed efficiently, commercial and recreational fisheries and other coastal entities must be satisfied that the OWF will not seriously impact their operations.

Baby Steps: Get the Lease

The Bureau describes its leasing process as having four steps: (1) Planning and Analysis; (2) Leasing; (3) Site Assessment, and; (4) Construction and Operations.[10] This four-step breakdown is but a rough categorization of the process (*see Overview of the BOEM Renewable Energy Authorization Process* in this issue for more on this subject). By the end of the first phase, the Bureau hopes to have: conducted preliminary environmental reviews; narrowed the location for potential leasing into a more manageable Wind Energy Area (WEA); considered objections; and put all interested parties on notice about the direction of the proposal.

During the second phase, leasing, the Bureau auctions-off a lease within the WEA identified in the prior phase (if there is competitive interest in the WEA). The initial lease agreement, however, only contains future rights to develop the project when, and if, the proposed OWF survives the rest of the regulatory process.

When an energy company signs that first dotted line to secure the WEA lease, that is just the first of many steps before breaking ground… or water. The remaining parts of the process appear to be treacherous waters, so to speak. In large part, the developer must work to assure the Bureau that it will comply with the applicable environmental and safety laws. It will submit a Site Assessment Plan (SAP) describing how it will evaluate the area, and then, once that is approved, and site assessment completed, it will submit its plan for building and operating the OWF, known as the Construction and Operations Plan (COP). Both the SAP and COP are subject to environmental review by BOEM.

The Role of Environmental Reviews

Environmental reviews loom large over regulatory processes involving the federal government. Not even an OWF – a green energy source – gets a free lunch. These projects must comply with a number of laws, such as the Endangered Species Act or the National Historic Preservation Act. One law in particular has a central role in the past, present, and future of offshore wind development: the National Environmental Policy Act (NEPA).

NEPA requires federal agencies to prepare Environmental Impact Statements (EIS) for actions "significantly affecting the quality of the human environment."[11] An EIS – or even its less onerous cousin, the Environmental Assessment (EA) – will consider an action's potential effects on the environment,

and alternatives to that action. Courts describe NEPA's requirements as "procedural."[12] This purportedly limits judicial review to how an agency reaches a decision, which is considered under the deferential "arbitrary and capricious" standard, rather than whether the agency reaches the most desirable result.

But NEPA has teeth. Any person "adversely affected or aggrieved by an agency action" has legal standing to challenge the associated EIS or EA. These "citizen suits" are the principal NEPA enforcement mechanism. With so many potential litigants, one or more of them may find a colorable challenge that survives long enough to be a problem. Thus, even after it receives agency approval, an OWF's fortune may rest with the federal court system and whether private parties oppose the project.

The Cape Wind Litigation

To get a sense of what this means in practice, consider the case of Cape Wind. Back in 2001, Cape Wind Associates (CWA) proposed a 130-turbine OWF to be located off of Massachusetts in Nantucket Sound. After a long leasing phase – owed in part to an ambiguity in leasing authority, which Congress remedied with the 2005 OCSLA amendments – CWA signed a lease with the Department of the Interior in October 2010.[13] Not everyone in Massachusetts was equally enthusiastic about the proposal. Cape Wind's opponents formed an alliance of strange (yet determined) bedfellows, ranging from Indian tribes to the Kennedys. The Cape Wind challengers lost the majority of their lawsuits. In a practical sense, however, they did prevail.

In 2016 a federal Court of Appeals issued the final major decision in the Cape Wind litigation, *Public Employees for Environmental Responsibility v. Hooper*.[14] On appeal, the challengers argued, among other things, that the Bureau's EIS for the Cape Wind project failed to take a "hard look" at alternative geological data. Additional surveys from the BOEM geologist overseeing the project cast doubt on the seafloor's ability to support large structures. Siding with the project's opponents, the D.C. Circuit Court of Appeals vacated the Bureau's 2009 EIS for its failure to consider this information. The court enjoined construction until the Bureau could produce a revised EIS.

By this point, however, the project could not afford further delays; two energy companies had already terminated their power purchasing agreements with CWA. In 2018, almost two decades later, CWA relinquished its lease.[15]

Conclusion

Four years before the litigation ended, in 2013, Cape Wind's developers estimated that $70 million had already been spent to defend legal and regulatory challenges to the project.[16] In an opinion issued two years before the D.C. Circuit's *Hooper* decision, one federal district judge wrote about the litigation: "There comes a point at which the right to litigate can become a vexatious abuse of the democratic process."[17] It remains to be seen whether the Task Force can avoid such a fate for wind production in the Gulf of Mexico.

