United States Department of the Interior

BUREAU OF OCEAN ENERGY MANAGEMENT
WASHINGTON, DC 20240-0001

Memorandum

To: Director

From: Karen Baker
Chief, Office of Renewable Energy

KAREN BAKER

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Date: 2024.03.13 17:10:55 -04'00'

Subject: Gulf of Maine Area Identification Pursuant to 30 C.F.R. § 585.211(b)

1) Purpose

The purpose of this memorandum is to document the analysis and rationale used to develop recommendations for the Final Wind Energy Area (WEA) in the Gulf of Maine offshore the States of Maine, New Hampshire, and the Commonwealth of Massachusetts. The Bureau of Ocean Energy Management (BOEM) Office of Renewable Energy Programs is requesting concurrence from the BOEM Director on the recommended Final WEA.

2) Decision Summary

As described in Table 1 and depicted in Figure 1, the recommended Final WEA for the Gulf of Maine consists of 2,001,902 total acres.

Table 1: Gulf of Maine Recommended Final WEA Descriptive Statistics

	Acres	*Installation Capacity (MW)*[1]	*Homes Powered*[2]	*Max Depth (meters [m])*	*Min Depth (m)*	*Closest Distance to Shore (nautical mile [nm])*	*Closest Distance to Mainland (nm)*	*Farthest Distance to Shore (nm)*	*Furthest Distance to Mainland (nm)*
Final WEA	2,001,902	32,030	11,210,651	277	120	20	20	76	80

[1] Megawatts (MW) based on 4 MW/sqkm, or 0.016 MW / acre. This energy capacity density assumption has been updated from 3 MW / sqkm based on: Walter Musial, Paul Spitsen, Patrick Duffy, Philipp Beiter, Matt Shields, Daniel Mulas Hernando, Rob Hammond, Melinda Marquis, Jennifer King, Sathish Sriharan, Offshore Wind Market Report: 2023 Edition; https://www.energy.gov/eere/wind/articles/offshore-wind-market-report-2023-edition

[2] Based upon 350 homes per MW

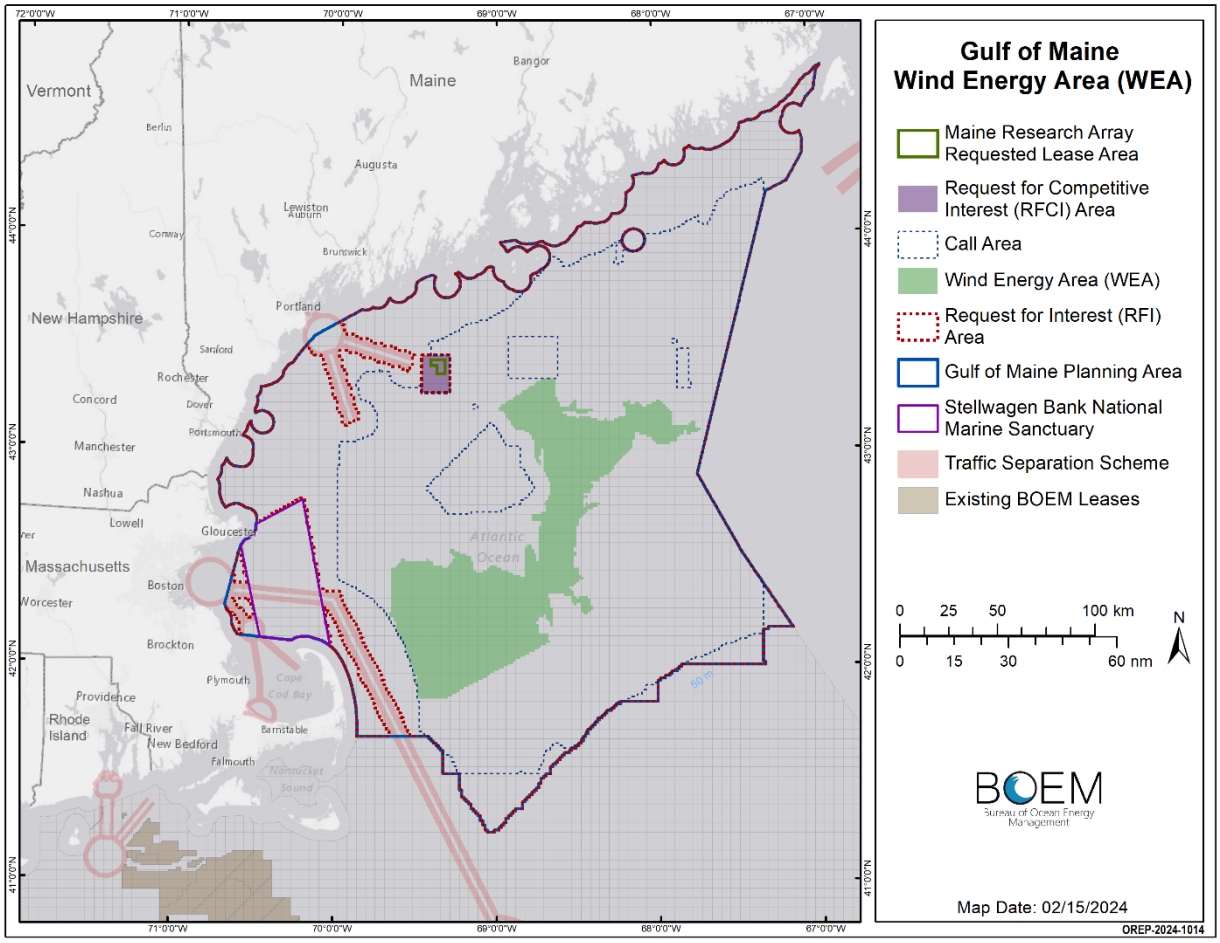


Figure 1: Map of the Recommended Final WEA in the Gulf of Maine

3) Legal Standard

Pursuant to Subsection 8(p) of the Outer Continental Shelf Lands Act (OCSLA), the Secretary of the Interior (the Secretary), in consultation with the U.S. Coast Guard (USCG) and other relevant Federal agencies, may grant a lease, easement, or right-of-way on the Outer Continental Shelf (OCS) for activities that produce or support production of energy from sources other than oil and gas (43 U.S.C. § 1337(p)(1)(C)). The Secretary must ensure that activities under this subsection are carried out in a manner that provides for 12 enumerated goals, including safety, protection of the environment, and consideration of other uses of the sea or seabed. Id. § 1337(p)(4)(A)–(L). BOEM has issued regulations governing the leasing process and management of offshore renewable energy projects. See 74 Fed. Reg. 19,638 (Apr. 29, 2009); see also 30 C.F.R. part 585.

This memorandum documents BOEM's consideration of OCSLA environmental factors and multiple uses at the Area Identification (Area ID) stage of its leasing process (43 U.S.C. § 1337(p)(4)(A), (B), (D), (F), (I), and (J)), as explained further in Section 4 below. The identification of WEAs for environmental analysis and leasing consideration does not constitute a final leasing decision. BOEM reserves the right under its regulations to issue leases in smaller, fewer and/or different areas—or issue no leases. BOEM will conduct further analysis under

OCSLA and the National Environmental Policy Act (NEPA) at subsequent stages of its regulatory process, including if and when leases are issued and wind energy facilities proposed.

4) BOEM Planning and Leasing Process for the Gulf of Maine

BOEM's planning and leasing process has regulatory requirements for public engagement through comment periods at the Call for Information (Call) and Proposed Sale Notice (PSN) stages. BOEM always works with federal, Tribal, state, and local partners, as well as stakeholders and ocean users, to gather information, data, and traditional knowledge to help identify WEAs on the U.S. OCS that appear most suitable for commercial wind energy activities and have the fewest apparent environmental and user conflicts. In the Gulf of Maine, a region with a unique ecosystem, robust fishing industry, and broad collection of historic and current maritime uses, BOEM has pursued a number of additional engagement opportunities, formal and informal, to enhance its planning process. This has included starting the process at the optional Request for Interest (RFI) stage and issuing several draft versions of planning milestones (RFI, Call, WEA) to maximize engagement opportunities and ultimately improve the planning outcomes. Throughout the planning effort to date, BOEM has engaged a wide variety of stakeholders by convening or participating in over 70 external meetings (including approximately 40 in-person) focused on the Gulf of Maine (includes Task Force Meetings, public meetings, and targeted engagement meetings with specific stakeholder groups) (Figure 2).

