By Electronic Mail

July 3, 2018

Mr. Jeffrey Browning
Office of Renewable Energy Programs
Bureau of Ocean Energy Management
45600 Woodland Road
VAM-OREP
Sterling, Virginia 20166

RE: Comments on Request for Feedback on BOEM's Proposed Path Forward for Future Offshore Renewable Energy Leasing on the Atlantic Outer Continental Shelf

Dear Mr. Browning,

With offshore wind development activities underway from Massachusetts to North Carolina, we stand at the vanguard of an exciting offshore renewable energy boom that will only expand (alongside increased land-based renewable energy development, energy conservation, efficiency, and building and vehicle electrification) as states along the coast continue to advance ambitious climate and clean energy goals. This is an important moment in America's pursuit of offshore wind power, and American Littoral Society, Audubon, Audubon New York, Conservation Law Foundation, Defenders of Wildlife, The Humane Society of the United States, IFAW – International Fund for Animal Welfare, Mass Audubon, National Wildlife Federation, Natural Resources Defense Council, New Jersey Audubon, NY4WHALES, Southern Environmental Law Center, Surfrider Foundation, Wildlife Conservation Society, and our collective millions of members appreciate the opportunity to provide the Bureau of Ocean Energy Management ("BOEM") with feedback on the Proposed Path Forward for Future Offshore Renewable Energy Leasing on the Atlantic Outer Continental Shelf ("RFF") [Docket no. BOEM-2018-0018].

It is our view that offshore wind energy can and must advance in an environmentally responsible manner, safeguarding valuable and vulnerable ocean habitat and wildlife while providing critically needed clean energy to power the nation. Our heavy reliance on fossil fuels has come at a great cost, exacerbating climate change, polluting air and water resources, and significantly impacting public health and wildlife, among other impacts. Responsibly developing offshore wind resources is a necessary and positive step to a clean energy economy. A responsible approach uses precautionary, science-based measures to avoid, reduce, and mitigate impacts on coastal and marine species throughout the development process. In addition, a responsible approach engages stakeholders and commits to supporting peer-reviewed science aimed at addressing key questions on the impacts of development activities and the most effective ways to manage those impacts.

The responsible development of offshore wind is needed to allow states to meet their state renewable energy goals and climate pollution reduction goals. The U.S. Department of Energy has identified significant potential growth opportunities for U.S. offshore wind by 2030. To start to bring U.S. offshore wind to scale, a key next step is for BOEM to identify additional offshore wind energy areas. As such, our

organizations support BOEM's efforts to identify new offshore wind energy lease locations and offer the following recommendations to outline a successful path forward that prioritizes conservation of our coastal and ocean resources, including marine mammals, fish, sea turtles, birds, bats, and other wildlife.[1] We stress that careful attention must be given to identifying those areas which minimize conflict with the marine ecosystem and other ocean uses, and highlight the importance of evaluating and responding to potential cumulative impacts on ocean wildlife and ecosystems over time as offshore wind energy is developed along the coast.

I. BOEM should prohibit energy leasing within Outer Continental Shelf Lands Act prohibited areas.

Under the Outer Continental Shelf Lands Act ("OCSLA"), BOEM is prohibited from leasing within the boundaries of National Park Service, National Wildlife Refuge System, National Marine Sanctuary System, and any National Monument.[2] The RFF proposes that prohibited areas under OCSLA be excluded from offshore renewables siting, specifying the agency is considering OCSLA prohibited areas as an exclusionary factor, "creating 'no-go' areas for offshore wind."[3] We support the addition of this exclusionary factor as it will keep these areas of significant environmental value intact to secure the health of the larger marine ecosystem and will allow sites with the greatest potential for environmentally responsible development to advance.

We further note that OCSLA leasing prohibitions also encompass withdrawals under Section 12(a), which states, "The President of the United States may, from time to time, withdraw from disposition any of the unleased lands of the outer Continental Shelf."[4] In December 2016, 3.8 million acres of the North and Mid-Atlantic Outer Continental Shelf, including 31 submarine canyons – "critical ecological hotspots" – were permanently withdrawn from all mineral disposition under OCSLA 12(a); this area and any other future Atlantic withdrawals should receive the same exclusionary status BOEM offers for renewables above.[5]

II. BOEM should prioritize research that advances understanding of how exploration and development activities would impact North Atlantic right whales prior to siting forecast areas in important right whale habitat.

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[1] Request for Feedback on BOEM's Proposed Path Forward for Future Offshore Renewable Energy Leasing on the Atlantic Outer Continental Shelf, 83 Fed. Reg. 14,881 (Apr. 6, 2018).

[2] 30 C.F.R. § 585.204.

[3] Request for Feedback on BOEM's Proposed Path Forward for Future Offshore Renewable Energy Leasing on the Atlantic Outer Continental Shelf, 83 Fed. Reg. 14,881 (Apr. 6, 2018) *at* 14,882.

[4] 43 U.S.C. § 1341(a) (1994).

[5] Statement by the President on Actions in the Arctic and Atlantic Oceans, National Archives and Records Administration, December 20, 2016, https://obamawhitehouse.archives.gov/the-press-office/2016/12/20/statement-president-actions-arctic-and-atlantic-oceans. U.S. Department of the Interior, Press Release, "Secretary Jewell Applauds President's Withdrawal of Atlantic and Arctic Ocean Areas from Future Oil and Gas Leasing," December 20, 2016, https://www.doi.gov/pressreleases/secretary-jewell-applauds-presidents-withdrawal-atlantic-and-arctic-ocean-areas-future.

The conservation status of the North Atlantic right whale is dire. Recent scientific analysis, considered the best available science by the National Oceanic and Atmospheric Administration ("NOAA"),[6] confirms that the species has been declining since 2010 and only approximately 450 individuals were estimated to remain at the end of 2015. At least another 18 individuals have died since that time, leading the National Marine Fisheries Service ("NMFS") to declare an Unusual Mortality Event ("UME") in June 2017.[7] Moreover, females are more negatively impacted than males, now surviving to only 30-40 years of age with an extended inter-calf interval of approximately ten years.[8] To our knowledge, no calves have been born in this year. If these trends continue, the North Atlantic right whale may be functionally extinct in 20 years or less.[9] Given its critically endangered status, it is imperative that all potential stressors acting on this species be avoided when possible, and minimized and mitigated to the fullest extent practicable.