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Endnotes

1. General Electric Press Release, GE Renewable's Haliade-X prototype starts operating at 14 MW (Oct. 5, 2021).
2. General Electric, *Meet the Haliade-X – Powering 16,000 Homes*.
3. Orsted, *About the Project*.
4. Stanley Reed, *Oil Giants Win Offshore Wind Leases in Britain*, N.Y. Times, Feb. 9, 2021.
5. NREL, *Two NREL Studies Find Gulf of Mexico Well Positioned for Offshore Wind Development* (May 6, 2020).
6. BOEM, *Meeting Summary* (June 15, 2021).
7. Energy Policy Act of 2005, Pub. L. No. 109-58, § 388(a), 119 Stat. 594, 744 (amending section 8(p) of Outer Continental Shelf Lands Act, 43 U.S.C. § 1337(p)(1)(C)).
8. Submerged Lands Act, 43 U.S.C. § 1301(a)(2).
9. Jeffrey Thaler, *Fiddling As the World Floods and Burns: How Climate Change Urgently Requires A Paradigm Shift in the Permitting of Renewable Energy Projects*, 42 Envtl. L. 1101, 1140 (2012).
10. BOEM, *National Offshore Wind Strategy* (Sept. 2016) at p. 34.
11. 42 U.S.C. § 4332(2)(C).
12. *See* Vermont Yankee Nuclear Power Corp. v. National Resources Defense Council, Inc., 435 U.S. 519, 558 (1978).
13. Mitchell Hokanson, *Avoiding the Doldrums: Evaluating the Need for Change in the Offshore Wind Permitting Process*, 44 Colum. J. Envtl. L. 181 (2019).
14. Public Employees for Environmental Responsibility v. Hopper, 827 F.3d 1077 (D.C. Cir. 2016).
15. *See*, BOEM, *Renewable Energy: Cape Wind*.
16. Katherine Seelye, *Koch Brother Wages 12-Year Fight Over Wind Farm*, N.Y. Times, Oct. 23, 2013.
17. Town of Barnstable, Mass. v. Berwick, 17 F. Supp. 3d 113, 124 (D. Mass. 2014).

Overview of the BOEM Renewable Energy Authorization Process

Idrissa Boube

Guest Expert

The Bureau of Ocean Energy Management (BOEM) is the agency within the U.S. Department of the Interior responsible for managing development of the nation's offshore energy resources, including conventional energy, renewable energy, and marine minerals, in an environmentally and economically responsible way.

BOEM's Regulatory Authority for Renewable Energy Activities

BOEM is responsible for issuing leases, easements, and rights-of-way for renewable energy projects on the Outer Continental Shelf (OCS). The OCS is regulated by the Outer Continental Shelf Lands Act (OCSLA).[1] The OCS refers to federal submerged lands, subsoil, and seabed beginning three nautical miles off the coastline (for most states) and extending to the edge of the Exclusive Economic Zone (EEZ).[2]

BOEM's authority to oversee renewable energy development derives from amendments to subsection 8(p) of the OCSLA, as set forth in section 388(a) of the Energy Policy Act of 2005.[3] The Secretary of the Interior delegated authority to BOEM to regulate activities that produce or support the production, transportation, or transmission of energy from sources other than oil and gas. BOEM published regulations governing its renewable energy program in 2009, found in 30 C.F.R. part 585.[4]

Importance of Stakeholder Engagement

To familiarize stakeholders with BOEM's planning and leasing process and to initiate conversations to set the stage to obtain crucial stakeholder input, BOEM established Intergovernmental Renewable Energy Task Forces in states that expressed an interest in developing offshore renewable energy. The role of each Task Force is to collect and share relevant information that would be useful to BOEM during its decision-making process. Task Force meetings have helped identify areas of significant promise for offshore development and provided the opportunity to identify and resolve potential conflicts.

In August 2020, Louisiana Governor Edwards signed Executive Order JBE-2020-18, establishing a Climate Initiatives Task Force and setting greenhouse gas emission reduction goals for the State of Louisiana.[5] On October 21, 2020, Louisiana requested that BOEM take the necessary steps towards the establishment of an Intergovernmental Task Force for offshore renewable energy. The inaugural meeting of the Gulf of Mexico Regional Task Force was held on June 15, 2021, and included the States of Louisiana, Texas, Mississippi, and Alabama.

The Process

BOEM's renewable energy program occurs in four distinct phases: (1) planning and analysis, (2) leasing, (3) site assessment, and (4) construction and operations. A timeline of these activities is provided below.

For OCS activities, a lease is an agreement between an energy developer and the United States authorizing the use of a designated portion of the OCS for renewable energy activities. A developer holding a lease is referred to as a Lessee. A lease agreement allows a prospective renewable energy developer to explore, develop, and, potentially, produce energy from renewable energy resources.[6] BOEM issues three types of leases for offshore renewable energy production:

- Commercial lease — for commercial activities that generate energy for sale and distribution.
- Limited lease — for activities that support the production of energy, but do not result in the production of electricity for sale or distribution beyond a very limited threshold.
- Research lease — reserved solely for states or federal agencies to conduct renewable energy research activities on the OCS.

A lease does not grant the lessee the right to construct any facility; rather, the lease grants the right to develop plans for use of the area for BOEM's review and potential approval – a Site Assessment Plan (SAP) and a Construction

and Operations Plan (COP). Activities proposed in a plan are subject to BOEM's approval after thorough environmental and technical reviews are conducted.

The process may result in a lease, but BOEM also issues grants for some renewable energy projects. BOEM also issues two types of grants associated with renewable energy projects:

- Right-of-Way (ROW) — A ROW grant authorizes the installation of cables, pipelines, and associated facilities that involve the transportation or transmission of electricity or other energy produced from a renewable energy project that is not located on the OCS.
- Right-of-Use (RUE) — A RUE grant authorizes the construction and maintenance of facilities or installations that support the production, transportation, or transmission of electricity or other energy produced from a renewable energy project in the OCS.

Planning and Analysis

The planning and analysis phase seeks to identify suitable areas for wind energy leasing consideration through collaborative, consultative, and analytical processes that engage stakeholders, tribes, and state and federal government agencies. This is the phase when BOEM conducts environmental compliance reviews and consultations with tribes, states, and natural resource agencies. The process begins with a Call for Information and Nominations published by BOEM in the *Federal Register*.