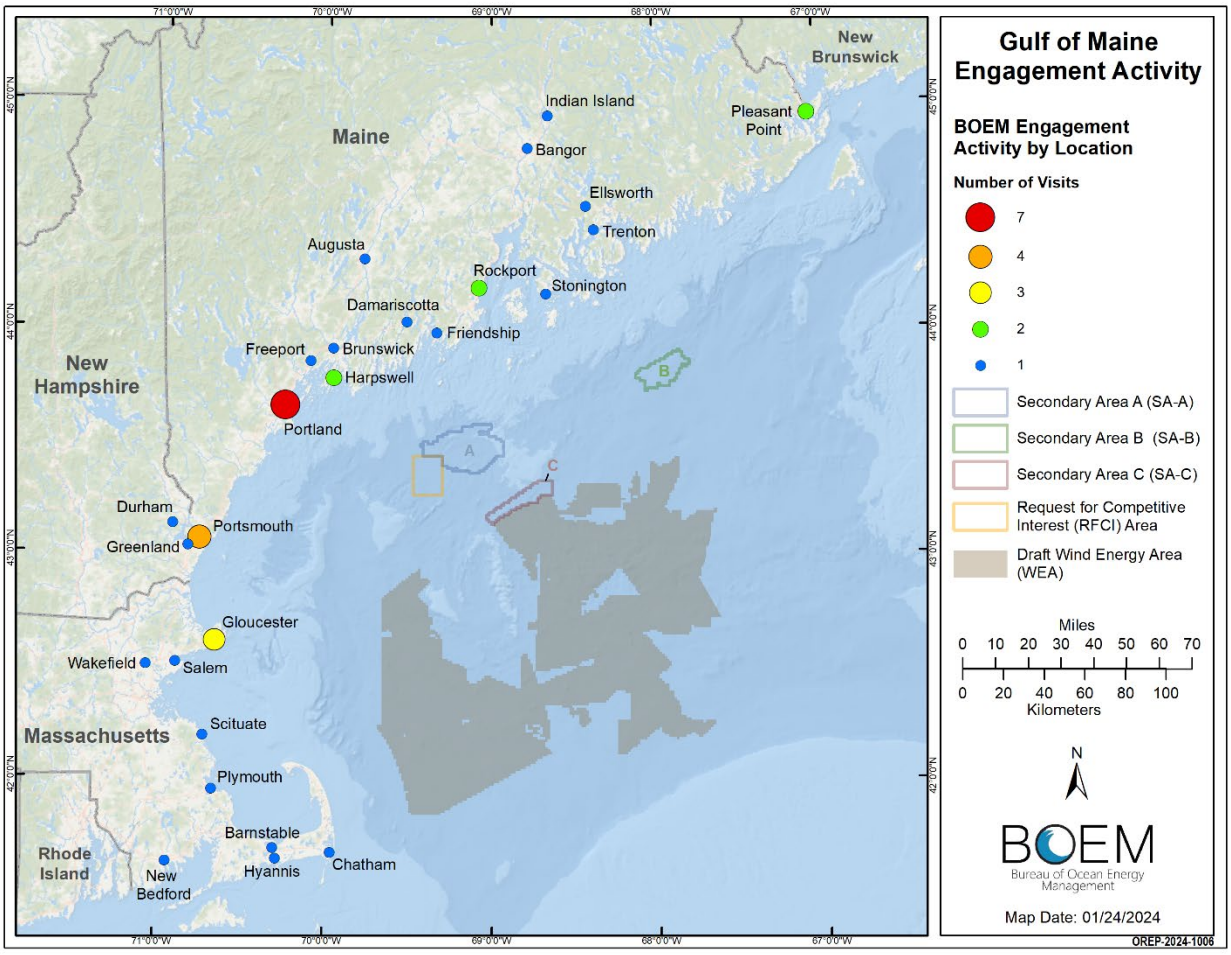


Figure 2: Gulf of Maine In-Person Engagement Meetings (includes Task Force Meetings, public meetings, and targeted engagement meetings with specific stakeholder groups). Engagement shown in the map spans 2019-2023; however, all but 5 meetings took place in 2023. Map displays Draft WEA and Secondary Areas for additional context on engagement locations.

Sections 4.1 through 4.5 summarize completed planning steps, the process for developing the recommended Final WEA, and upcoming leasing steps.

4.1 Request for Interest

On August 19, 2022, BOEM published an RFI for the Gulf of Maine in the *Federal Register*, which included a 45-day comment period. Defining the RFI Area involved removing from consideration areas BOEM deemed incompatible with offshore wind energy development. These were areas in which offshore wind energy development cannot occur as a result of law, jurisdiction, or technical considerations, and any area undergoing a separate offshore wind leasing process, including:

a) National Park System, National Wildlife Refuge System, National Marine Sanctuary System, or any National Monument (§585.204);
b) Existing Traffic Separation Schemes (TSS), fairways, or other internationally recognized navigation measures; and

c) Unsolicited offshore wind lease request areas that are the subject of a separate request for competitive interest (RFCI) (e.g., State of Maine's requested research lease).

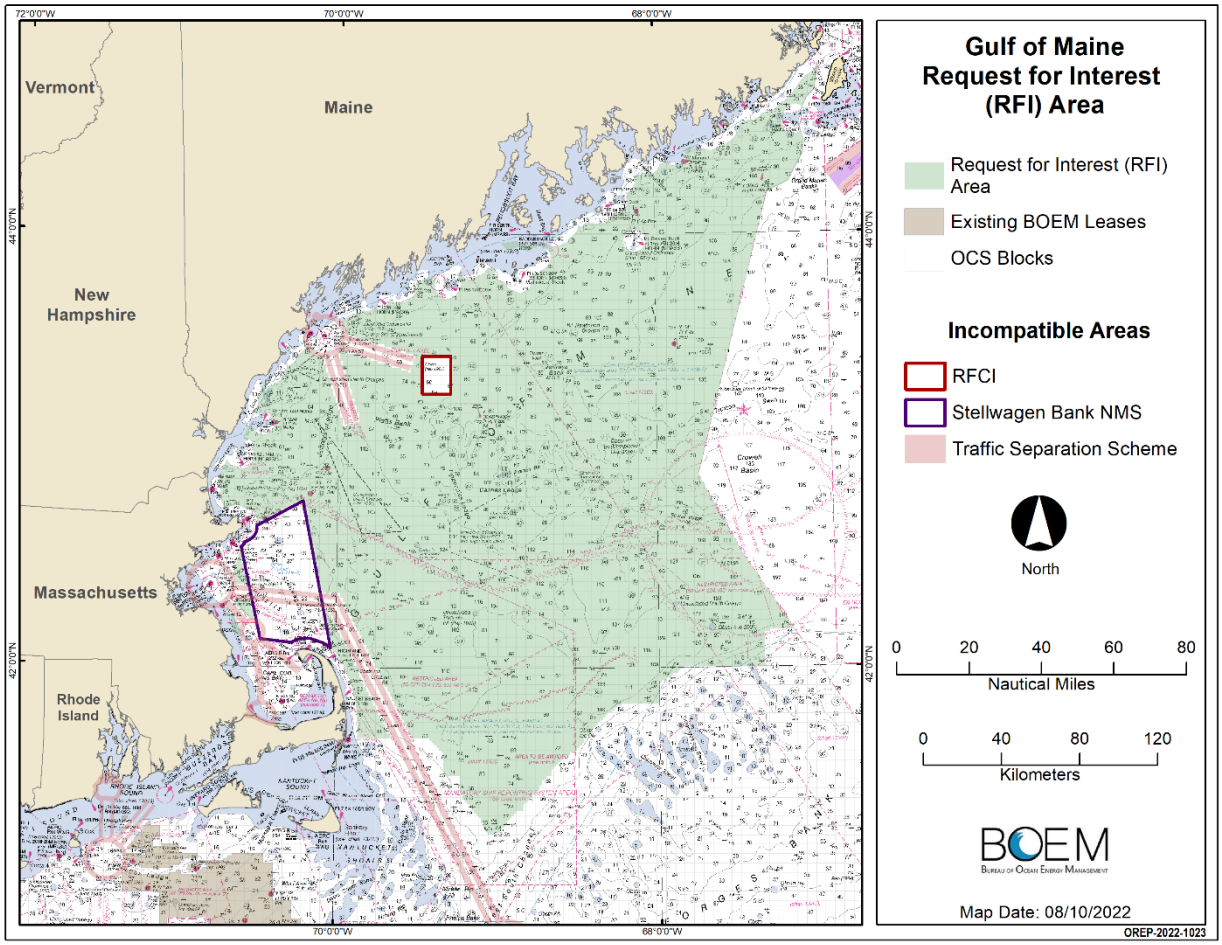


Figure 3: Gulf of Maine Request for Interest (RFI) Area

The RFI Area consisted of 13,713,825 acres (Figure 3). BOEM received wind development nominations from 5 companies, all of which have been legally, technically, and financially qualified. Nominations are available at: https://www.boem.gov/renewable-energy/state-activities/maine/gulf-maine#tabs-7676. In addition to gauging interest in the development of commercial wind energy leases within the RFI Area, BOEM also sought feedback from Tribes, stakeholders, industry, and others regarding the location and size of specific areas they wished to be included in (or excluded from) a future offshore wind energy lease sale, along with other planning considerations. Through the RFI, BOEM received 51 unique comments which are available at: https://www.regulations.gov/docket/BOEM-2022-0040. Following the close of the comment period, BOEM visited the Penobscot Nation at Indian Island in Maine to provide an update on the Gulf of Maine planning process and to begin to understand their questions and concerns about potential offshore wind energy development.

4.2 Call for Information and Nominations

The competitive lease issuance process requires the publication of a Call for Information and Nominations (Call), which requests comments from the public about areas of the OCS that they

believe should receive special consideration and analysis for the potential development of renewable energy (30 C.F.R. § 585.211(a)).

Based on feedback received through the RFI, BOEM worked with NOAA's National Centers for Coastal Ocean Science (NCCOS) to conduct spatial analysis to inform the area for a draft Call for Information and Nominations (Draft Call Area). The Draft Call Area represented a 27% reduction from the RFI Area (Figure 4).

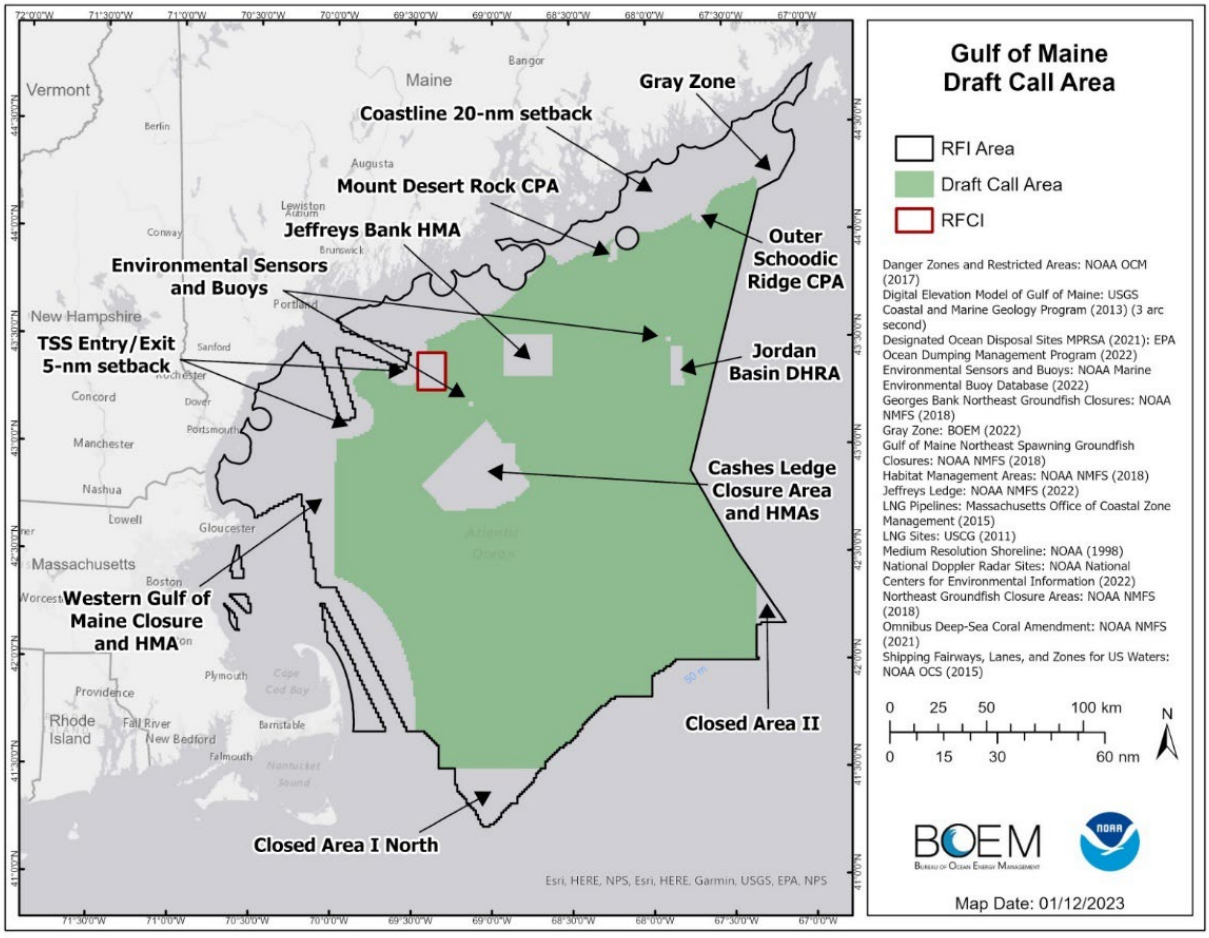


Figure 4: Gulf of Maine Draft Call Area (January 2023)