Under the auspices of the Endangered Species Act ("ESA"), NOAA designated critical habitat for the North Atlantic right whale in 1994[10] and expanded the critical habitat to two new areas in 2016.[11] The first critical habitat area, located in the Northeast U.S., contains the identified physical and biological features of foraging habitat that are essential to the conservation of North Atlantic right whales. This encompasses a large area within the Gulf of Maine and Georges Bank region, including the large embayments of Cape Cod Bay and Massachusetts Bay, and deep underwater basins. This area also incorporates state waters, except for inshore areas, bays, harbors, and inlets, from Maine through Massachusetts, in addition to federal waters.[12] The second critical habitat area, located in the Southeast U.S., contains the essential features identified for North Atlantic right whale calving. The southeast right whale calving area consists of all marine waters from Cape Fear, North Carolina, southward to approximately 27 nautical miles below Cape Canaveral, Florida.[13] The geographic extent of these areas and the well-known Atlantic migratory path of the North Atlantic right whale, including an important

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[6] NOAA-NMFS, "North Atlantic right whale (*Eubalaena glacialis*): Western Atlantic stock," February 2017, https://www.nefsc.noaa.gov/publications/tm/tm241/8_F2016_rightwhale.pdf; Corkeron PJ & Pace III RM (2017) *Review 2017 draft SAR*. Presentation at ALWTRT, Nov 30, 2017, https://www.greateratlantic.fisheries.noaa.gov/protected/whaletrp/trt/meetings/2017%20Nov/corkeronalwtrtnov2017.pdf

[7] NOAA-NMFS, "North Atlantic right whale Unusual Mortality Event," https://www.fisheries.noaa.gov/national/marine-life-distress/2017-2018-north-atlantic-right-whale-unusual-mortality-event. Please note that in addition to the North Atlantic right whale, UMEs have also been declared for the Atlantic population of humpback whales in April 2017 and minke whales in January 2018. Elevated numbers of humpback whales have been found stranded along the Atlantic Coast since January 2016, and in a little over two years, 63 humpback whale mortalities have been recorded (data through May 29, 2018), with strandings occurring in every state along the east coast. Twenty-nine minke whales have stranded between Maine and South Carolina from January 2017 to January 2018; at least 28 of those strandings resulted in mortality. *See*, NOAA-NMFS, "2016-2018 Humpback whale Unusual Mortality Event along the Atlantic Coast," https://www.fisheries.noaa.gov/national/marine-life-distress/2016-2018-humpback-whale-unusual-mortality-event-along-atlantic-coast l; NOAA-NMFS, "2017-2018 Minke whale Unusual Mortality Event along the Atlantic Coast," https://www.fisheries.noaa.gov/national/marine-life-distress/2017-2018-minke-whale-unusual-mortality-event-along-atlantic-coast.

[8] Pace III, R.M, Corkeron, P.J., and Kraus, S.D., "State-space mark-recapture estimates reveal a recent decline in abundance of North Atlantic right whales," *Ecology and Evolution*, vol. 7, no. 21, pp. 8730-8741 (2017); Kraus SD, "*Marine mammals in the Anthropocene: Keeping endangered from becoming extinct*," Plenary speech, Society of Marine Mammalogy Biennial, Halifax, Canada (23 Oct 2017).

[9] Pace III, R.M, *et al*., "State-space mark-recapture estimates reveal a recent decline in abundance of North Atlantic right whales," *supra* note 8; *see, also*, https://www.theguardian.com/environment/2017/dec/10/north-atlantic-right-whales-extinct.

[10] Designated Critical Habitat; Northern Right Whale, 59 Fed. Reg. 28,805 (June 3, 1994).

[11] Endangered and Threatened Species; Critical Habitat for Endangered North Atlantic Right Whale, 81 Fed. Reg. 4,838 (January 27, 2016).

[12] *Id*.; *For map, see:* http://www.nmfs.noaa.gov/pr/species/critical%20habitat%20files/ne_narw_ch.pdf.

[13] *Id*.

transit area along the narrow coastal shelf off the coasts of North Carolina and southern Virginia,[14] require BOEM to consider them in a regional context, rather than solely at the site-specific scale.[15]

Considering the elevated level of threat to the North Atlantic right whale, we recommend that, at minimum, forecast areas not be sited in North Atlantic right whale foraging or calving critical habitat, as defined under the ESA, until peer-reviewed scientific research determines that offshore wind activities will not adversely impact North Atlantic right whales or modify their behavior or habitat.

III. BOEM should consider threats to avian species and conduct additional research to minimize impacts of wind turbine construction and operation on native bird species.

Many seabird species are spectacularly mobile, travelling thousands of miles across international waters only to return to land to breed. They face many serious conservation challenges and seabirds are now one of the most threatened groups of birds. Birds in the Atlantic are protected by federal laws and treaties including, but not limited to, the Migratory Bird Treaty Act of 1918 (all non-game birds) and ESA (Red Knot, Roseate Tern, Piping Plover). Collisions with wind turbines have been identified as a possible threat to seabird populations, especially in Europe, where offshore wind energy development has become a significant part of the energy infrastructure. Some scientists have found that there is little evidence of collision-caused mortality, while others point out that direct mortality is difficult to quantify and that even low levels of mortality can be devastating for long-lived seabirds that are already experiencing significant stresses and population declines.[16] Birds can be attracted to turbine lighting and perching opportunities, which increases collision risk. However, direct collision with turbines is not the only threat to avian species: birds can also be displaced from important foraging grounds or migratory pathways.[17] Potential impacts to migratory songbirds during migration also need to be evaluated.