Based on the information gathered, BOEM will identify priority Wind Energy Areas (WEAs) offshore. WEAs are locations that appear most suitable for wind energy development. Factors vary from region to region, but include considerations such as wind potential and areas with the fewest conflicts (such as with protected resources, oil and gas development, military activities, or fishing). Additionally, parties may seek to develop wind outside of a WEA, in which case, BOEM will process unsolicited lease applications, as applicable. For either, BOEM will prepare an Environmental Assessment for Lease Issuance and Site Assessment.

Competitive vs. Non-Competitive Leasing

The leasing phase results in the issuance of a commercial wind energy lease. Leases may be issued either through a competitive or noncompetitive process.

The Energy Policy Act of 2005 requires that BOEM issue leases and grants on a competitive basis unless it determines that there is no competitive interest in the proposed lease or grant.[7] When only one developer has indicated interest in developing a given site, BOEM may issue a lease or grant non-competitively.[8] If multiple developers express interest in leasing a given site, then BOEM proceeds with a competitive leasing process, which may ultimately result in a lease sale where developers can bid against each other to win the lease or grant.

When BOEM determines that a Competitive Interest exists, BOEM notifies the public and developers of its intent to lease through Sale Notices before holding a lease sale. First, BOEM publishes a Proposed Sale Notice (PSN) in the *Federal Register* giving interested parties 60 days to comment. The PSN will describe the areas BOEM intends to offer for leasing, the proposed conditions of a lease sale, the proposed auction format of the lease sale, and the official lease form. Additionally, the PSN will describe the criteria and process BOEM will use to evaluate bids in the lease sale. If BOEM elects to go ahead with the Lease Sale, it publishes a Final Sale Notice 30 days before the sale, which provides the final version of the information in the PSN, including what the minimum bid is. The Lease Sale is an auction in which entities submit bids (and bid deposits). Companies must qualify by submitting their legal, financial, and technical qualifications in the application, and BOEM will determine whether they are eligible.

Once granted, a commercial lease gives the Lessee the exclusive right to seek BOEM approval for the development of the leasehold. The lease does not grant the Lessee the right to construct any facilities; rather, the lease grants the right to use the lease area to develop its plans, which must be approved by BOEM before the Lessee can move on to the next stage of the process. The approximate timing of these plans is shown in the chart.

Site Assessment

The site assessment phase includes the submission of a Site Assessment Plan (SAP), which is a detailed proposal for how the Lessee will assess the viability of the leasehold. The SAP describes the Lessee's plan to evaluate the geophysical and archaeological data of the area to assess the potential impacts of the project. The SAP describes how the Lessee will conduct resource assessment activities, such as the installation of meteorological towers or buoys, and technology testing during the site assessment phase of the commercial lease. BOEM must approve the SAP

Planning & Analysis	Leasing	Site Assessment	Construction & Operations
~2 YEARS	~1-2 YEARS	UP TO 5 YEARS	~2 YEARS (+25)
• Intergovenmental Task Force • Request for Information or Call for Information and Nominations • Area Identification • Environmental Reviews	• Publish Leasing Notices • Conduct Auction or Negotiate Lease Terms • Issue Lease(s)	• Site Characterization • Site Assessment Plan	• Construction and Operations Plan • Facility Design Report and Fabrication and Installation Report • Decommissioning • Environmental and Technical Reviews

before the Lessee may conduct any "site assessment" activities on the leasehold, such as site characterization surveys or avian, marine mammal, and archeological studies.

Once submitted, BOEM conducts environmental and technical reviews of the SAP, eventually deciding to approve, approve with modification, or disapprove the SAP. When the SAP is approved, the Lessee performs additional assessment of the site, which usually includes using meteorological towers and/or buoys. Meteorological towers are used throughout the life of a project, whereas buoys are generally temporary and are deployed for a few years at a time.

Construction and Operation

The construction and operations phase begins with the submission of a Construction and Operations Plan (COP), which is a detailed plan for the construction and operation of a wind energy project on the lease. The COP describes how the Lessee will construct and operate a commercial wind project on a commercial lease, including a description of all planned facilities as well as a description of proposed construction activities, commercial operations, and conceptual decommissioning plans. A Lessee may conduct additional site characterization during this phase. BOEM must approve the COP before the Lessee can install facilities or conduct commercial activities described in the COP.

Upon receiving the COP, BOEM will conduct environmental and technical reviews of the plan to decide whether to approve, approve with modification, or disapprove the COP. If approved, the Lessee is authorized to build the wind facility. Prior to the end of the lease term, the developer must submit a plan to decommission facilities.

When a Right-of-Way, rather than a lease, is issued, the grantee must prepare a General Activities Plan (GAP), not a COP. The GAP describes how the grantee will construct and operate renewable energy facilities on a limited lease or ROW/RUE grant. The GAP includes a description of construction activities for all planned facilities, associated activities, and conceptual decommissioning plans. BOEM must approve the GAP before the lessee can install facilities or conduct activities described in the GAP.