Following publication of the Draft Call Area on BOEM's website in early January 2023, BOEM held a series of in-person and virtual information exchanges to gain perspectives, feedback, and input on the Draft Call Area. In-person information exchanges were held in January 2023 in Salem, MA, Portsmouth, NH, and Portland, ME. Virtual information exchanges were held between January and March 2023, including meetings with Gulf of Maine Tribal Nations, environmental non-governmental organizations (NGOs), fisheries sectors, and the shipping and commercial maritime industry. A summary of these meetings is available at: https://www.boem.gov/renewable-energy/state-activities/gulf-maine-draft-call-area-engagement-meetings

On April 25, 2023, BOEM announced the publication of the Gulf of Maine Call for Information and Nominations (Call), which included a 45-day public comment period.

Feedback received through the early 2023 information exchanges resulted in the removal of areas from the southern edge of the final Call Area to avoid Georges Bank. BOEM also identified several areas that the stakeholders commented on most frequently during public meeting feedback opportunities (Figure 5). These areas included the North Atlantic Right Whale (NARW) Take Reduction Plan Restricted Areas, a 10-kilometer buffer from Georges Bank (defined by the 140-meter contour), Platts Bank, and Lobster Management Area (LMA) 1.

In the Call, BOEM described plans to partner with NCCOS to develop a Wind Energy Area spatial model to inform identification of Wind Energy Areas and requested input on data for consideration. Through the Call, BOEM received 127 unique comments (available at: https://www.regulations.gov/docket/BOEM-2023-0025) and 7 nominations from the wind industry (available at: https://www.boem.gov/renewable-energy/state-activities/maine/gulf-maine#tabs-7676). Comments included recommendations of specific areas to avoid for leasing, fishing data to utilize in spatial modeling, and datasets representing protected species, among others. These comments, alongside those communicated during the RFI comment period and through various engagements, were considered in the development of the Wind Energy Area spatial model described in this report.

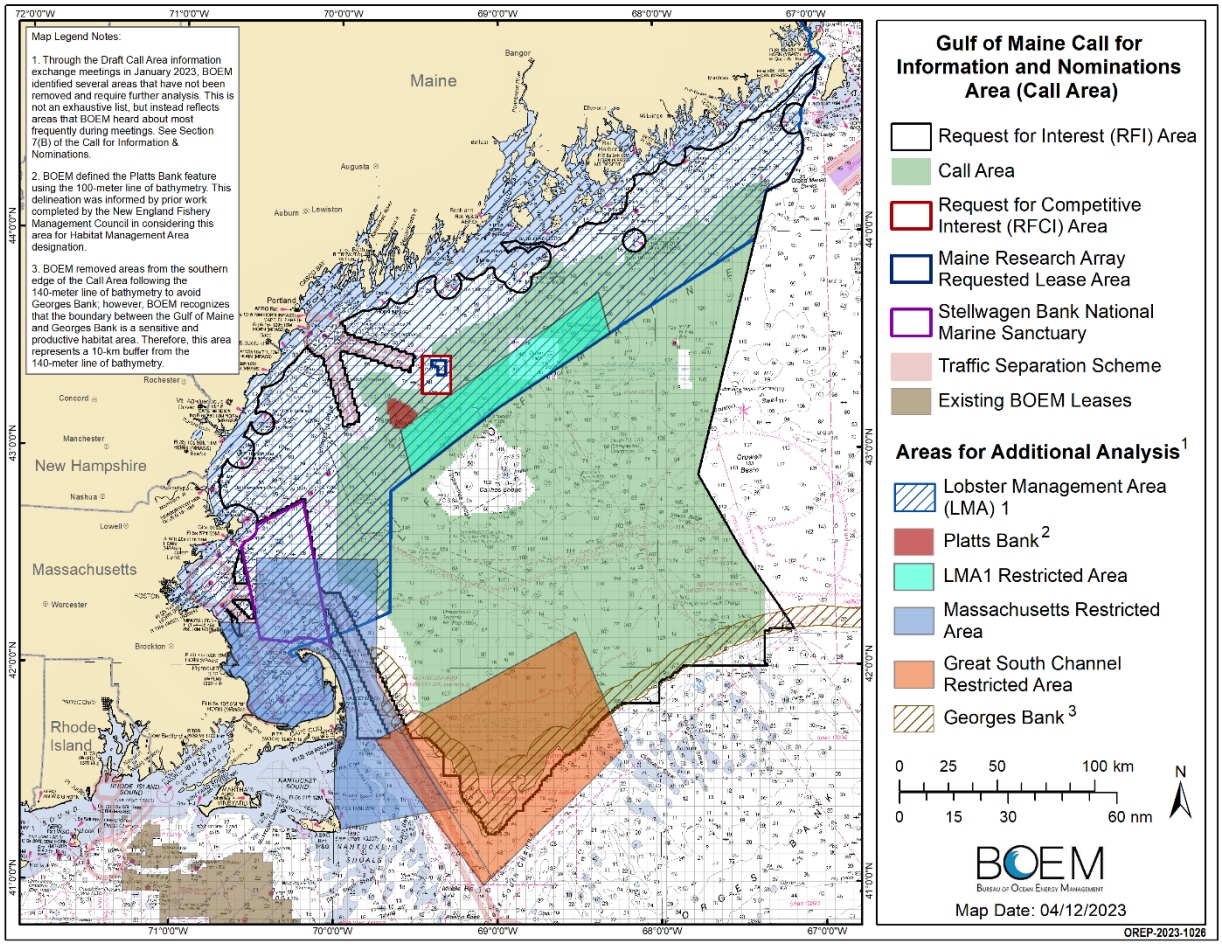


Figure 5: Gulf of Maine Call for Information & Nominations Area, including Areas for Additional Analysis

On May 10 and 11, 2023, BOEM hosted the third Gulf of Maine Intergovernmental Renewable Energy Task Force meeting in Bangor, Maine to facilitate coordination, consultation, and information sharing among federal, Tribal, state, and local governments regarding the renewable energy leasing process on the Outer Continental Shelf in the Gulf of Maine. The first day focused on three topics that are shaping the conversations about offshore wind: floating offshore wind technology, offshore wind data collection activities and associated analyses for whales and other protected species, and transmission planning. On the second day, the Task Force discussed BOEM's leasing process in the Gulf of Maine, including detailed information on commercial leasing steps as well as Maine's requested research lease. Several Tribes offered comments and concerns, including representatives from the Passamaquoddy Tribe of Indians, Indian Township; Passamaquoddy Tribe of Indians, Pleasant Point; Penobscot Nation, and Houlton Band of Maliseet Indians. Comments focused on the importance of involving Tribes in the process, seeking assurance that the submerged paleocultural heritage will be properly identified and avoided, concerns about potential increased use of a road leading to Eastport that impacts Tribal members, concerns about having enough time and resources to engage in the process, and a strong desire to ensure there are no negative impacts on ecosystems and fishing livelihoods. BOEM leadership and staff visited the Passamaquoddy Tribe of Indians, Pleasant Point, at Sipayik the day following the Task Force meeting.

Both days of the Task Force included significant opportunities for public input. Meeting materials, agendas, presentations, recordings and a summary can be found here: https://www.boem.gov/renewable-energy/state-activities/gulf-maine-task-force-meeting-may-10-11-2023.

4.3 Area Identification

An Area ID determination is a required regulatory step under the renewable energy competitive leasing process used to identify areas for environmental analysis and consideration for leasing. See 30 C.F.R. § 585.211(b). The goal of BOEM's Area ID process is to identify the offshore locations that are most suitable for leasing. The Area ID determination must take into consideration multiple competing uses and environmental concerns that may be associated with a proposed area's potential for commercial wind energy development. Potential impacts of a specific proposed renewable energy facility in the identified areas would be addressed during the review of a Construction and Operations Plan (COP) because that is when project-specific information becomes available.

In response to requests from ocean users to increase transparency in BOEM's Area ID process, BOEM modified the Area ID process in a Notice to Stakeholders issued on September 16, 2021, which is available at https://www.boem.gov/newsroom/notes-stakeholders/boem-enhances-its-processes-identify-future-offshore-wind-energy-areas. BOEM used this approach to support the identification of Draft WEAs in the Gulf of Mexico, Central Atlantic, and Oregon. As part of this process, BOEM, with support from NCCOS, developed a spatial model to inform optimal locations for the WEA in the Gulf of Maine.

The panel of maps in Figure 6 depicts the spatial evolution of the Gulf of Maine planning process for commercial wind power development to date, from RFI to the Draft WEA.

Sections 4.3.1 and 4.3.2 describe the suitability model and decision-making process to determine the boundaries of the Draft WEA and Final WEA recommendation.