A significant challenge in planning the development of environmentally-responsible wind energy is determining the degree to which bird species will be affected across a variety of weathers and seasons. Therefore, we recommend ongoing monitoring and documentation of the interactions between avian life and offshore wind energy development. Previously-undertaken European studies can help to inform

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[14] Hodge KB, Muirhead CA, Morano JL, Clark CW, Rice AN., "North Atlantic right whale occurrence near wind energy areas along the mid-Atlantic US coast: implications for management," *Endangered Species Research*, 28: 225–234 (2015). And see also, Figure 3 in Davis, G, Baumgartner, M, J. Bonnell, J. Bell, *et al*., "Long-term passive acoustic recordings track the changing distribution of North Atlantic right whales (*Eubalaena glacialis*) from 2004 to 2014," *Scientific Reports*, 7: 13460 (2017).

[15] Request for Feedback on BOEM's Proposed Path Forward for Future Offshore Renewable Energy Leasing on the Atlantic Outer Continental Shelf, 83 Fed. Reg. 14,881 (Apr. 6, 2018) *at* 14,882.; A recommendation for both a site-specific and regional-specific research focus for the North Atlantic right whale, and other species of protected large whale and sea turtles, was also made by the subject matter experts attending the MassCEC/BOEM "Offshore Wind Marine Science Framework Workshop," May 30-31, 2018, New Bedford, MA. Workshop report forthcoming.

[16] Winkleman, J., 1992. The impact of the Sep Wind Park near Oosterbierum, the Netherlands, on Birds 1: collision victims., (RIN – 92-2), Netherlands. Painter, S., Little, B. & Lawrence, S., 1999. *Continuation of Birds Studies at Blyth Harbour Wind Farm and the Implications for Offshore Wind Farms*, London: Report by Border Wind Limited to the UK Department of Trade and Industry. ETSU W/13/11485/00/11. Erickson, W. P. et al., 2001. *Avian Collisions with Wind Turbines: A Summary of existing Studies and Comparisons to Other Sources of Avian Collision Mortality in the United States*, Washington: National Wind Coordinating Committee (NWCC) Resource Document.

[17] Masden, E. A. et al., 2009. "Barriers to movement impacts of wind farms on migrating birds." *ICES Journal of Marine Science*, 66(4), pp. 746-753.

developers and managers to reduce threats to seabirds from offshore wind, but additional regionally specific studies will be needed to guide the development of the industry off the Atlantic.

There are a variety of methods used by researchers to survey offshore bird populations, including aerial surveys, radar-based surveys, and other observation techniques. A combination of these should be applied to accurately assess bird populations in a region both prior to and after construction. There should be a mechanism or process in place for factoring in data collected as part of pre- and post-studies (*e.g.*, on which bird populations are impacted by wind turbine construction and operation and displacement effects) to inform future leasing and construction of offshore wind.

BOEM's appraisal of possible lease areas should be conducted in such a way as to minimize effects on birds. To meet the criteria, BOEM should account for several factors when considering development in a region, in assessing cumulative effects, and determining if additional areas should be leased. These include the number of migrant species present, the number of endangered or declining avian species present, and the percentage of birds that fly at heights that would put them in the path of turbines, especially within the rotor swept zone. It is imperative that the data gaps surrounding these factors be addressed and researched prior to a decision being made about wind energy development in any specific region.

IV. BOEM should proceed carefully in areas of ecological significance.

We are extremely disappointed by the Trump Administration's recent decision to abolish the Mid-Atlantic and Northeast Regional Planning Bodies ("RPB") which have been deeply engaged in important efforts to improve ocean health, including by the identification of a suite of Ecological Rich Areas ("ERAs"), also known as Important Ecological Areas ("IEAs").[18] ERAs/IEAs are special ocean places that are critical to ocean ecosystem function, resilience, and recovery and understanding the locations of ERAs /IEAs will allow for improved transparency of ecologically significant places that warrant particularly careful consideration in siting decisions.[19] ERA/IEAs offer a solution to BOEM's concerns that many environmental considerations are site-specific and therefore irrelevant to discussion at a

[18] *Executive Order Regarding the Ocean Policy to Advance the Economic, Security, and Environmental Interests of the United States*, June 19, 2018. https://www.whitehouse.gov/presidential-actions/executive-order-regarding-ocean-policy-advance-economic-security-environmental-interests-united-states/.; Deerin Babb-Brott, Communication at the Northeast Regional Planning Body Meeting, June 21, 2018.

[19] Please note that taking steps to conserve the functioning of ERA/IEAs does not mean closing them off to human use; activities may occur so long as the areas' ecological value is conserved. ERAs/IEAs contribute significantly to overall ecosystem heath by hosting a high diversity and/or abundance of wildlife or that are especially unique or sensitive: "An ERA [or IEA] could contain one or more of five different components: productivity, abundance, biodiversity, rarity and vulnerability. Understanding where these areas are and how they change seasonally and over longer periods of time is expected to result in better-informed management decisions." Mid-Atlantic Regional Planning Body, *Synthesis Options Paper*, October 16, 2017, *at* 1, available at https://www.boem.gov/ERA-Component-Synthesis-Options/. *See*, also, *Final Framework for the Identification of Ecologically Rich Areas, available at*: https://www.boem.gov/Final-Framework-for-Identifying-ERAs/. Component categories are the result of extensive dialogue in the Mid-Atlantic and the Northeast's science community, public comment on the *Draft Framework for Identification of Ecologically Rich Areas*, and a series of stakeholder workshops. Additional information on the Northeast Regional Planning Body's Ecosystem-Based Management Work Group is *available at* http://neoceanplanning.org/about/northeast-rpb/.

regional or coastwide level.[20] The regions have invested years of effort to identify and vet appropriate data products for each ERA/IEA component in the regions and intend to update the Northeast and Mid-Atlantic Ocean Data Portals ("Data Portals") to reflect their findings.[21] We share BOEM's belief that "use of the Data Portals will lead to a better shared understanding of who or what might be affected by a given proposed activity" and urge the agency to carefully consider the identified ERA/IEA components in its decision making, as well as ERA/IEAs that regions identify based on this work.[22]

We further stress that even without the benefit of a finalized suite of ERAs/IEAs, ample scientific literature exists regarding several ecological hotspots and/or areas of rare environmental significance along the Atlantic Coast. Siting and development decisions should carefully consider the risks and the mitigation measures necessary to fully conserve the ecological integrity of these important places.