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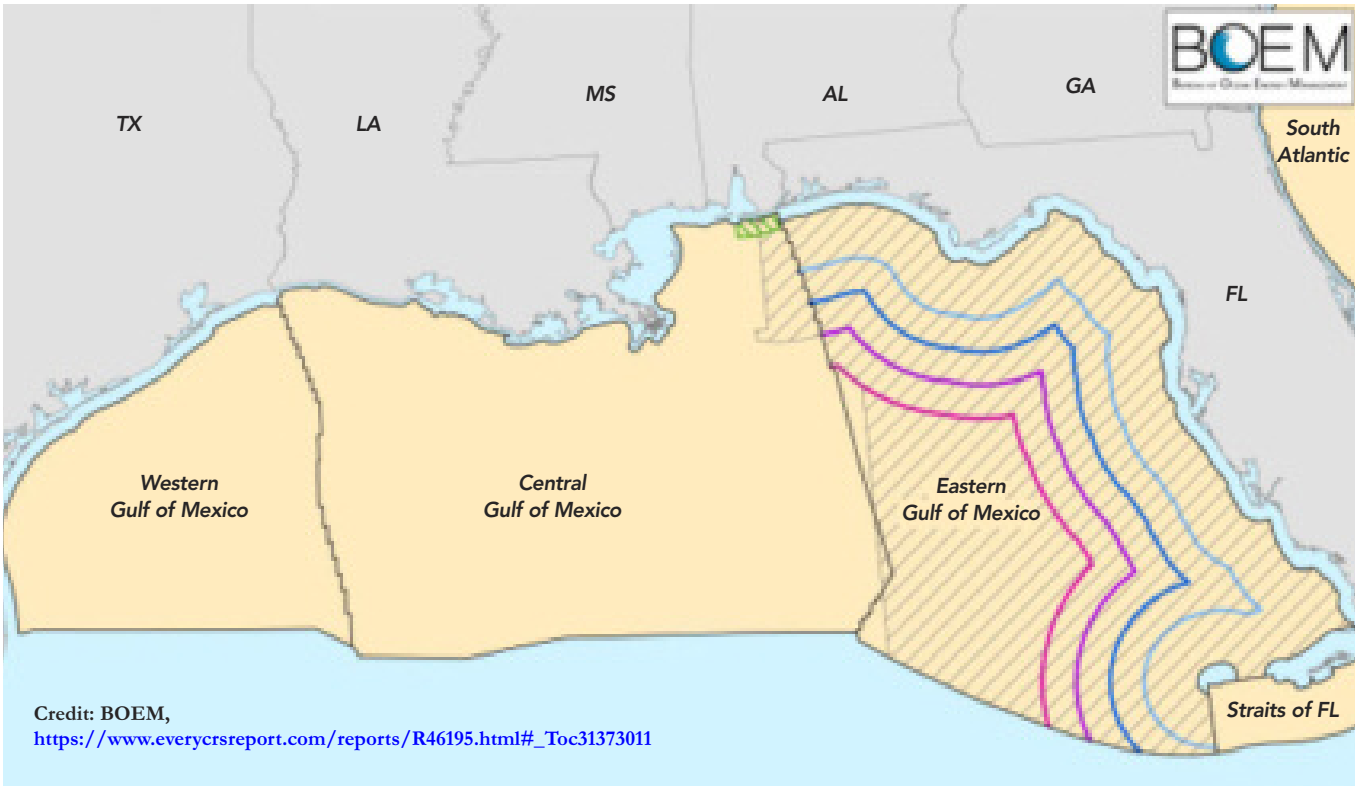
Endnotes

1. 43 U.S.C. §§ 1331 – 1356b.
2. In general, the EEZ extends to 200 nautical miles from shore. Pres. Proc. No. 5030 (March 10, 1983), 48 Fed. Reg. 10605 (March 14, 1983).
3. 43 U.S.C. § 1337; Pub. L. 109-58.
4. For additional information on BOEM's renewable energy regulatory framework and associated guidelines, *see* http://www.boem/gov/National-and-Regional-Guidelines-for Renewable-Energy-Activities/.
5. Louisiana Exec. Ord. No. JBE-2020-18.
6. The lease also gives the Lessee the right to obtain easements without competition in order to install gathering, transmission, and distribution cables; pipelines; and appurtenances on the OCS as necessary for the full enjoyment of the lease. 30 C.F.R. § 585.200(b).
7. Regulations found at 30 C.F.R. 585.200 to 585.221 describe the process in detail.
8. *See* 30 C.F.R. § 585.230.

BOEM's Request for Interest in Wind Power Development in the Gulf



Credit: BOEM, https://www.everycrsreport.com/reports/R46195.html#_Toc31373011

To help gauge the interest in developing wind power in the Gulf of Mexico, BOEM published a Request for Interest in Commercial Leasing for Wind Power Development in the Gulf of Mexico Outer Continental Shelf (Request) in the *Federal Register* in June 2021.[1] Responses to the Request will help the agency determine whether a competitive lease sale is needed, or, if only one entity is interested, whether a noncompetitive lease is more appropriate. The Request sought interest in the Central and Western planning areas of the Gulf. See the map for where those areas are located.

Additionally, the Request sought information even from those who would not develop wind energy but could contribute to the process. BOEM's requested such information as:

- Geological/geophysical information such as hazards,
- Known archeological or cultural resource sites on the seabed,
- Potential impacts on historic properties, offshore and onshore,
- Potential conflicting uses such as fishing vessels, oil and gas leasing, and sediment resource areas,
- Information related to visual and aesthetic impacts, and
- Other relevant socioeconomic, cultural, biological, and environmental information.