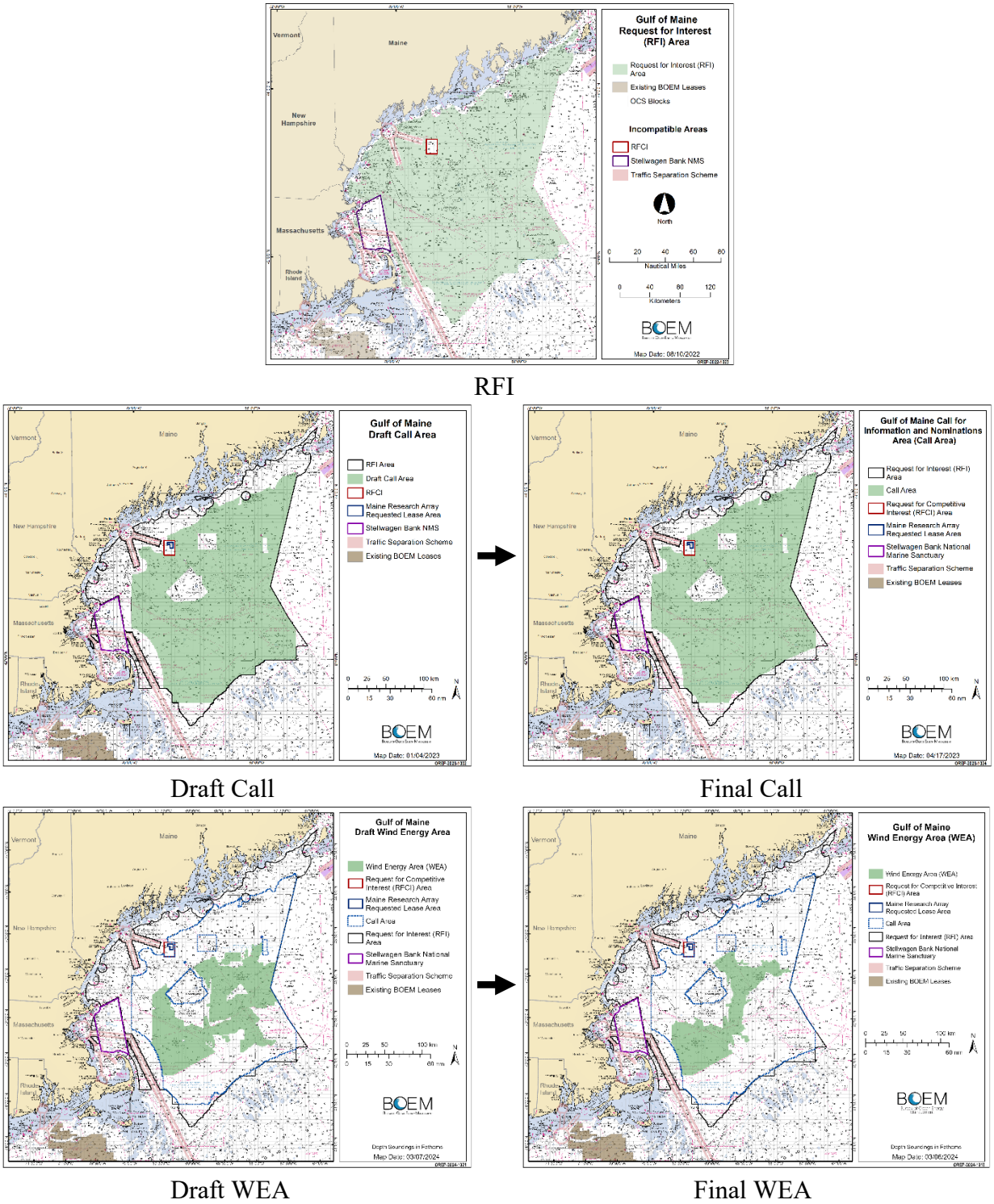


Figure 6: Gulf of Maine Spatial De-Conflicting Process: Progression from RFI, to Call, to Draft WEA, to Final WEA. A larger map of the recommended Final WEA is shown in Figure 1.

4.3.1 Draft WEA

The identification process for the Draft WEA is detailed in BOEM's 2023 Notice for Comment: Draft Wind Energy Areas – Commercial Leasing for Wind Power Development on the Gulf of Maine Outer Continental Shelf (OCS) (Docket No. BOEM-2023-0054), which is also available at: https://www.boem.gov/renewable-energy/state-activities/maine/gulf-maine. For ease of reference, that process is also summarized below.

Ahead of publication of the Draft WEA, BOEM held a series of engagement meetings in July 2023 to seek feedback to improve the spatial model developed to inform Draft WEAs. These included a virtual meeting with Federal, Tribal, and State government agencies, as well as a series of in-person and virtual meetings with fisheries stakeholders throughout the Gulf of Maine region. A summary of these meetings is available here: https://www.boem.gov/renewable-energy/state-activities/gulf-maine-person-meetings-fishing-community. BOEM also met with the Passamaquoddy Tribe of Indians, Pleasant Point, in Sipayik to share progress on the spatial modeling effort and further understand their history and concerns.

For purposes of identifying the Draft WEA, BOEM considered the following non-exclusive information sources:

- Comments and nominations received on the Call for Information and Nominations
- Comments received through the July 2023 Fishing Community Meetings
- BOEM Gulf of Maine Intergovernmental Renewable Energy Task Force meetings
- Input from state and Federal agencies
- Comments received via meetings with, and written comment from, federally recognized Tribes
- Comments from relevant ocean users and stakeholders, including the maritime community, environmental NGOs, offshore wind developers and the commercial fishing industry
- State clean energy goals
- Domestic and global offshore wind market and technological trends

BOEM identified the Draft WEA in the Gulf of Maine through use of best available science and public engagement to facilitate wind energy development; support environmental, economic, and social sustainability; and minimize resource use conflicts. With NCCOS support, a spatial model was developed to support the Area ID process. This model, known as a relative suitability model (hereinafter model), is used to understand ocean ecosystems and the interactions of human uses and natural resources. The model combines several data layers within a model structure to calculate a unique suitability score for each grid cell within a study area. The model identifies the grid cells with the highest scores and then develops heat maps that identify areas of relative suitability and conflict. This type of modeling provides a valuable tool to avoid and minimize adverse environmental, social, and existing user interactions in the process of siting WEA(s). For a detailed discussion of the model, underlying data, and its relative performance across different resource and ocean user interests, refer to the NCCOS and BOEM suitability modeling report: "A Wind Energy Area Siting Analysis for the Gulf of Maine Call Area", available at: https://www.boem.gov/renewable-energy/state-activities/maine/gulf-maine.

On October 19, 2023, BOEM published on Regulations.gov for public comment the analysis and rationale used to develop recommendations for a Draft WEA and three Secondary Areas for further analysis (Figure 7). BOEM also released a version of the Draft WEA with a grid index overlay to facilitate commenting (Figure 8). The detailed analysis and the rationale for the Draft WEA and Secondary Areas are documented in Appendix A and on the Gulf of Maine web page at https://www.boem.gov/renewable-energy/state-activities/maine/gulf-maine.

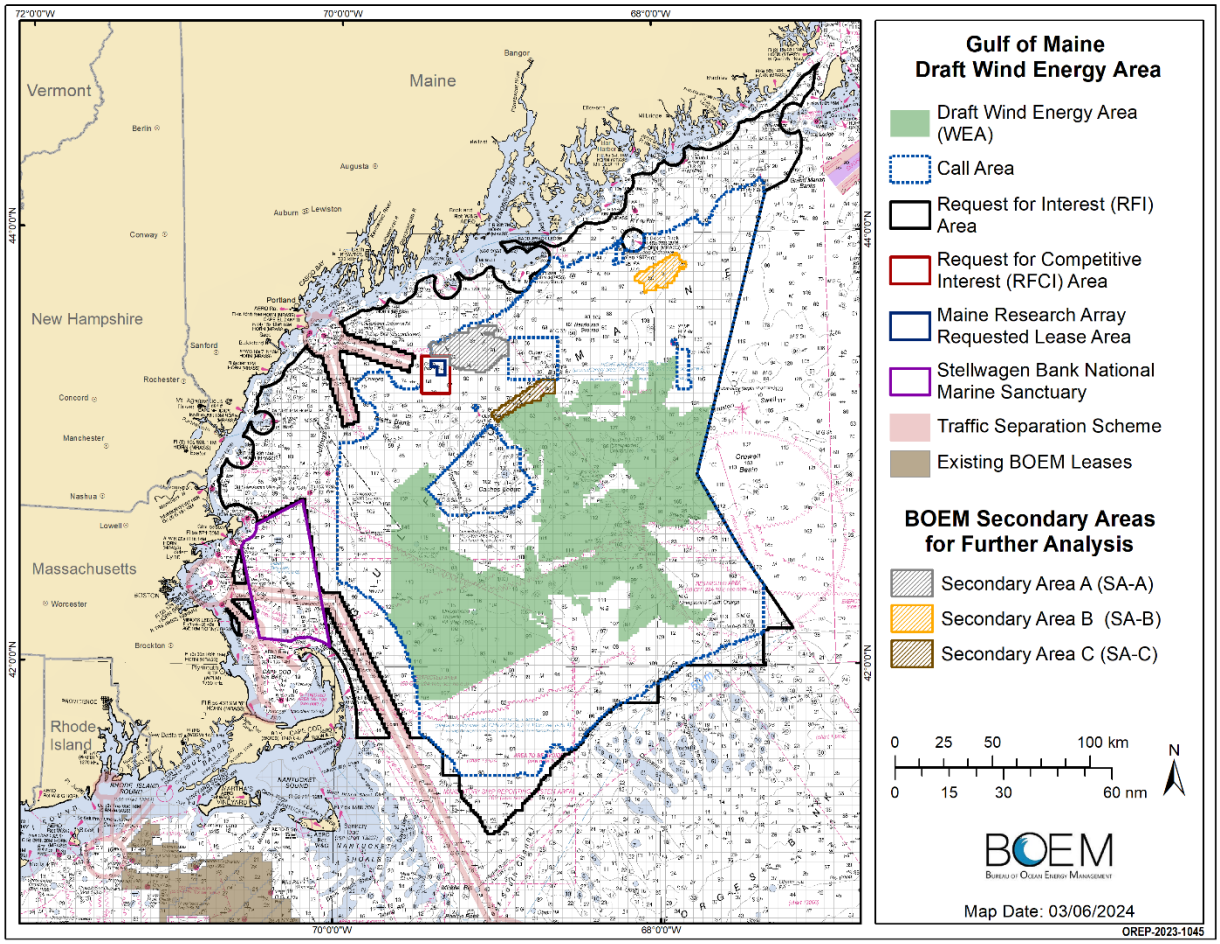


Figure 7: Gulf of Maine Draft Wind Energy Area and Secondary Areas for Further Analysis