Below, please find a list of ecologically significant areas for which there is a sufficient scientific basis for protection and that could experience development pressure from offshore wind projects or their associated transmission infrastructure within the next three to five years. Please note that this list is not exhaustive or presented in order of importance and it is not intended to foreclose consideration of protection for other areas. As BOEM's offshore wind program is built out, information about actual versus projected effects on species, habitats and ecological integrity should continually be compiled and analyzed to develop the best possible understanding of both site-specific and cumulative impacts, and used to advise siting decisions.

CetMap Biologically Important Areas

In 2015, the Cetacean Density and Distribution Mapping ("CetMap") Working Group – part of NOAA's CetSound program – formally identified Biologically Important Areas ("BIAs") for 24 cetacean species, stocks, or populations in seven regions within U.S. waters, including the East Coast. These BIAs were based on extensive review and synthesis of published and unpublished information by more than 70 experts. BIAs represent reproductive areas, feeding areas, migratory corridors, and areas in which small and resident populations are concentrated, and are region-, species-, and time-specific.[23] Therefore, BIAs not only define areas where individuals of a species, stock, or population are likely to be aggregated in space and time, but also where and when they are engaged in biologically important behaviors, such as breeding or feeding. As such, anthropogenic impacts to BIAs would be expected to have disproportionately negative consequences for the species, stock, or population in question. Notably, BIAs were created to "aid NOAA, other federal agencies, and the public, in the analyses and planning that are

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[20] *See*, "BOEM is aware of many other factors that affect the appropriateness of offshore development, including commercial and recreational fisheries concerns, endangered species critical habitat, recreation and tourism, and other environmental and multiple use concerns. However, these factors are typically site-specific and will be thoroughly evaluated on a case-by-case basis during any future Calls for Information and Nominations and subsequent Area Identification stages of BOEM's leasing process." Request for Feedback on BOEM's Proposed Path Forward for Future Offshore Renewable Energy Leasing on the Atlantic Outer Continental Shelf, 83 Fed. Reg. 14,881 (Apr. 6, 2018) *at* 14,883.

[21] *Summary of the review process, feedback received, and remaining questions for draft data products and methods relevant to the components of ecologically rich areas (from the Ecologically Rich Areas Framework in the Mid-Atlantic Ocean Action Plan) at* 2, available at https://www.boem.gov/ERA-data-methods-review-results/.

[22] Request for Feedback on BOEM's Proposed Path Forward for Future Offshore Renewable Energy Leasing on the Atlantic Outer Continental Shelf, 83 Fed. Reg. 14,881 (Apr. 6, 2018) *at* 14,883.

[23] Ferguson, M.C., Curtice, C., Harrison, J., and Van Parijs, S.M., "Biologically Important Areas for Cetaceans within U.S. Waters—Overview and Rationale," *Aquatic Mammals* 41: 2-16 (2015).

required under multiple U.S. statutes [including the statutes at issue here (*e.g.*, National Environmental Policy Act or NEPA, Marine Mammal Protection Act, and ESA)] to characterize and minimize the impacts of anthropogenic activities on cetaceans, and to achieve conservation and protection goals."[24]

For the U.S. East Coast, 18 seasonal or year-round BIAs have been delineated for five species of baleen whale, including feeding, breeding, and migratory corridor BIAs for the North Atlantic right whale, feeding BIAs for the minke whale, sei whale, fin whale, and two species of odontocete, harbor porpoise and bottlenose dolphin, which met the criteria for small and resident populations.[25] It is important to note, however, that NOAA's present list of BIAs is not intended to be comprehensive and should be viewed as a baseline to be augmented with additional data. The four criteria intended to guide BIA delineation focus exclusively on "small and resident populations" and on migratory species for which there is evidence that a considerable portion uses a spatially restricted location for breeding, feeding, or migrating.[26] Moreover, the identification of BIAs is intended as an iterative process and thus represents a baseline to which additional areas can be added.[27] Thus, in presenting its BIAs, NOAA explicitly stated the need to identify additional areas of importance to marine mammals based on habitat-based density maps and other data, such as acoustic, sighting, genetic, and tagging data.[28]

Cape Hatteras

The continental shelf break off Cape Hatteras is considered one of the world's most productive marine ecosystems. Positioned at the confluence of the Gulf Stream and the Labrador Current, these dynamic ocean fronts provide a sustained source of nutrients that support an abundance of ocean life year-round, as well as some of the region's most economically important commercial and recreational fisheries.[29] Cape Hatteras' waters have the highest marine mammal biodiversity of any area along the U.S. East Coast, and are internationally renowned for their diversity of species;[30] nine taxonomic families and 34 species (29 cetaceans, four pinnipeds, and one manatee) were recorded for North Carolina in a recent study.[31] Sightings records and habitat-based density models[32] show that marine mammals reside in the vicinity of the shelf-break edge, indicating that it represents important foraging habitat for these species.[33] Similarly,

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[24] *Id*.

[25] LaBrecque, E., Curtice, C., Harrison, J., van Parijs, S.M., and Halpin, P.N., "Biologically important areas for cetaceans within U.S. waters—East coast region," *Aquatic Mammals* 41: 17-29 (2015).

[26] Ferguson, M.C., et al., Biologically Important Areas for Cetaceans within U.S. Waters—Overview and Rationale, *supra* note 23.

[27] *Id*.

[28] *Id*.

[29] Ross, S.W., "Unique deep-water ecosystems off the southeastern United States," *Oceanography* 20(4): 130-139 (2007); NOAA, A profile of The Point, available at https://tos.org/oceanography/assets/docs/20-4_ross.pdf (accessed July 2017).

[30] Byrd, B.L., Hohn, A.A., Lovewell, G.N., Altman, K.M., Barco, S.G., Friedlaender, A., Harms, C.A., McLellan, W.A., Moore, K.T., Rosel, P.E., and Thayer, V.G., "Strandings as indicators of marine mammal biodiversity and human interactions off the coast of North Carolina*," Fishery Bulletin* 112(1):1-23 (2014).