This data helps BOEM anticipate and avoid conflicts with sites of environmental and historical significance under the National Environmental Policy Act, wildlife protection statutes, and the National Historic Preservation Act.

Endnotes

1. 86 Fed. Reg. 31339 (June 11, 2021).

Wildlife Permits for Energy Development in the Gulf of Mexico

Kristina Alexander

Two lawsuits claim that the National Marine Fisheries Service (NFMS) should not have issued wildlife permits for oil and gas exploration and development activities in the Gulf of Mexico. The permits allow oil and gas companies to unintentionally harm or kill species protected under the Marine Mammal Protection Act (MMPA) and the Endangered Species Act (ESA).

According to a suit filed by the Sierra Club and other environmental groups in November 2020, NMFS violated the ESA by allowing oil and gas activities to harm protected species.[1] A separate lawsuit was filed in July 2021 in the same Maryland federal court by the Natural Resources Defense Council (NRDC) and other environmental organizations. It claims NMFS, which is part of the National Oceanic and Atmospheric Administration (NOAA), should not have authorized incidental harm to marine mammals such as dolphins and whales by companies conducting geophysical testing for oil and gas exploration.[2] While the lawsuits are concerned that potential oil spills will affect listed species, they also address the impacts of seismic surveys by oil and gas companies on marine mammals.

Geophysical Testing

Less than two months before the wildlife permits were issued, the Bureau of Ocean Energy Management (BOEM) of the Department of the Interior completed its evaluation of the environmental impacts of geological and geophysical (G&G) exploration in the Gulf of Mexico, producing a Programmatic Environmental Impact Statement which considered the direct and indirect effects as well as the cumulative impacts of such activities.[3] BOEM issues permits to companies for G&G exploration for offshore energy development.

Eighty-three percent of the G&G permits ever issued by BOEM have been for the Gulf of Mexico, which translates to over 2.3 million miles of exploration as of October 2017.[4] The Alaska, Pacific, and Atlantic regions received 8, 6, and 2 percent of BOEM permits, respectively. Geophysical exploration includes gravity, electromagnetic, and seismic testing.[5] Ninety-four percent of all exploration permits are for geophysical exploration as opposed to geological exploration, and according to BOEM, oil and gas development "almost exclusively" uses deep-penetration seismic airgun surveys.[6]

Seismic testing shoots soundwaves into the ocean floor to indicate any obstacles to erecting an oil rig, as well as to identify potential oil patches. BOEM describes the process like this:

> Deep penetration seismic surveys are conducted by vessels towing an array of airguns that emit acoustic energy pulses into the seafloor over long durations and large areas. Seismic airguns can penetrate several thousand meters beneath the seafloor.[7]

According to BOEM, the negative impacts from G&G permits "might include" the following:

- behavioral changes and auditory impacts to marine mammals, sea turtles, fish, and birds;
- individual mortality of species from vessel strike, entanglement, or indirect effects of exposure to intense underwater sound; and
- short-term interruption of fishing.[8]

More particularly, BOEM concluded that seismic testing impacts on marine mammals from deep-penetration seismic airgun surveys may have short-term, but not severe, impacts on a large number of animals, "with possible, albeit limited, physical injury or possible mortality (resulting only from vessel collisions)."[9]

NMFS says the seismic exploration in the Gulf of Mexico will occur for 24-hours a day when needed.

NRDC claims that the noise levels can reach 250 dB. To give an idea of what that means, a gunshot heard 100 feet away is 140 dB. And, of course, noise travels differently in water. According to NRDC, the noise levels in the Gulf of Mexico "are among the highest measured anywhere in the world." The official notice for the 5-year MMPA permit for the Gulf states that the amount, types, and locations of seismic testing are not known but that the impacts on the protected animals cannot exceed certain levels. Separate guidance prepared by NOAA indicates that for baleen whales the point at which permanent hearing loss occurs from seismic testing is between 183-219 dB.[10] For dolphins, the range is 155-202 dB.

Marine Mammal Protection Act

There are 28 species of marine mammals in the Gulf, including whales, dolphins, and manatees. Most notable among those is the Bryde's whale, a baleen whale. In August 2021, NMFS identified the Gulf population of Bryde's whale as a distinct species called Rice's whale.[11] According to NMFS, "underwater noise pollution can interrupt [Rice's] whales' normal behavior by hindering their ability to use sound, causing a disruption of their ability to communicate, choose mates, find food, avoid predators, and navigate."[12]

The MMPA makes it illegal "for any person or vessel … to take any marine mammal in waters or on lands under the jurisdiction of the United States." 16 U.S.C. § 1372(a)(2)(A). The term "take" under the MMPA means harassing (such as by disrupting feeding or breeding), hunting, capturing, collecting, or killing.

The law provides for exceptions to the prohibition on taking, such as for incidental takes, which is when the harm occurs unintentionally as part of a lawful activity. NMFS will issue a Letter of Authorization (LOA) under the MMPA (16 U.S.C. § 1371(a)(5)(A)) allowing parties to "take" small numbers of marine mammals incidental to a legal purpose. The regulations pertaining to LOAs explain what is meant by incidental: "This does not mean that the taking is unexpected, but rather it includes those takings that are infrequent, unavoidable or accidental."[13] In order to qualify for a LOA, the party conducting the "take" must demonstrate that harm to marine mammals will have "a negligible impact on the species or stock."[14]

NMFS issued an LOA in early 2021 for G&G exploration in the Gulf of Mexico, noting that the eastern portion of the Gulf, known as the Eastern Planning Area, was removed from consideration by BOEM due to a moratorium on oil and gas development imposed by Congress.[15] This Eastern Planning Area includes the known habitat of the Rice's whale.