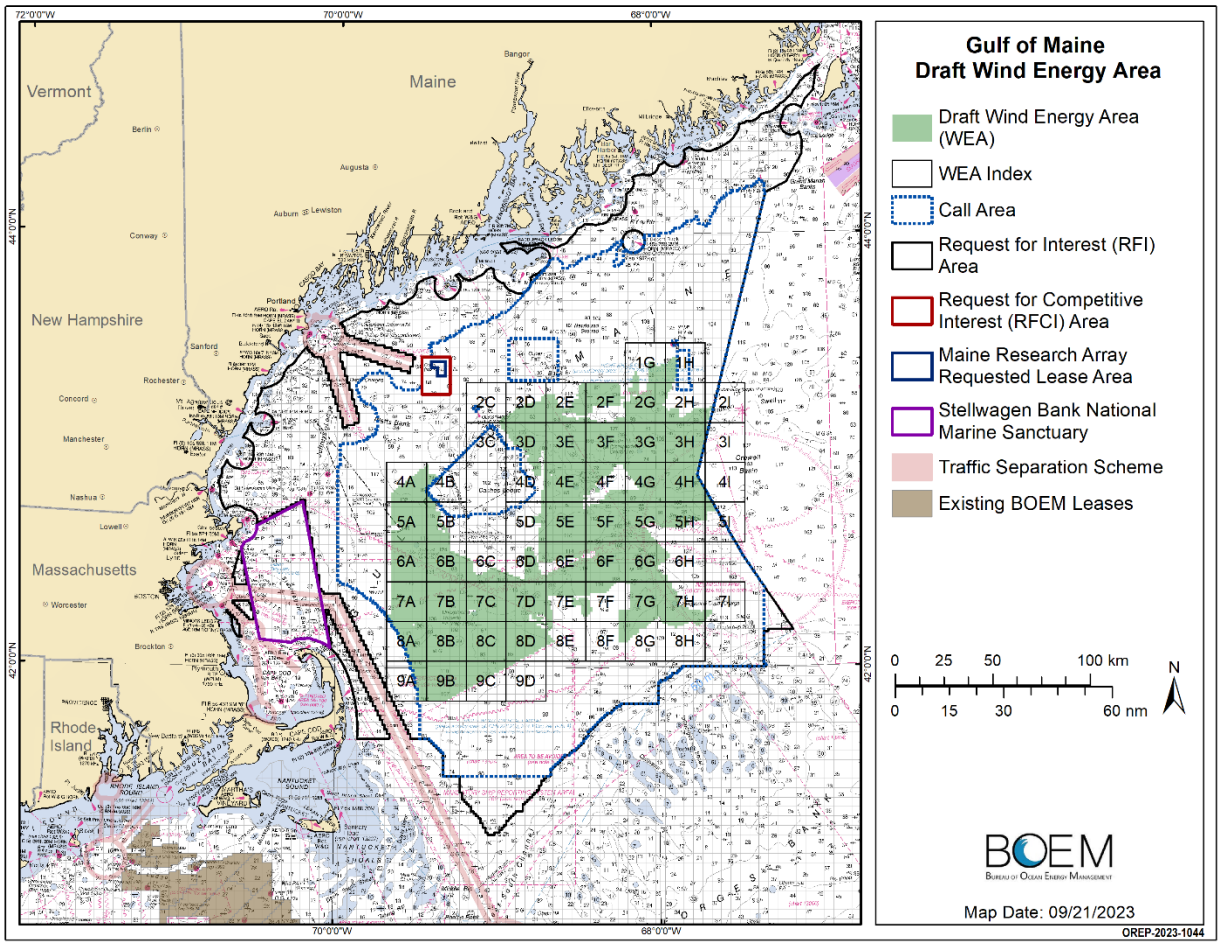


Figure 8: Gulf of Maine Draft WEA with Grid Index

During the 30-day Draft WEA comment period, BOEM held six public virtual engagement meetings to gather feedback from Federal, State and local governments, nongovernmental organizations, fishery and maritime industries, and the public at large. BOEM also held a virtual meeting for federally-recognized Tribes. Presentation materials, recordings, and meeting summaries are located here: https://www.boem.gov/renewable-energy/state-activities/gulf-maine-draft-wind-energy-area-public-meetings. In addition, BOEM held or participated in over a dozen in-person, fishery-focused, "port meetings" in a variety of communities along the Maine, New Hampshire, and Massachusetts coasts. Summaries of the port meetings are available at https://www.regulations.gov/docket/BOEM-2023-0054/. The comment period closed on November 20, 2023, and BOEM received 316 unique comments on the Draft WEA and Secondary Areas.

4.3.1.1 Draft WEA Comment Summary

BOEM reviewed the comments, identifying key recommendations and concerns, to inform the approach to the Final WEA analysis. This summary focuses on comments related to spatial considerations and ocean conflicts.

Several comments received during the Draft WEA comment period recommended that, given the area exclusions and deconfliction already achieved, BOEM should take a more focused look at remaining conflicts, narrowing the scope to resources and activities that are most likely to occur within the Draft WEA (e.g., commercial groundfishing) and/or are highly sensitive, scarce resources, (e.g., North Atlantic right whales). Fishing industry comments consistently recommended: removal of areas surrounding the Cashes Ledge Groundfish Closure and Habitat Management Area (Cashes Ledge) to preserve fishery access, removal of areas corresponding with high levels of groundfishing (e.g., top 5 quantiles of vessel monitoring system data), avoidance of LMA3 lobster fishing grounds in the eastern portion of the Draft WEA, and increasing the weight or relative importance of fishery concerns within the spatial model. BOEM also received comments regarding natural resources considerations, including specific recommendations to adjust the handling of data representing habitat features within the combined habitat layer used to determine the Draft WEA. Natural resource comments also addressed overlap of the Draft WEA with the distribution of North Atlantic right whales and seabirds. Regarding navigation, commenters recommended the creation of corridors between eventual lease areas to provide for transit and avoidance of overlap of the Final WEA with the United States Coast Guard (USCG) proposed fairway included within the Approaches to Maine, New Hampshire, and Massachusetts Port Access Route Study (MNMPARS). Further, a range of comments centered on ensuring the Final WEA remains in an area that is developable in the near term (technically and economically), including a request to retain areas within approximately 75 miles of the shoreline to preserve High Voltage Alternating Current (HVAC) transmission opportunities. Related comments also described preferred orientations of final WEAs or eventual lease areas (e.g., wider areas perpendicular to dominant wind directions) and optimal spacing (e.g., retaining sufficient acreage for eventual lease areas to be spaced appropriately to promote wake recovery).

BOEM also received comments on whether the three Secondary Areas (or a certain portion of them) should receive consideration as Final WEAs, and if so, under what recommended conditions. Comments consistently recommended removal of Secondary Areas A and B from further consideration given possible impacts to Maine's lobster fishery within Lobster Management Area 1 (LMA1), as well as impacts to Tribal fishing grounds, viewshed (i.e., Acadia National Park), nesting sea bird island habitat, and other protected resources and sensitive habitats (e.g., Toothaker Ridge). Within LMA1, Secondary Area A is located within the State of Maine's Department of Marine Resources-managed Lobster Zone D, and Secondary Area B is located within Lobster Zones A and B. The State-managed Lobster Zones restrict movement of lobster fishery effort between Zones, and commenters expressed concerns that development of leases within Secondary Areas A and B could create fishery displacement effects within Zones, with disproportionate impacts to adjacent local communities dependent upon the lobster fishery. Regarding Secondary Area C, commenters expressed concerns regarding overlap of the area with the USCG proposed fairway included within the MNMPARS, as well as concerns about the areas' proximity to the North Atlantic right whale LMA1 Restricted Area and Jeffreys Bank Habitat Management Area.

4.3.2 Final WEA

The Draft WEA (3,519,067 acres) and Secondary Areas (268,295 acres) exceeded the estimated area (approximately 800,000-1,200,000 acres)[3] needed to meet estimated regional goals for offshore wind in the Gulf of Maine (13-18 gigawatts, based on Massachusetts and Maine's offshore wind goals and estimates provided by the regional grid operator, ISO-New England). Therefore, rather than refining the existing boundaries of these areas to establish a Final WEA, BOEM decided to work with NCCOS to conduct another round of suitability modeling to narrow the area and further reduce conflicts.

4.3.2.1 Selecting an Area for Final WEA Analysis

BOEM's first step in considering refinements to the Draft WEA was to determine the area of analysis that would undergo further suitability modeling. Given that Secondary Area C is directly adjacent to the Draft WEA, BOEM decided to include it within the area of analysis. Secondary Areas A and B are not contiguous, and given their size (151,228 acres and 63,693 acres, respectively) BOEM decided that those areas did not require further suitability analysis, but rather a binary decision of whether or not they would become Final WEAs at this time. For a recommendation on next steps for Secondary Areas A & B, see Section 4.3.2.5.

4.3.2.2 Modifications to the Suitability Model

In response to feedback from engagement meetings and public comments on the Draft WEA (summarized in Section 4.3.1.1), BOEM decided to make several modifications to the suitability model for the Final WEA. The model used to inform the Draft WEA and Secondary Area boundaries looked at 24 data layers across 4 submodels: Natural and Cultural Resources (6 data layers); Fisheries (6 data layers); Industry and Operations (8 data layers); Wind (4 data layers). As recommended in several Draft WEA comments, BOEM decided to take a more focused look at remaining conflicts, narrowing the suitability model by considering several factors, including: (a) resources and activities that are most likely to occur within the Draft WEA (e.g., commercial groundfishing); (b) highly sensitive, scarce resources (e.g., North Atlantic right whales); and (c) those resources and activities with higher resolution data and greater spatial variability within the area of analysis (if available). Following this approach, BOEM requested that NCCOS construct a highly simplified suitability model (Table 2), which also removes data layers that no longer had a spatial footprint inside of the Draft WEA or Secondary Area C (e.g., Special Use Airspace Warning Area 103 (W103)). The Final WEA suitability model incorporates two data layer constraints and eight data layers contributing to the final suitability score (1-3 data layers per submodel). All four submodels have equal weight (25% each). BOEM adopted the two constraints in response to engagement and comments received on the Draft WEA. In their Draft WEA comment letter, one of the Commonwealth of Massachusetts' requests was for BOEM to remove areas that produced the top 10% of revenue for the multispecies groundfish

[3] This energy capacity density assumption is based on 4 MW/sqkm, or 0.016 MW / acre.

fishery using vessel trip report (VTR) data.[4] As noted in Section 4.3.1.1, several other commenters requested removal of key groundfishing areas, as well as avoidance of sensitive habitat, edge fishing grounds, and transit areas surrounding the Cashes Ledge groundfish closure and habitat management area. The area encompassed by the top 10% of multispecies groundfish VTR data also aligned with grid cells 4A, 4B, 5A, and 5B, which were the grid cells most frequently recommended for removal from the Draft WEA during the Draft WEA comment period for fishing conflicts and concerns about sensitive natural resources (Figure 8).