[31] *Id*.

[32] Halpin P.N., Read, A.J., Fujioka, E., Best, B.D., Donnelly, B., Hazen, L.J., Kot, C., Urian, K., LaBrecque, E., Dimatteo, A., Cleary, J., Good, C., Crowder, L.B., and Hyrenbach, K.D., "OBIS-SEAMAP: The world data center for marine mammal, sea bird, and sea turtle distributions," *Oceanography* 22(2):104-115 (2009); Roberts, J.J., Best, B.D., Mannocci, L., Fujioka, E., Halpin, P.N., Palka, D.L., Garrison, L.P., Mullin, K.D., Cole, T., Khan, C., McLellan, W., Pabst, D.A., Lockhart, G., "Habitat-based cetacean density models for the U.S. Atlantic and Gulf of Mexico," *Scientific Reports* 6:22615 (2016). BOEM should consult OBIS-SEAMAP before finalizing any decisions about the closure area, as that model is constantly updated.

[33] Baird, R.W., Webster, D.L., Swaim, Z., Foley, H.J., Anderson, D.B., and Read, A.J., "Spatial use by odontocetes satellite tagged off Cape Hatteras, North Carolina in 2015", Final report. (July 2016) (Submitted to Naval Facilities Engineering

acoustic data indicates that endangered sperm whales and highly sensitive beaked whales are year-round residents of this area.[34] A portion of these waters represent a BIA for migratory cetaceans, forming part of the migratory corridor for the endangered North Atlantic right whale.[35] Four of the six species of sea turtle found along the U.S. East Coast nest by the beaches of Cape Hatteras National Seashore: vulnerable leatherbacks, endangered loggerhead and green turtles, and the rarest sea turtle in the world, the critically endangered Kemp's Ridley. These species occur at high densities in the waters immediately offshore from Cape Hatteras[36] and are known to migrate offshore to feeding grounds in the Mid- and South Atlantic Bight.[37] Cape Hatteras National Seashore and 68 miles of barrier islands have been identified as a globally significant Audubon Important Bird Area.[38]

Nearshore corridor

Approximately 22 miles from shore along the East Coast is an established migratory pathway for marine mammals, sea turtles, and fish. Loggerhead, Kemp's ridley, and leatherback turtles travel seasonally nearby this strip, 12 miles from shore.[39] This nearshore corridor is also an important foraging area for seabirds and marine mammals, including the North Atlantic right whale, and nursery ground for important crab and fish species. Key nursery areas include the mouths of the Chesapeake and Delaware Bays.[40] BIAs for nine small and resident populations of bottlenose dolphins have been identified by NOAA within the Southeast Atlantic's nearshore corridor, ranging from the Northern North Carolina Estuarine System south to the Florida Bay.[41]

Areas identified in the New England Fishery Management Council's Essential Fish Habitat Amendment

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Command Atlantic, Norfolk, Virginia, under Contract No. N62470-10-3011, Task Order 57 and N62470-15-8006, Task Order 07, issued to HDR Inc., Virginia Beach, Virginia).

[34] McLellan, W.A., McAlarney, R.J., Cummings, E.W., Bell, J.T., Read, A.J., and Pabst, D.A., Year-round presence of beaked whales off Cape Hatteras, North Carolina, Poster presentation at the 21st Biennial Conference on the Society of Marine Mammalogy, San Francisco, CA (Dec. 13-18, 2015); Cummings, E., McAlarney, R., Keenan-Bateman, T., Pabst, D.A., Read, A., Bell, J., and W. McLellan, Sperm whale (*Physeter macrocephalus*) presence and behavior off the mid-Atlantic states of North Carolina and Virginia from 2011 to 2016 (2017) (presented at the Southeast and Mid-Atlantic Marine Mammal Symposium, Beaufort, NC, April 7-9, 2017); Stanistreet, J.E., Nowacek, D.P., Baumann-Pickering, S., Bell, J.T., Cholewiak, D.M., Hildebrand, J.A., Hodge, L.E., Moors-Murphy, H.B., Van Parijs, S.M., and Read, A.J., "Using passive acoustic monitoring to document the distribution of beaked whale species in the western North Atlantic Ocean," *Canadian Journal of Fisheries and Aquatic Sciences* (2017).

[35] LaBrecque, E., et al., Biologically important areas for cetaceans within U.S. waters—East coast region, *supra* note 25.

[36] Halpin, P.N., et al., "OBIS-SEAMAP: The world data center for marine mammal, sea bird and sea turtle distributions," *Oceanography* 22, no. 2 (2009):104-115.

[37] McClellan C.M., et al., "Conservation in a complex management environment: The by-catch of sea turtles in North Carolina's commercial fisheries," *Marine Policy* 35 (2011): 241-248. Griffin D.B., et al. "Foraging habitats and migration corridors utilized by a recovering subpopulation of adult female loggerhead sea turtles: implications for conservation," *Marine Biology* 160 (2013): 3071-3086.

[38] The Important Bird Area (IBA) program is an international effort by Bird Life International to identify, conserve, and monitor a network of sites of high conservation value for bird populations.

[39] Mid-Atlantic Regional Council on the Ocean. "Actions, Timelines, and Leadership to Advance the Mid-Atlantic Governors' Agreement on Ocean Conservation." Aug. 2009. http://midatlanticocean.org/wp-content/uploads/2014/03/Actions_Timelines_and_Leadership_to_Advance_The_MidAtlantic_Governors_Agreement_on_Ocean_Conservation.pdf.

[40] NOAA, *Fishery Management Plan for Atlantic Tunas, Swordfish and Sharks: Environmental Impact Statement, Part 1*. Northwestern University. April 1999.

[41] LaBreque E., et al., "Biologically Important Areas for Cetaceans within U.S. waters – East Coast Region." *Supra* note 25.

Ocean waters off the New England coast contain a diversity of complex benthic habitats, including extensive mudflats, sandy offshore banks, rocky ledges, deep submarine canyons and massive seamounts. This habitat diversity and structural complexity contribute to the region's historically highly-productive fisheries and rich fishing tradition.