Endangered Species Act

Many of the marine mammal species protected under the MMPA are also protected under the ESA, including seven whale species. The ESA lists species that, based on the best available science, were found to be endangered (likely to become extinct in the foreseeable future) and threatened (likely to become endangered in the foreseeable future). In addition to mammals, other listed species in the Gulf of Mexico include species of fish – such as oceanic whitetip shark, smalltooth sawfish, and Gulf sturgeon – and five sea turtles – Kemp's ridley, hawksbill, green, leatherback, and loggerhead.

Like the MMPA, the ESA prohibits taking listed species, defining "take" to include harass, harm, kill, and wound; ESA regulations define harm to mean killing or injuring a species including by "significantly impairing essential behavioral patterns, including, breeding, spawning, rearing, migrating, feeding or sheltering."[16]

A notable difference between the ESA and the MMPA is that the ESA requires federal agencies to consult with NMFS on whether the impacts of their actions will jeopardize the continued existence of a listed marine species or adversely impact their critical habitat. This is known as a Section 7 consultation. As part of the consultation process with NMFS, the agency will issue a Biological Opinion (BiOp) on the impacts the proposed federal action will have on listed species as well as any measures to avoid that harm. Permits for incidental takes are also part of the Section 7 consultation process and are called Incidental Take Statements.

In March 2020 NMFS issued a BiOp regarding whether oil and gas exploration and development authorized by BOEM for the next 50 years would jeopardize the continued existence of ESA listed species. The 2020 BiOp found that oil and gas production was "likely to adversely affect" sperm whales, Rice's whales, oceanic whitetip sharks, giant manta rays, and Gulf sturgeon, as well as sea turtles. The actions likely to adversely affect those species include seismic testing, noise from production, vessel strikes, oil spills, and discharge of marine debris.

It seems Rice's whale would bear the most impact. The exact population of Rice's whales is unknown but small.

According to NMFS, a 2016 study identified 33 then-called Bryde's whales. When issuing the BiOp, NMFS relied on a survey that ended in 2009 which found 40 whales. NMFS acknowledged that the study may no longer be accurate as whales "are thought to have recently experienced a decline" due to the 2010 oil spill. The BiOp estimated that 17 whales could be killed by vessel strikes during the 50 years of planned oil production, although NMFS thought the actual number would be lower, as much of the production would be outside of the area the whale is known to be found.

Significantly, a so-called jeopardy finding was issued for Rice's whale as part of the 2020 BiOp. It means NMFS found that the planned oil and gas development could cause the whale's extinction. Such a determination is rare.

In making the finding, the agency did not count the hazard from certain vessel strikes that would occur "outside of the [Rice's] whale area," but it included all harm from noise. NMFS concluded:

> …[O]ver the course of the 50-year proposed action, the entire small, isolated [sic] of Gulf of Mexico Bryde's whales is expected to experience a reduction in fitness from combined stressors resulting from the proposed action.… Given these wide-ranging, combined multiple effects to the small and likely declining population of this species, we find that the proposed action is likely to jeopardize the continued existence of the Gulf of Mexico Bryde's whale.

When NMFS makes a jeopardy determination, the ESA requires the agency to issue reasonable and prudent alternatives (RPAs) to the proposed action to minimize the harm. NMFS issued one RPA to reduce vessel strikes, suggesting slower vessel speeds, no travel at night, and use of an observer. No alternatives to the sound impacts were proposed despite finding that the whales could experience twelve injury-causing exposures a year for 50 years and also experience 451 sound impacts per year that would adversely affect their behavior.

Conclusion

Energy development in the Gulf of Mexico requires multiple reviews by different federal agencies to assess the impacts of those activities on protected species. While the federal agencies work together, they appear to have reached separate conclusions. BOEM's review of all oil and gas exploration activities by all producers, concluded the impacts to protected species were "possible, albeit limited, physical injury or possible mortality (resulting only from vessel collisions)," compared to NMFS, which concluded that such activities could lead to the extinction of Rice's whale. The environmental plaintiffs assert in two separate suits that allowing oil and gas development poses significant harm to wildlife that violates the law. A court will decide.