Table 2: Gulf of Maine Final WEA Suitability Model

SUBMODEL & DATA LAYERS	SCORE	WEIGHT
Constraints Submodel	**NA**	**NA**
Top 10% of Multispecies Groundfish Vessel Trip Report (VTR) data (2008-2020)	*0.0*	*NA*
5-mile buffer around Cashes Ledge Groundfish Closure and Habitat Management Area	*0.0*	*NA*
Natural & Cultural Resources Submodel	**NA**	**25% (final suitability)**
North Atlantic Right Whale Density (MDAT version 12.0)	*Z-membership*	*33% (submodel)*
Combined Habitat Layer	*Minimum Method*	*33% (submodel)*
FWS Avian Considerations	*Product Method*	*33% (submodel)*
24-nautical mile buffer from shore, including islands	*0.1*	*33% (data layer)*
BRI - Integrated seabird risk and vulnerability assessment	*0.2*	*33% (data layer)*
BRI - Tracking Data for Diving Birds	*0.3*	*33% (data layer)*
Fisheries Submodel	**NA**	**25% (final suitability)**
Fishing Footprint Raster Data (revenue) 2008-2021	*Z-membership*	*25% (submodel)*
VMS Data 2009-2021	*Z-membership*	*75% (submodel)*
Industry and Operations Submodel	**NA**	**25% (final suitability)**
NMFS Fisheries Independent Surveys	*Z-membership*	*50% (submodel)*
AIS Vessel Traffic All Vessels 2015-2022 (Fishing Vessels Removed)	*Z-membership*	*50% (submodel)*
Wind Submodel	**NA**	**25% (final suitability)**
Levelized Cost of Energy (LCOE) 2023 (NREL)	*Z-membership*	*100% (submodel)*

[4] The top 10% VTR area for groundfish used NMFS data from 2008-2020, with the Gulf of Maine Planning Area as the area for analysis.

4.3.2.3 Final WEA Suitability Model Results

The final suitability model, as described in Table 1, produced the results depicted below in Figure 9, which are shown in 10 quantiles.

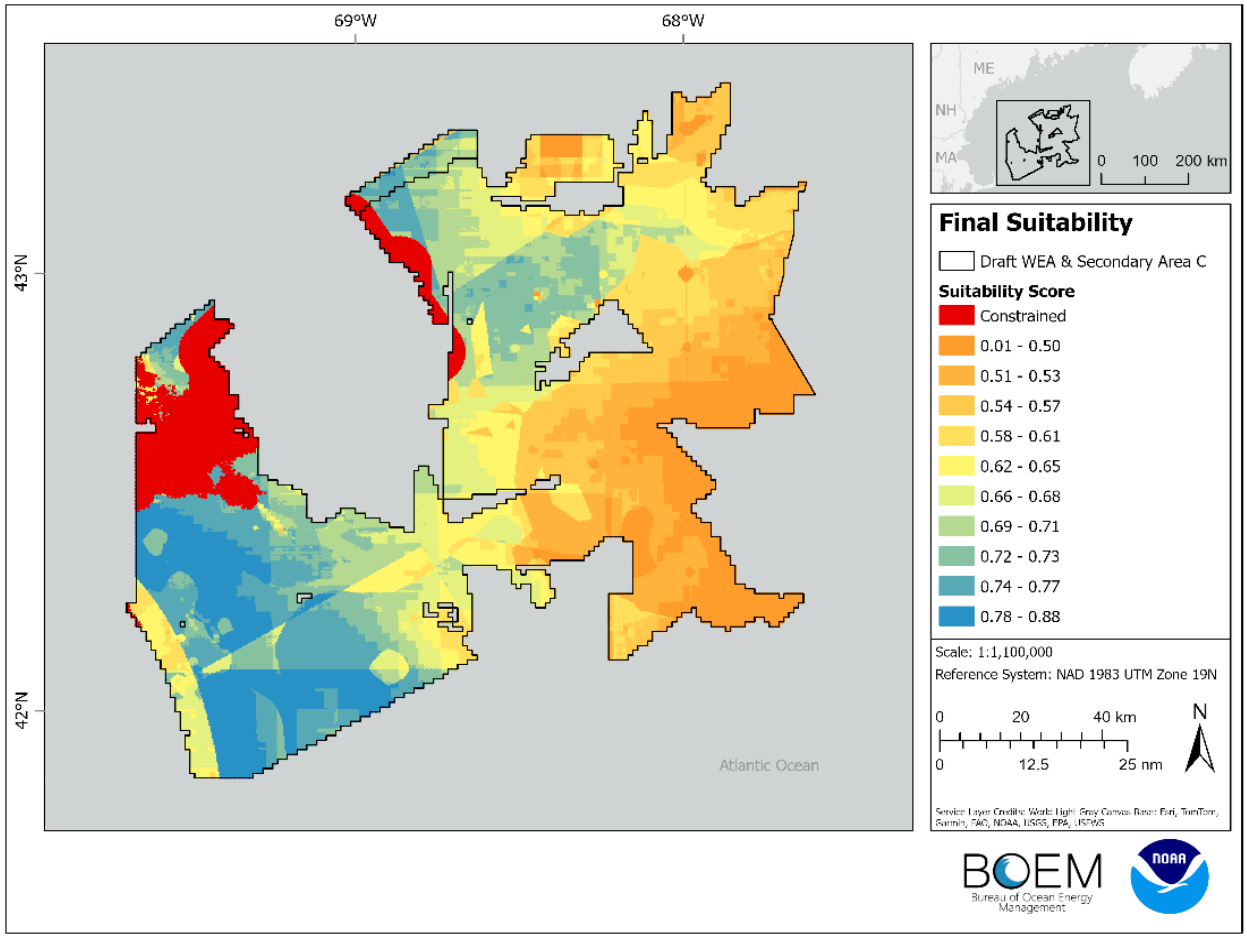


Figure 9: Final WEA Suitability Model

BOEM decided to select the area contained within the top sixty percent of suitability scores.[5] This area provides sufficient acreage to potentially meet the region's renewable energy goals (detailed in Section 4.3.2), while also achieving geographic diversity for offshore wind development to possibly benefit multiple Gulf of Maine states, and allowing for additional deconfliction to occur at the proposed sale notice (PSN) stage (e.g., removals to avoid areas of high fishing activity, vessel transits, etc.).

As a next step, BOEM worked with NCCOS to select all aliquots that overlapped with any portion of the top sixty percent area, so long as those aliquots were within the original Draft WEA and Secondary Area C boundaries, and did not overlap with a constrained area. BOEM also requested that any non-contiguous area under 40,000 acres

[5] BOEM also evaluated Local Index of Spatial Association (LISA) analyses (or 'cluster analyses'), which identify statistically significant clusters and outliers of the final relative suitability modeling results; however, did not find that the results achieved a sufficiently balanced distribution of potential WEAs across the region to allow for potential benefits of wind energy development to flow to different Gulf of Maine states.

be removed. Industry comments recommended that floating offshore wind lease areas in the Gulf of Maine be at least 85,000-150,000 acres; however, BOEM has issued commercial leases in the range of 40,000 acres in the past. Figure 10 shows the resulting selected aliquots, with areas in red removed for not reaching the 40,000-acre threshold.

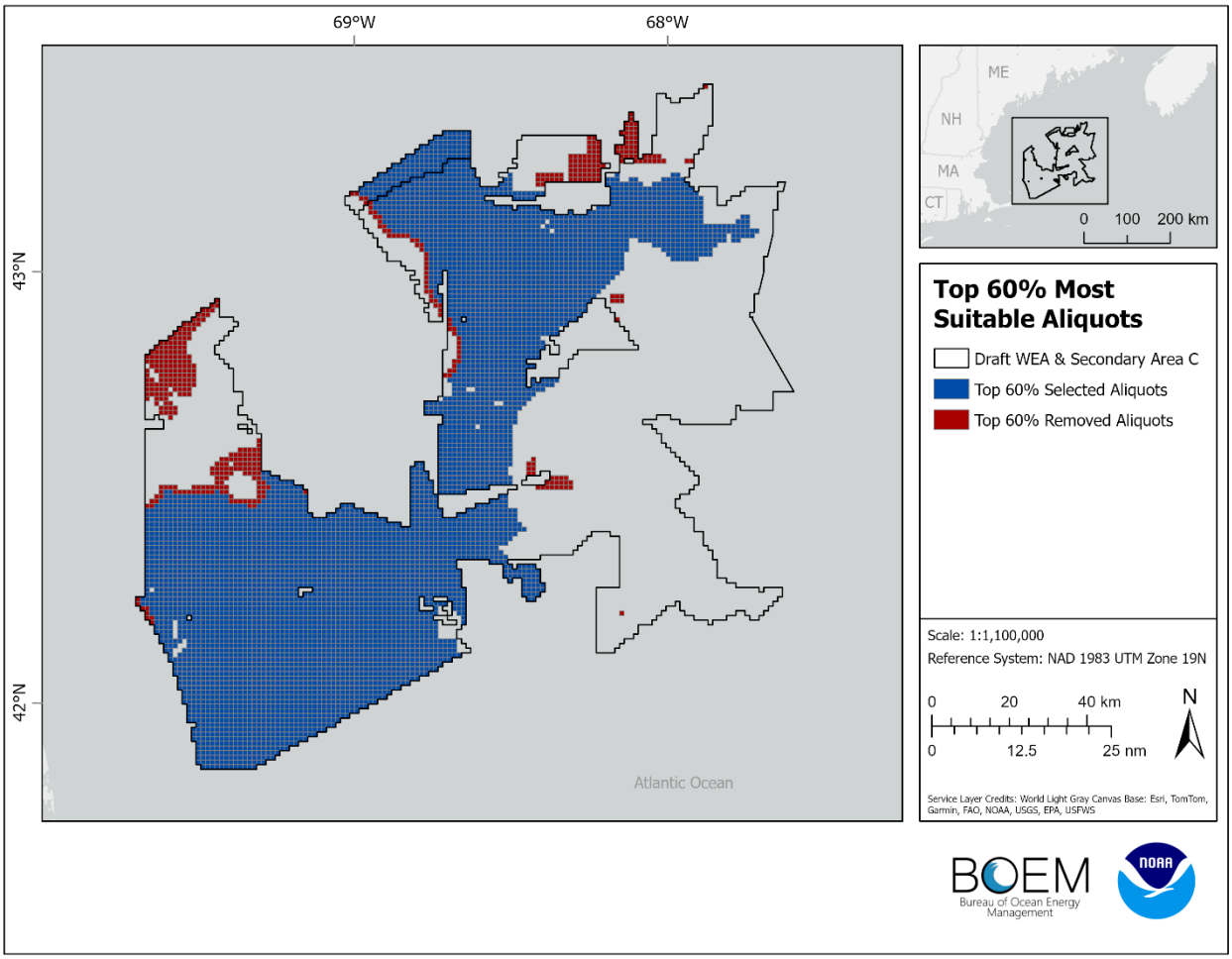


Figure 10: Final WEA aliquot selection results. Red cells indicate areas that either overlapped with constrained areas (listed in Table 2), or, following the removal of those constrained areas, resulted in non-contiguous areas that were less than 40,000 acres.