In a multiyear progress, the New England Fishery Management Council ("NEFMC") identified and NMFS approved several Habitat Areas of Particular Concern ("HAPC") due to their important ecological function as part of the Omnibus Essential Fish Habitat Amendment 2 ("Amendment"). Because the HAPCs are particularly vulnerable to human impacts, NMFS noted that these areas should be afforded "special attention" regarding the adverse effects from fishing or other human activities in the designated area.[42] As part of the Amendment, NMFS also approved new Habitat Management Area in the Great South Channel and the Eastern Gulf of Maine and implemented continued closures (some of which have been closed for more than 20 years) on Georges Bank, Cashes Ledge, and the Western Gulf of Maine. Other ecologically important areas were identified as part of the Amendment process, such as Cox's Ledge and Machias Ridge, but were not protected as part of the Amendment. Ultimately, precautionary management in all of these areas is key to New England's ability to ensure the long-term viability of its depleted groundfish stocks and other species. Several of the below mentioned areas may overlap with protections recommended by the Amendment.

Scientific literature identifies several other ecologically important areas along the U.S. Atlantic Coast which are unlikely to coincide with forecast areas for offshore renewables in the next three to five years due to current technological constraints. As with the canyons described in Section I, we provide here a list of these places for BOEM's planning purposes since technology continues to evolve. This list also is not presented in order of importance or intended to foreclose consideration of other areas.

Gulf of Maine/ Cashes Ledge Area

The Gulf of Maine, a semi-enclosed sea bounded by Georges and Browns Banks, New England shorelines, and Nova Scotia, is another extremely productive marine system.[43] As the north's icy Labrador Current meets the warm Gulf Stream at the northern edge of its loop pattern and is impacted by the Bay of Fundy's intense tides, nutrient-rich waters perfect for phytoplankton production flood the Gulf's banks, ledges, and coastal shelf, allowing a wide diversity of marine life to flourish, from forage species like herring and menhaden to large tunas, whales, marine mammals, and birds. Scientists have identified several distinct sub-regions in the Gulf of Maine, and jewels like Georges Bank, Stellwagen Bank, Jordan Basin, and Jeffreys Ledge are important refuges for rare marine animals and key to maintaining productive fish stocks.[44]

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[42] *See* Final Rule; Omnibus Essential Fish Habitat Amendment 2, 83 Fed. Reg. 15,240, 15,241 (Apr. 9, 2018). New England Fishery Management Council. "NMFS Approves 'Majority' of Council's Habitat Amendment," January 8, 2018, http://s3.amazonaws.com/nefmc.org/NMFS-Approves-%E2%80%9CMajority%E2%80%9D-of-Council%E2%80%99s-Habitat-Amendment.pdf.

[43] Townsend D.W., "Influences of oceanographic processes on the biological productivity of the Gulf of Maine," *Aquatic Sciences* 5, no. 3 (1991): 211-230.

[44] Kelley N.E., et al., "Biodiversity of the deep-sea continental margin bordering the Gulf of Maine (NW Atlantic): Relationships among sub-regions and to shelf systems," *PLoS ONE* 5, no. 11 (2010): e13832; Incze L.S., et al., "Biodiversity knowledge and its application in the Gulf of Maine area," *Life in the world's oceans: diversity, distribution and abundance. Blackwell Publishing, Oxford, UK* (2010): 43-63; Stokesbury K.D.E., et al., "High densities of juvenile sea scallop (*Placopecten magellanicus*) on banks and ledges in the central Gulf of Maine," *Journal of Shellfish Research* 29, no. 2 (2010): 369-372.

The Gulf of Maine's Cashes Ledge is remarkable in that it contains nearly all the representative habitat types associated with the offshore Gulf of Maine: rocky ledge, sand and gravel, mud basins, sedimentary plateaus and boulder field. Because of this habitat diversity, it has unusually high and concentrated biodiversity. This area includes the Cashes Ledge mountain range that rises up from basins hundreds of feet deep to a ledge roughly 40 feet from the surface.[45] The ledge's peak, Ammen Rock, punctures the ocean current, resulting in a nutrient and oxygen-rich water mix, feeding the Atlantic's deepest and largest cold-water kelp forest, a source of food for much of the area's diverse and abundant marine life.[46] Cashes Ledge area is a place of restoration for iconic New England fish, such as cod and pollock, and rare species like the Atlantic wolfish; migrating schools of bluefin tuna, sea turtles, and blue and basking sharks are also common here.[47] It is also the site of BIAs for feeding minke, sei, fin, and humpback whales and North Atlantic right whales feeding and mating BIAs and Critical Habitat.[48]

Charleston Bump

Rising from the Blake Plateau that lies beyond the edge of the continental shelf off South Carolina and Georgia, the Charleston Bump is a deepwater, rocky ocean bottom feature 80-100 miles southeast of Charleston, South Carolina. The Charleston Bump deflects the Gulf Stream away from the eastern coast of the U.S., causing eddies and other current features that are considered "essential fish habitat."[49] The combination of rocky bottom and complex currents is attractive to large pelagic fish such as marlins, sailfish and swordfish. Satellite tagging data show that it is an important feeding and spawning area for swordfish.[50] The area is also home to the only known population of wreckfish in the western North Atlantic and the only known spawning site for wreckfish in the western North Atlantic.[51] The hard bottom areas of the Charleston Bump support deep-water corals that grow in mounds and pinnacles to extend several meters above the bottom.[52]

The Florida Straits, Dry Tortugas and Florida Keys

The Straits of Florida, made up of a curved channel between the Florida Peninsula and the Bahama Platform and Cuba, connect the Gulf of Mexico with the Atlantic Ocean.[53] Part of the straits consists of the Florida Keys coral reef, the third-largest reef system on the planet, extending nearly 200 miles

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[45] Uchupi E., "Structural framework of the Gulf of Maine." *Journal of Geophysical Research* 71, no. 12 (1966): 3013-3028.