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Endnotes

1. Sierra Club v. NMFS, No. 20-CV-03060 (D. Md. *filed* Nov. 21, 2020).
2. NRDC v. Coit, No. 21-CV-01827 (D. Md. *filed* July 22, 2021).
3. BOEM, *Record of Decision: Gulf of Mexico Outer Continental Shelf Proposed Geological and Geophysical Activities Western, Central, and Eastern Planning Areas Final Programmatic Environmental Impact Statement* (Nov. 30, 2020) (hereinafter *PEIS Record of Decision*).
4. BOEM, *Geological & Geophysical Data Inventory: Outer Continental Shelf through 2017* (BOEM 2018-04), pp. 6-10.
5. 30 C.F.R. § 551.1. Geological exploration includes coring and test drilling, well logging, and bottom sampling. *Id.*
6. BOEM, *PEIS Record of Decision*, p. 4.
7. BOEM Press Release, *BOEM Denies Atlantic Seismic G&G Permits* (Jan. 6, 2017).
8. BOEM, *PEIS Record of Decision*, p. 4.
9. BOEM, *PEIS Executive Summary*, p. 19.
10. NOAA, *2018 Revision to Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing: Underwater Thresholds for Onset of Permanent and Temporary Threshold Shifts* (ver. 2). The term used is permanent threshold shift, or the point at which the animal's ability to hear changes.
11. 86 Fed. Reg. 47022 (Aug. 23, 2021). *See also*, NOAA Fisheries Press Release, *New Species of Baleen Whale in the Gulf of Mexico* (Jan. 22, 2021). For the purposes of this article, where possible, the name Rice's whale will be used even for documents pre-dating NOAA Fisheries' recategorization.
12. NOAA Fisheries, *Species Directory: Bryde's Whale.*
13. 50 C.F.R. § 216.103.
14. 50 C.F.R. § 216.106(e).
15. 86 Fed. Reg. 5322 (Jan. 19, 2021) (referring to the withdrawals under the Gulf of Mexico Energy Security Act (GOMESA) (Pub. L. 109-432, § 104)).
16. 16 U.S.C. § 1532(19); 50 C.F.R. § 222.102.

Exploring the Link Between Planning and Coastal Zone Management

Stephen Deal

The world's oceans cover more than 70% of the planet's surface, and 97% of Earth's water is ocean water.[1] At first glance, these staggering numbers suggest that the ocean's resources are limitless. However, as the world's population continues to increase, the stress on ocean ecosystems and resources increases as well. To address this strain on coastal resources, policy experts have come up with various strategies and management plans to bring a measure of regulatory certainty over offshore assets and natural features, which generally fall under the term coastal zone management. Some of these coastal zone management policies incorporate land use and spatial planning concepts utilized by land use planners in their daily work.

A History of Coastal Zone Management

The modern foundations for regulating the coastal environment were set in place within the United States by the Coastal Zone Management Act (CZMA) enacted by Congress in 1972.[2] The passage of the act was prompted, in part, by a 1964 Senate Report, which indicated that the nation's coastal ecosystems had experienced significant environmental deterioration from increased commercial and recreational demand within the coastal zone. Over one-quarter of the country's salt marshes had been destroyed by 1964 due to the environmental pressures exerted by coastal development. Salt marshes are critical habitat for spawning fish and other marine life, so it was vitally important that these areas be maintained.

In response to these mounting environmental challenges, the CZMA established the coastal zone management program. This program allocates funds to the 35 coastal states and territories to address various concerns ranging from enhancing public access to coastal hazard mitigation.[3] Funds were also allocated for states to develop and administer their own coastal zone management (CZM) programs. In much the same way the Standard State Zoning Enabling Act set the foundation for zoning and land use across the country, the coastal zone management program brought planning principles to bear on the marine environment.[4] The primary duties of the state management programs as set forth by the CZMA included: outlining allowable land and water uses, establishing boundaries for the coastal zone, and developing a systematic planning process to address problems such as beach access and protection, coastal erosion, and energy siting.

Credit: Trish Hartmann

To accomplish these goals, the CZMA set up four different pools of funding that states can use. Those funding pools include:

- core program funding for the CZM program and applied research (Section 306), construction and land acquisition (Section 306A);
- program enhancements (Section 309); and
- technical assistance that supports 309 activities (Section 310).

Between 2012 and 2017 CZM programs helped 1,165 communities across the nation undertake some form of coastal hazard mitigation. States have used the different funding pools to address various critical shoreline needs and have employed the bulk of the funding in addressing coastal hazard mitigation, restoring coastal habitat, and coastal community development. CZM programs also conserved 34,147 acres of coastal habitat between the years 2008 and 2017.

Developing a Special Area Management Plan for Coastal Regions

A federal program by itself though is not sufficient to address the full range of problems that may befall a coastal region. To fully address those issues, a planning framework is needed to outline goals and objectives and to set environmental benchmarks for coastal regions. One of the provisions of the CZMA calls for "plans which provide for increased specificity in protecting significant natural resources, reasonable coastal-dependent economic growth, improved protection of life and property in hazardous areas….and improved predictability in governmental decision making."[5] The resulting plans produced in accordance with these directives are known as special area management plans (SAMPs), and they are a critical planning tool. Funding assistance is available through the National Oceanic and Atmospheric Administration (NOAA) of the U.S. Department of Commerce to help eligible coastal states prepare and implement SAMPs.

One noteworthy example of a shoreline area management plan is in the State of Rhode Island. The Rhode Island Coastal Resources Management Council (CRMC), in conjunction with the University of Rhode Island and various state and local agencies, developed a new SAMP for state coastal waters.[6] The SAMP covers the entire coastal zone of Rhode Island and all 21 of its coastline communities.[7] Through extensive data analysis and intergovernmental coordination, the Rhode Island Ocean SAMP fosters a comprehensive permitting system for offshore development that ensures that the state's coastal waters are effectively monitored and supervised to avoid further environmental degradation.