Lastly, BOEM decided to select or "fill" several aliquots that did not overlap with the top sixty percent area, but were otherwise surrounded by suitable aliquots (Figure 11). In all but one case, these were isolated areas of 1-6 aliquots. The one exception was a triangular region in the eastern portion of the recommended Final WEA. BOEM decided to select this area because, upon further analysis, it was removed from the Draft WEA boundaries primarily because it received one fewer developer nomination in response to the Call (Figure 12). In reviewing underlying data, there were not clear resource or ocean use issues that would be completely avoided by removing these aliquots. While some conflicts may exist, BOEM determined that these areas were not any more or less conflicted than their surrounding areas and will seek to address any conflicts through measures in eventual lease stipulations (should the area advance as a future lease), the project permitting process, or as conditions of any construction and operations plan

approval.

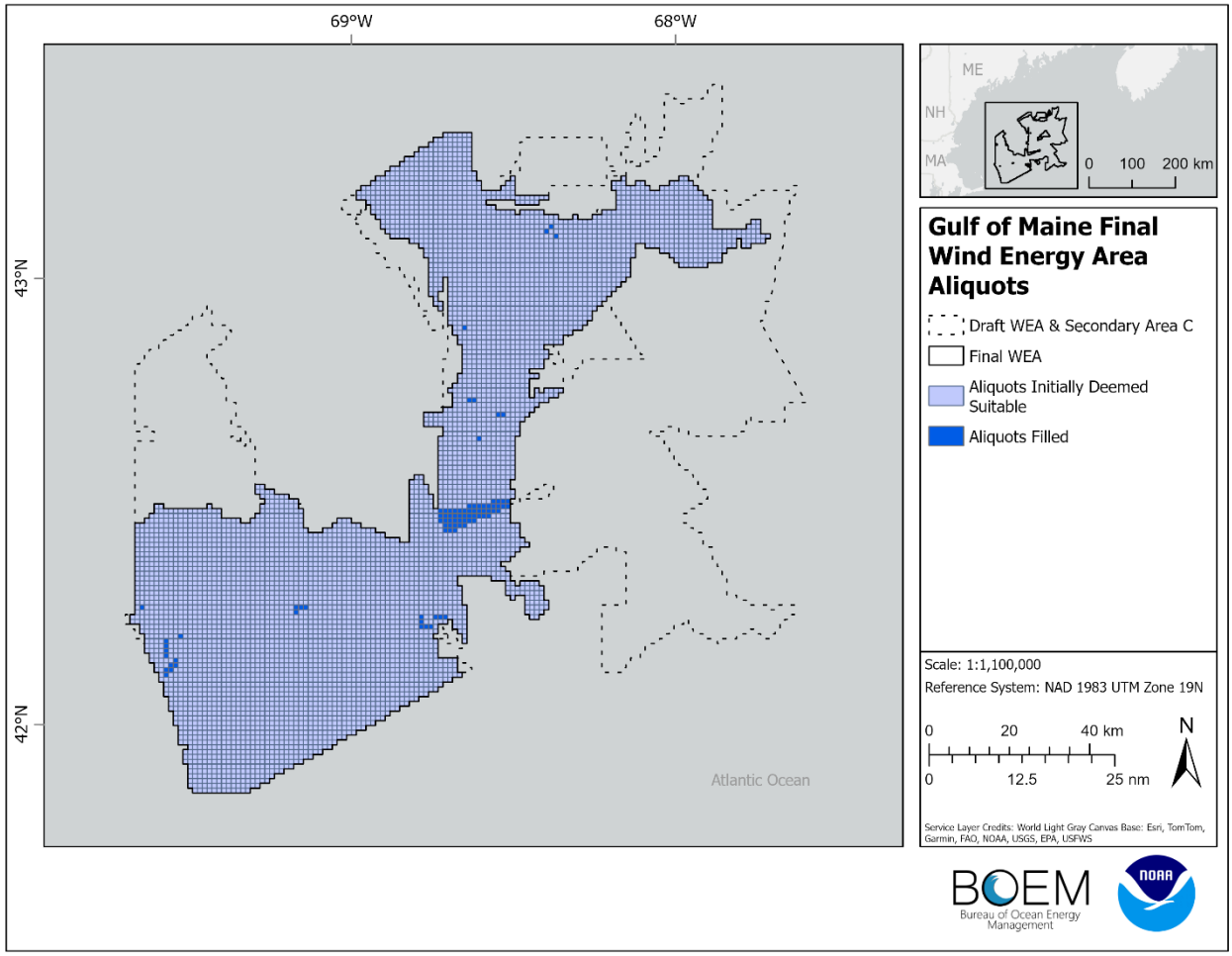


Figure 11:Recommended Area for Final WEA. BOEM selected 5,626 aliquots, totaling 2,001,902 acres

4.3.2.4 Final WEA Recommendation and Characterization

Based on the suitability analysis and aliquot selection process described in Section 4.3.2.3, BOEM identified one contiguous Final WEA (Figure 11), which consists of 2,001,902 acres. The total area of the Final WEA represents an approximately 80% reduction from the Call and 43% reduction from the Draft WEA. The recommended Final WEA has a combined capacity of 32 gigawatts (assuming a power density of 4 megawatts per square kilometer), which exceeds the current estimated regional goals for offshore wind in the Gulf of Maine (13-18 gigawatts, based on Massachusetts and Maine's offshore wind goals and estimates provided by the regional grid operator, ISO-New England).

The maximum depth across the entire recommended Final WEA is 277 meters (m), with a minimum depth of 120 m.[6] At its closest point, the Final WEA is 20 nautical miles

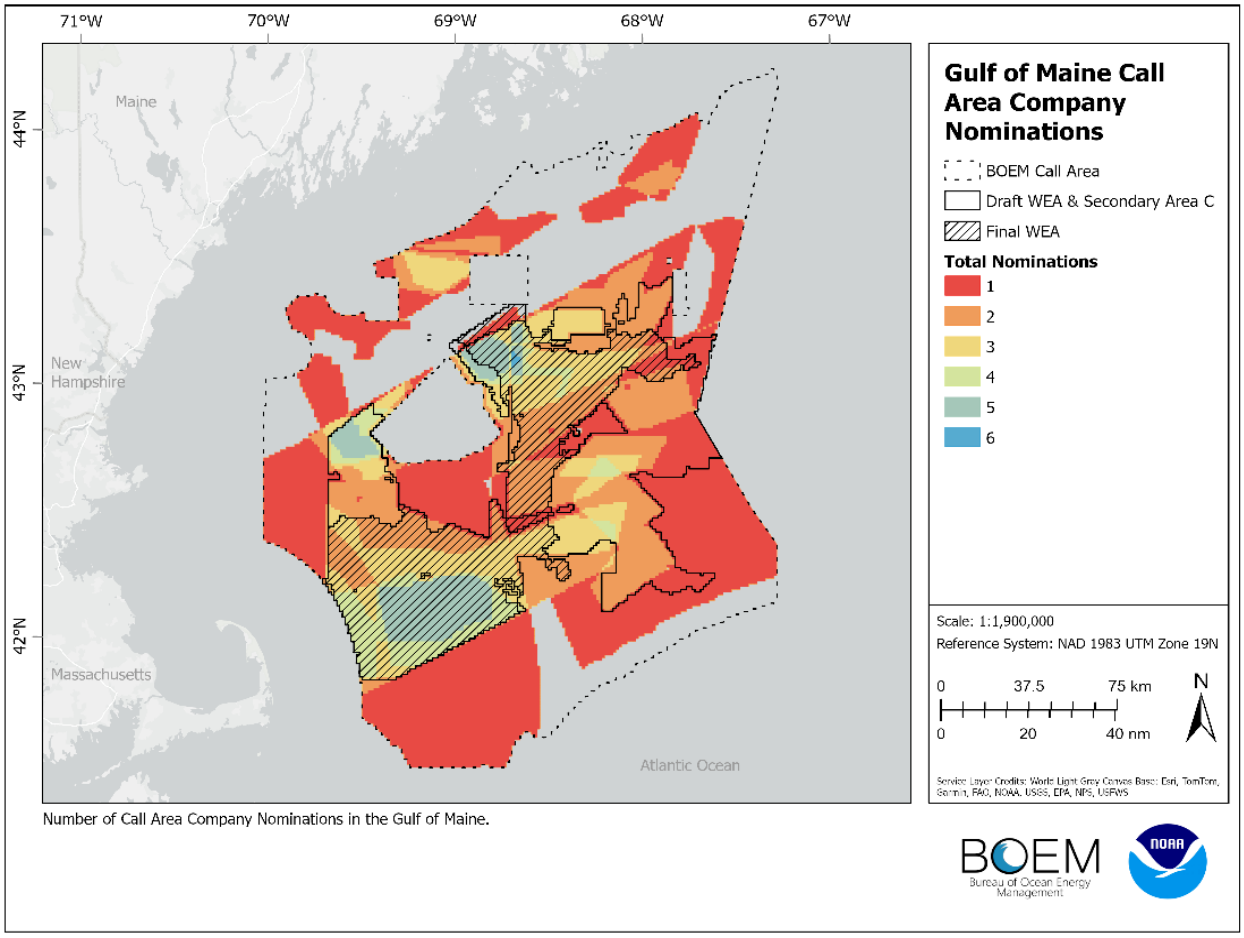
[6] Bathymetry calculations were made using the NOAA Coastal Relief Model: https://www.ncei.noaa.gov/products/coastal-relief-model

(nm) from shore (the area closest in proximity to Cape Cod), while it is 80 nm from the mainland at its farthest point.