[46] Witman J.D. and Lamb R.W., "Persistent differences between coastal and offshore kelp forest communities in a warming Gulf of Maine," *PLoS ONE* 13, no. 1 (2018): e0189388.

[47] Kraus S.D., et al., "Scientific assessment of a proposed Marine National Monument off the Northeast United States," *Scientific briefing for press and interested parties. Final version* 31 (2016).

[48] LaBreque E., et al., "Biologically Important Areas for Cetaceans within U.S. waters – East Coast Region," *Aquatic Mammals* 41, no. 1 (2015): 17-29. "Designated Critical Habitat; North Right Whale; Final Rule." 59 *Federal Register* 226 (3 June 1994), 28805-28835.

[49] Sedberry, G.R., et al., "The Charleston Bump: An island of essential fish habitat in the Gulf Stream," *American Fisheries Society Symposium* 25 (2001): 3-24.

[50] Sedberry, G.R., et al., *The role of the Charleston Bump in the life history of Southeastern U.S. marine fishes. Final Report*. Prepared by South Carolina Department of Natural Resources. November 2000.

[51] Sedberry, G.R., et al., "The Charleston Bump: An island of essential fish habitat in the Gulf Stream," *American Fisheries Society Symposium* 25 (2001): 3-24.

[52] Sedberry, G.R. (2009-07-29). "A Profile of the Charleston Bump," NOAA, Revised June 9, 2010, http://oceanexplorer.noaa.gov/explorations/islands01/background/islands/sup11_bump.html.

[53] The Strait of Florida, NOVA Southeastern University, Accessed February 26, 2018 https://cnso.nova.edu/messing/strait-of-florida/

southwest from Biscayne Bay near Miami to the Dry Tortugas.[54] The straits include the Florida Keys Marine Sanctuary, home to more than 6,000 species of marine life, seagrass beds and mangroves,[55] and the Dry Tortugas, at the western end of the Florida Reef system and made up of seven islands and their surrounding shoals and waters, a portion of which has been designated as Dry Tortugas National Park.[56] The marine ecosystems in this area are home to abundant wildlife including sea turtles, sharks, reef fish, birds and about 30 species of coral.[57] Located at the southern edge of the Gulf Stream, the channel making up the Florida Straits is an important biodiversity hotspot: over 680 species of marine life are found in one concentrated region in the Florida Straits, more than in any other place in the Atlantic Ocean.[58] The Florida Straits contain the Atlantic's greatest concentration of endemic species.[59]

V. BOEM should conduct a programmatic cumulative impacts analysis for offshore wind along the U.S. Atlantic Coast.

NEPA requires "efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man"[60] and mandates that "to the fullest extent possible" the "policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with [NEPA]."[61] Central to NEPA is its requirement that, before any federal action that "may significantly degrade some human environmental factor" can be undertaken, agencies must prepare an environmental impact statement ("EIS").[62] The fundamental purpose of an EIS is to require the decision-maker to take a "hard look" at a particular action – at the agency's need for it, at its environmental consequences, and at more environmentally benign alternatives that may substitute for it – before the decision to proceed is made.[63] To comply with NEPA, an EIS must, among other requirements, consider the cumulative effects of reasonably foreseeable activities in combination with the proposed action.[64]

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[54] The South Florida Ecosystem, Multi-Species Recovery Plan for South Florida, Fish and Wildlife Service, pp. 2-9. Accessed February 26, 2018. https://www.fws.gov/verobeach/msrppdfs/sfecosystem.pdf.

[55] Florida Keys National Marine Sanctuary, National Marine Sanctuaries/National Oceanic and Atmospheric Administration. History of Florida Keys National Marine Sanctuary. Accessed February 26, 2018. https://floridakeys.noaa.gov/history.html?s=about.

[56] National Park Service, U.S. Department of the Interior, Dry Tortugas National Park, Florida, Fort Jefferson, Self-Guided Tour. Accessed February 26, 2018. https://www.nps.gov/drto/planyourvisit/upload/sgftweb.pdf.

[57] National Park Service, Dry Tortugas, Animals. Accessed February 26, 2018. https://www.nps.gov/drto/learn/nature/animals.htm.

[58] *St. Petersburg Times Online*. "Florida Straits hosts most diverse sea life." Aug. 12, 2003.

[59] Conservation International: Greatest Diversity of Fish in Entire Atlantic Found Just Off Florida Coast. Accessed February 26, 2018. https://www.conservation.org/NewsRoom/pressreleases/Pages/081203-Greatest-Diversity-of-Fish-in-Entire-Atlantic-Found-Just-Off-Florida-Coast.aspx

[60] 42 U.S.C. § 4321 (2010).

[61] 42 U.S.C. § 4332 (2010). As the Supreme Court explained, "NEPA's instruction that all federal agencies comply with the impact statement requirement – and with all the requirements of § 102 – "to the fullest extent possible" [cit. omit.] is neither accidental nor hyperbolic. Rather the phrase is a deliberate command that the duty NEPA imposes upon the agencies to consider environmental factors not be shunted aside in the bureaucratic shuffle." *Flint Ridge Development Co. v. Scenic Rivers Ass'n*, 426 U.S. 776, 787 (1976).

[62] *Steamboaters v. F.E.R.C.*, 759 F.2d 1382, 1392 (9th Cir. 1985) (emphasis in original).

[63] *See* 40 C.F.R. § 1500.1(b), 1502.1; *Baltimore Gas & Electric v. NRDC*, 462 U.S. 87, 97 (1983). This "hard look" requires agencies to obtain high-quality information and accurate scientific analysis. *See* 40 C.F.R. § 1500.1(b). "General statements about possible effects and some risk do not constitute a hard look absent a justification regarding why more definitive information could not be provided." *Klamath-Siskiyou Wilderness Center v. Bureau of Land management*, 387 F.3d 989,994 (9th Cir. 2004) (quoting *Neighbors of Cuddy Mountain v. United States Forest Service*, 137 F.3d 1372, 1380 (9th Cir. 1998)).

[64] 40 C.F.R. § 1508.7.