To inform the plan, state officials gathered a number of unique datasets for the purposes of monitoring and regulation. These datasets include mapping indicating shoreline change, sediment transport analysis, inundation modeling, marsh migration analysis, and economic analysis indicating costs associated with shoreline change. These tools were not only key to building the SAMP, they were also aggregated together and made available to the public through STORMTOOLS, a service available through the Rhode Island CRMC.[8]

One of the unique components of the Rhode Island SAMP is that it brought the concept of zoning to coastal waters. To translate this from theory into practice took time, as various components of Rhode Island's coastal waters had to be classified according to their different land attributes and noteworthy features. One offshore development priority that was identified during the SAMP process was the siting of offshore wind turbines. To establish a suitable zone for turbines, it was necessary to gather information on wind speeds, water depth, and proximity to protected areas.[9] Also, to ensure that offshore development did not interfere with Rhode Island fisheries, the Ocean SAMP designated areas of high fishing activity as areas of particular concern and mapped out mobile gear, fixed gear, and recreational fishing areas within the study area. Important cultural assets located offshore, such as shipwreck sites, also were mapped.

With a thorough mapping and land classification system in place, the Rhode Island Ocean SAMP is able to institute an extensive permitting process for offshore development. To ensure that permitting requirements are in keeping with coastal regulations, the Ocean SAMP established a Joint Agency Working Group (JAWG) composed of many state and federal agencies. The JAWG's role is to determine project-specific requirements to be followed during the construction and operations of a project. Included within these requirements are any monitoring needs to ensure the project does not produce adverse impacts on the site.

Individuals who are developing offshore facilities must submit two types of plans for the facility for federal approval. Once these plans are complete and a project is being developed, the JAWG will make a determination for the different monitoring requirements needed on site.

Comprehensive Planning for Coastal Waters

One of the most valuable tools in the planning profession is the comprehensive plan, "a comprehensive strategy for

growth that preserves valuable land reserves while helping to foster optimum economic viability."[10] In the State of Alabama, state and local officials are taking the comprehensive planning framework and applying it to the state's coast.

Alabama's comprehensive plan was described at a 2015 meeting of state and federal officials as a way to leverage additional funding for Alabama's coastal region and to synthesize existing data to address future needs along the coast.[11] Similar to other comprehensive plans, the Alabama Coastal Comprehensive Plan (CCP) set time frames of 10, 25, and 50 years in order to encompass both short and long-term needs within the region. A large number of meetings, nineteen in total, were conducted in 2015 within the coastal Alabama region to gather public input and help guide the overall vision of the document.[12] In order to encourage participation, giant maps were put on display that people could mark up with sticky notes expressing their concerns about the coastal region.[13] In addition to participating in meetings, input from the general public was also gathered via a survey, developed by the Mobile Bay National Estuary Program, to identify priority issues.

Another component of the Alabama CCP was synthesizing existing literature and datasets about Alabama's coastal region into the comprehensive plan framework. Any inventory or plan that touched upon some aspect of the coastal watershed was catalogued and used to inform the development of the plan. Eventually this data was collated into an ArcGIS story map.[14] The story map is a key component of the Alabama CCP as it takes data that has been collated from public meetings and existing plans and displays the information in one, easy to use tool. Key datasets incorporated into the story map include: storm surge scenarios, structure risk under current conditions and two different sea level rise scenarios, an oyster suitability map, and a wetland resource assessment map. Though the story map tool and CCP are not yet finalized, the public input and data gathering produced so far will help coastal communities get a better handle on their existing coastal needs and what needs to be addressed going forward.

Conclusion

Coastal policy and land use policy have a great deal in common. Basic concepts of land use planning, such as zoning and the comprehensive plan, have been used to address environmental challenges and concerns unique to coastal ecosystems. Coastal zone management is also similar to land use planning in that it delineates study zones or regions of interest by identifying shared geographic characteristics such as terrain and ecosystem attributes. Most important of all, coastal zone management and land use planning underscore that to understand a place, whether it is manmade or natural, one must labor to understand its underlying terrain and distinguishing environmental characteristics.

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Endnotes

1. NOAA, *How much water is in the ocean?*, National Ocean Service (Feb. 26, 2021).
2. Sarah Chasis, *The Coastal Zone Management Act: A Protective Mandate*, Natural Resources Journal (Jan. 1985).
3. American Planning Association, *Coastal Zone Management*.
4. American Planning Association, *Standard State Zoning Enabling Act and Standard City Planning Enabling Act*.
5. Texas A&M Agrilife Extension, *Special Area Management Plans (SAMPs)*.
6. Rhode Island Shoreline Change Special Area Management Plan, *About the Shoreline Change Special Area Management Plan*.
7. Adaptation Clearinghouse, *Rhode Island Shoreline Change Special Area Management Plan (Beach SAMP)*.
8. Coastal State Organization, *Coastal Zone Management Programs and the Blue Economy* (June 2018).
9. Jennifer McMann & Sarah Schumann, *The Rhode Island Ocean Special Area Management Plan: Managing Ocean Resources Through Coastal and Marine Spatial Planning: A Practitioner's Guide* (2013).
10. Kenneth B. Hall & Gerald A. Porterfield, *Community by Design: New Urbanism for Suburbs and Small Communities*, McGraw-Hill (2001).
11. US Army Corps of Engineers, *ACCP State and Federal Meeting* (Feb. 27, 2015).
12. Eliska Morgan, *Alabama Coastal Comprehensive Plan (ACCP): A Guide for Resiliency*, Mobile Bay National Estuary Program (July 18, 2016).
13. Ellen Berggren, Meredith LaDart & Jackie Wittman, *USACE Institute for Water Resources, July Silver Jackets webinar*, USACE Institute for Water Resources (July 16, 2020).
14. Alabama Department of Conservation and Natural Resources, *ACCP: Alabama Coastal Comprehensive Plan Storyboard*, ArcGIS.

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