The wind energy industry expressed interest in areas throughout the recommended Final WEA, particularly areas northeast of the Cashes Ledge Groundfish Closure Area, as well as east of Cape Cod (Figure 12). The recommended Final WEA avoids LMA1 and all NARW Restricted Areas, as well as the NARW Corridor identified by NMFS in their comment letter on the Call. The recommended Final WEA also avoids several other important fishing areas and habitats, including important groundfish areas east of the Western Gulf of Maine Closure and within the 20-kilometer buffer from Georges Bank (defined by the 140-meter line of bathymetry), the northern portion of Wilkinson Basin, edge fishing and transit areas around the Cashes Ledge Groundfish Closure, Platts Bank, Parker Ridge, Three Dory Ridge, as well as much of the offshore lobster fishing areas along the Hague Line (easternmost portion of the Draft WEA). From initial conversations with Tribal Nations located within Maine, the recommended Final WEA also likely avoids a majority of historic and present fishing grounds of those Tribes. BOEM will continue to consult with all Tribal Nations with an interest in the region to understand their concerns with potential offshore wind development, including viewshed and transmission impacts, and strive to minimize potential conflicts.

Potential spatial and environmental conflicts identified in the recommended final WEA include, but are not limited to, NMFS scientific surveys, commercial fishing (e.g., southern portion of Wilkinson Basin, northeastern part of the LMA3 lobster fishery), visual impacts to the National Seashore, and natural resources, including presence of protected species, marine birds, and deep-sea corals. Another potential spatial conflict is the current overlap of the recommended final WEA with the U.S. Coast Guard's (USCG) Maine, New Hampshire, Massachusetts Port Access Route Study (MNMPARS) recommended safety fairways. While the recommended Final WEA avoids the vast majority of the MNMPARS recommended safety fairways, there is one small area of overlap directly northeast of the Cashes Ledge Groundfish Closure, in what was formally a portion of Secondary Area C. BOEM will continue to coordinate with USCG as their rulemaking process to designate possible safety fairways continues.

Following the publication of the Draft WEA, BOEM requested the Military Aviation and Installation Assurance Siting Clearinghouse to coordinate within the Department of Defense (DoD) a review of the Gulf of Maine Draft WEA and Secondary Areas. This review concluded in December 2023, and identified potential impacts to the mission of the North American Aerospace Defense Command's (NORAD) radar. Similar impacts have been encountered with other lease areas along the Atlantic Coast and have been largely if not entirely mitigated. The Department of the Navy did not identify any conflicts with the Draft WEA or Secondary Areas; however, mitigations to resolve potential conflicts with ship testing may be necessary depending on the specific projects proposed within potential lease areas.



Number of Call Area Company Nominations in the Gulf of Maine.

Figure 12: Density of wind industry nominations within the Gulf of Maine Call Area, with an overlay of the recommended Final WEA

4.3.2.5 Deferral of portions of the Call Area outside of Recommended Final WEA

BOEM is recommending deferral of WEA identification within the entirety of the Call Area outside of the recommended Final WEA. As noted in the Draft WEA Notice for Comment (Docket No. BOEM-2023-0054), and below in Section 4.5.1, BOEM is considering a phased leasing strategy for the Gulf of Maine. While any lease areas moved forward for a lease sale in 2024 would draw from the recommended Final WEA, BOEM may receive new information in the coming years that shifts the bureau's analysis on the relative suitability of unleased areas within the Call Area (e.g., shifting distributions of protected species and/or species of fishing interest; new seafloor mapping data).

As summarized in Section 4.3.1.1, the majority of comments received on the Draft WEA (and previously on the RFI and Call Area) recommended that leasing avoid LMA1, and in particular, Secondary Areas A & B. However, in their Draft WEA comment letter, the Commonwealth of Massachusetts requested that BOEM reevaluate certain portions of LMA1, focusing on fishing activity data and revenue, along with consideration of sensitive fisheries habitats. The Commonwealth suggested this revised analysis determine whether areas within LMA1 and proposed navigational safety fairways might

be suitable for leasing, noting these areas are among the closest to load centers and possible points of interconnection (POIs). In particular, the Commonwealth requested that BOEM evaluate the suitability of a discrete area northwest of the Cashes Ledge groundfish closure for leasing suitability.

Given the lack of spatially explicit lobster data, BOEM does not recommend the designation of WEAs within LMA1 at this time, as it is extremely difficult to evaluate the relative use or value of certain areas. In addition to commercial fisheries conflicts, BOEM also received requests to remove Secondary Areas A & B due to Tribal fisheries activity (past and present), concerns about interactions with nesting seabirds, and visual impact concerns for Acadia National Park (specific to Secondary Area B), among others. BOEM is aware of new lobster vessel tracking requirements that became effective in 2023, and may revisit the suitability of leasing within LMA1 at a future date when sufficient data is available for a more robust analysis.

Any future decision to explore WEA designation outside of the recommended Final WEA would take into account the position of potentially affected Tribes and Gulf of Maine states, as well as the relevant market conditions and regional energy goals, and would be accompanied by extensive stakeholder engagement.

4.4 Environmental Review Process Following the Area ID Determination

After the Area ID determination is made, but before a lease sale occurs, BOEM will conduct environmental review pursuant to NEPA to assess the potential environmental impacts associated with lease issuance.[7] The Area ID informs the environmental review process by identifying and informing the geographic scope of environmental analysis for any future lease sales in the area. If there were a lease sale, the issuance of a lease would grant to the lessee the exclusive right to submit a plan proposing development of the leasehold to BOEM for approval. The lease would not, by itself, authorize any activity within the lease area. Therefore, BOEM does not consider the issuance of a lease to constitute an irreversible and irretrievable commitment of agency resources toward the construction of a wind energy facility. However, BOEM would prepare an Environmental Assessment (EA) before any lease sale and conduct associated consultations to consider the potential impacts from the activities that are expected to take place following lease issuance, which are site characterization activities (such as biological, geological, geotechnical, and archaeological surveys) and site assessment activities (such as meteorological and oceanographic buoy deployment).

Department of the Interior (DOI) regulations require public involvement to the extent practicable in the preparation of an EA.[8] BOEM would initiate public scoping for any Lease Sale EA concurrently with the announcement of the WEAs, and would allow for public review of the EA. DOI has issued a directive that EAs prepared by DOI bureaus must be completed within 180 days.[9] The issuance of a notice to prepare an EA would

[7] 42 U.S.C. §§ 4321 et seq.
[8] 43 C.F.R. § 46.305.
[9] Memorandum dated August 6, 2018 from the Deputy Secretary of the Interior regarding Additional Direction for Implementing Secretary's Order 3355 Regarding Environmental Assessments.

begin the 180-day timeline. Through the public scoping process, BOEM would identify a reasonable range of alternatives to the proposed action of leasing in the full WEAs, and would analyze those alternatives in the EA. The EA and associated consultations might also identify potential lease stipulations to reduce or eliminate potential environmental impacts associated with site characterization and site assessment activities. If BOEM reaches a Finding of No Significant Impact (FONSI), then BOEM could proceed with lease issuance without the preparation of an Environmental Impact Statement (EIS).

If a lease is issued and a lessee submits a COP on that lease, BOEM would consider its merits; perform the necessary consultations with the appropriate state, Federal, local, and tribal entities; solicit input from the public and task force members; and perform an independent, comprehensive, site- and project-specific environmental analysis under NEPA. This separate site- and project-specific environmental analysis for a COP, would provide additional opportunities for public involvement pursuant to NEPA and the Council on Environmental Quality regulations at 40 CFR Parts 1500–1508. BOEM would use this information to evaluate the potential environmental and socioeconomic impacts associated with the lessee-proposed project, when considering whether to approve, approve with modification, or disapprove a lessee's COP pursuant to 30 CFR 585.628.

4.5 Proposed and Final Sale Notices

If BOEM decides to offer an area(s) for lease, BOEM would publish the proposed area(s) for lease, along with the associated terms and conditions, and a proposed format of the competitive auction in a PSN issued pursuant to 30 C.F.R. § 585.216. The PSN would be followed by a formal public comment period, which helps to inform the terms and conditions of the Final Sale Notice (FSN). BOEM may use information from the NEPA analysis for any lease sale, as well as information gathered in response to the PSN, to further refine lease areas and develop lease terms and conditions. BOEM must complete the NEPA analysis prior to issuance of the FSN.

4.5.1 Phased Leasing

As first noted in BOEM's Notice for Comment on the Draft WEA (Docket No. BOEM-2023-0054), BOEM is interested in advancing a phased commercial leasing program for the Gulf of Maine, through which multiple lease sales may occur. Comments received on the Draft WEA Notice for Comment overwhelmingly supported a phased leasing approach; however, recommendations for the scale and timing of a phased leasing strategy differed greatly. BOEM is still evaluating this approach for commercial leasing and will provide more detailed information in the PSN should BOEM decide to offer an area(s) for lease.

5) Conclusion

As a result of engagement and comments received on the Draft WEA and Secondary Areas described above, BOEM recommends selection of a revised Final WEA (Figure 1).

The Final WEA recommendation totals 2,001,902 acres. This area represents an approximately 80% reduction from the Call and 43% reduction from the Draft WEA.

The recommended Final WEA has a combined capacity of 32 gigawatts (assuming a power density of 4 megawatts per square kilometer), which exceeds the current estimated regional goals for offshore wind in the Gulf of Maine (13-18 gigawatts, based on Massachusetts and Maine's offshore wind goals and estimates provided by the regional grid operator, ISO-New England).

While not all potential conflicts could be avoided in the final WEA, if areas were to move forward in the leasing process, additional public comment through a PSN will help to inform final lease area boundaries and possible lease stipulations to further mitigate potential impacts from wind energy development.

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6) Director Concurrence

☑ Yes

☐ No

ELIZABETH KLEIN

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Elizabeth Klein
Director, Bureau of Ocean Energy Management