Given the U.S. Atlantic Coast's rapidly expanding offshore wind development activity and the array of potential impacts to marine life, including the acute vulnerability of the North Atlantic right whale, it is vitally important that prior to establishing a final set of forecast areas, BOEM undertake a careful and detailed quantitative analysis of cumulative impacts from existing, planned, and proposed offshore wind farms and their transmission infrastructure programmatically for the U.S. Atlantic Coast. In conducting the analysis, cumulative impacts should be defined by BOEM to encompass: (i) repeated disturbance from the same activity over time; (ii) the interactions between different types of stressors; (iii) multiple wind energy development projects; and (iv) the broader context of other ocean uses both within the leasing area and that may be encountered by transboundary and migratory species during their life cycle. This programmatic review should be iterative to ensure improved scientific understanding of offshore wind impacts to species and habitats, and ways in which those impacts can be minimized and mitigated, over time.

BOEM should conservatively assume that any substantial decrements in communication range or habitat for the North Atlantic right whale, including habitat avoidance, will result in adverse impacts on the population and BOEM should therefore plan for renewable energy development in a way that is sufficiently protective of this critically endangered species. A conservative approach is justified given the species' extreme vulnerability, where any additional stressor may potentially result in population-level impacts, and the difficulty in obtaining empirical data on population-level impacts on wild animals.

Finally, the impacts of offshore wind development would occur in an already compromised acoustic and otherwise affected environment. In this context, BOEM must consider the cumulative impacts of other activities and events as part of its environmental analysis, including non-acoustic impacts from vessel collisions, bycatch and entanglement, and the potential for large-scale seismic exploration and offshore oil and gas drilling, among others.

A programmatic EIS of the kind described above will not only help ensure environmentally appropriate selection of forecast areas, but also will prove useful to future – and existing – wind developers as they develop their construction and operations plans. In doing so, the programmatic EIS will need to provide a comprehensive assessment of the cumulative impacts and indirect effects of multiple projects that are likely to flow directly from their proposed development.

VI. BOEM should conduct baseline studies for selected forecast areas, as well as help address data questions identified through planned offshore wind projects' comment periods.

One challenge many developers are experiencing is a lack of pre-development baseline data on the presence and abundance of key species and the physical characteristics and community composition of the sea floor. We recommend BOEM assist with the next stage of renewable energy development through initiating collection of at least two years of baseline data for identified forecast areas to bolster statistical integrity. Baseline data collection efforts should include:

1. Presence and abundance of key species (*i.e.*, marine mammals, with a focus on the North Atlantic right whale, sea turtles, seabirds, shorebirds, fish, bats, and benthic organisms,

among others) in the proposed or potential lease areas and energy transmission infrastructure areas. Data should be collected at spatial scales appropriate to the size of the lease area and capable of assessing the ecology of key species and broader oceanographic influences, and at temporal scales capable of capturing seasonal or inter-annual variability; and,

2. The physical characteristics and community composition of the sea floor in proposed or potential lease areas, including rates of community turnover, so that environmental changes resulting from foundations and/or anchoring can be assessed.

In addition to collecting data for forecast areas, BOEM should also prioritize research aimed at solving outstanding questions raised by existing developers and stakeholders regarding mitigation methods for marine species. Post construction research also needs to be robust and coordinated. All pre- and post-construction ecological studies must be made publicly available to facilitate the best possible science and ensure programmatic transparency.

VII. BOEM should focus its resources and efforts on the identification of future lease areas through the wind energy area designation process.

In the RFF, BOEM identifies "areas for which industry has expressed interest" as a factor to be considered in its analysis, raising the prospect of additional unsolicited bids for wind energy areas.[65] For both economic and ecological reasons, we believe that the wind energy area identification process is far preferable to having developers express interest in specific sites. The ecological benefits of the wind energy identification process come from assessing and choosing among multiple possible areas and in this way minimizing conflicts and building stakeholder support. BOEM's Smart from the Start approach to renewable energy development starts with picking sites that avoid obvious ecological conflicts. Fortunately, the potential along the Atlantic Coast is so large and the industry has reached such a scale, that we recommend BOEM focus its resources and efforts on using the wind energy identification process moving forward.

VIII. BOEM should develop an early stakeholder notification approach for offshore wind.

We recommend that BOEM consult the regional Data Portals for scientific and human use data and maps to characterize and analyze potential wind energy areas and reach out to stakeholders in these regions to develop an early stakeholder notification approach that would help stakeholders be more engaged upfront in the vetting and design of various projects, when feedback is most valuable and when developers have more flexibility.[66] We suggest that BOEM establish a working group within the Mid-Atlantic and Northeast regions with relevant stakeholders representing industry, non-consumptive recreation, and the

[65] Request for Feedback on BOEM's Proposed Path Forward for Future Offshore Renewable Energy Leasing on the Atlantic Outer Continental Shelf, 83 Fed. Reg. 14,881 (Apr. 6, 2018) *at* 14,883.

[66] *See*, for example, *Mid-Atlantic Regional Ocean Action Plan*, November 2016 *at* 35, available at https://www.boem.gov/Mid-Atlantic-Regional-Ocean-Action-Plan/: "Project proponents should seek to identify, engage, and incorporate information from stakeholders before filing a permit application or otherwise formally initiating the environmental review and permitting process, to ensure that stakeholder information helps inform both the project application and subsequent public, stakeholder, and agency review."

conservation communities to develop and present to the public a sample proposal for early stakeholder engagement around the pilot topic of future offshore wind development. Such an approach might include hosting a workshop describing when and how agencies are factoring in Data Portal information so that stakeholders are aware of how the data their industries have provided is being used to shape proposals.

Conclusion

Thank you for the opportunity to provide comments on a path forward for the next stage of offshore renewable energy. We urge BOEM to establish reasonable environmental restrictions as described above and to carefully consider further development of offshore wind in a manner that ensures a healthy ocean environment. It is critical that the agency conducts the necessary NEPA analysis and baseline research to allow needed offshore wind energy to scale up to its full potential as a major climate and clean energy solution for America. We welcome the opportunity to meet with you, and your staff, at any time to review these comments.

Sincerely,

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