SOUTHERN ENVIRONMENTAL LAW CENTER

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3 May 2010

Via Electronic Submission
PRPcomments@mms.gov.

Ms. Renee Orr
Chief, Leasing Division
Minerals Management Service, MS 4010
381 Elden Street
Herndon, VA 20170-4817

Mr. James F. Bennett
Chief, Branch of Environmental Assessment
Minerals Management Service, MS 4042
381 Elden Street
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Re: "Remand of the 2007–2012 OCS Oil and Gas Leasing Program" Comments on Preliminary Revised 5-Year Outer Continental Shelf (OCS) Oil and Gas Leasing Program for 2007–2012

Dear Ms. Orr and Mr. Bennett:

The Southern Environmental Law Center ("SELC") submits these comments on its own behalf and on behalf of the following groups: Chesapeake Climate Action Network, Virginia League of Conservation Voters, Friends of the Rivers of Virginia, GreenVisions, Inc., Virginia Conservation Network, Virginia Interfaith Power and Light, Environment America, Environment New Jersey, Defenders of Wildlife, Sierra Club Virginia, and Oceana, in response to the Department of the Interior Minerals Management Service's ("MMS") request for comments on the Preliminary Revised 5-Year Outer Continental Shelf ("OCS") Oil and Gas Leasing Program for 2007–2012 ("PRP").[1] SELC is a regionally-focused organization that has worked for almost 25 years to protect the coastal resources of the southern states of Virginia, North Carolina, South Carolina, Georgia, and Alabama from a variety of environmental threats. As set forth below, the Virginia lease sale 220 must be withdrawn from the PRP. The Deepwater Horizon spill tragically demonstrates that the risks of expanded offshore drilling are simply too great, particularly in light of the minimal estimated reserves. In addition, a proper analysis under the Outer Continental Shelf Lands Act ("OCSLA"), 43 U.S.C. § 1344, likewise shows that the Virginia lease sale should be withdrawn.

[1] U.S. MINERALS MGMT. SERV., PRELIMINARY REVISED PROGRAM OUTER CONTINENTAL SHELF OIL AND GAS LEASING PROGRAM 2007-2012 (March 2010), *available at* http://www.doi.gov/whatwedo/energy/ocs/upload/PRP2007-2012.pdf [hereinafter PRP].

I. The Administration Must Reverse the Decision to Expand Offshore Drilling, Including the Decision to Retain the Virginia Lease Sale as Part of the Current 5-Year Program.

We strongly urge the administration to reverse its decision to expand offshore drilling, including its decision to retain the Virginia lease sale 220 as part of the current program. The events unfolding in the Gulf of Mexico as a result of the Deepwater Horizon blowout and spill should persuade the Obama administration not simply to temporarily suspend new drilling while the accident is investigated, but to permanently shelve plans both to move forward with the Virginia lease sale and to open up the Mid- and South-Atlantic and the Eastern Gulf of Mexico regions to potential drilling. Millions of gallons of crude oil have already spilled from the well site where the Deepwater Horizon oil rig that was conducting exploratory drilling exploded on 20 April 2010 and sunk two days later. The volume of oil spilled may already have exceeded the estimated 11 million gallons that spilled from the Exxon Valdez tanker off the coast of Alaska in 1989. [2] As of 2 May 2010, efforts to cap the well, contain the spilled oil, and prevent oil from reaching fragile areas on shore have been unsuccessful. The oil has already reached the Louisiana coast and is predicted to also hit Mississippi, Florida, and Alabama, with devastating consequences to their ecologically rich coastal resources and coastal communities that depend on them. In such event, the impacts to the marine and coastal environment would persist for decades. Over 20 years after the Exxon Valdez spewed oil onto Alaska's shores, oil can still be found on beaches under rocks despite clean-up efforts.[3] The economic consequences to the region's fisheries and coastal economies will also be long-lasting.

The Deepwater Horizon spill is a tragic and sobering incident, illustrating how risky, dangerous, and dirty offshore oil and gas drilling can be, notwithstanding the use of the most current drilling technologies and methods for containing and cleaning up spilled oil. That this accident occurred in, and has completely overwhelmed the response capabilities of, a region with the most offshore experience and technical expertise demonstrates why offshore drilling should not be expanded to new regions like the Mid- and South-Atlantic and the Eastern Gulf of Mexico, which are among the most environmentally sensitive regions to offshore oil and gas development.[4]

As set forth in our previous comments, attached, on the Virginia Lease Sale 220 (12 Jan. 2009) [hereinafter "VA lease sale comments"] and on the 2010-2015 Draft Proposed 5-Year Leasing Program (21 Sept. 2009) [hereinafter "DPP comments"], the Mid- and South-Atlantic region is characterized by unique and fragile marine and coastal resources that would be devastated by a spill even the fraction of the size of the Deepwater Horizon spill. *See* VA lease sale comments at 7-19; DPP comments at 14-19. However, even without the risk of a spill, oil and gas development in new regions like the Mid- and South-Atlantic would result in significant adverse impacts on the environment. The routine operations associated with offshore oil and gas, and the development of necessary onshore infrastructure to support such operations, will harm marine waters and coastal habitats and the thousands of species of birds, fish, marine

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[2] *See* SkyTruth, 1 May 2010, http://blog.skytruth.org/2010/05/gulf-oil-spill-new-spill-rate.html.
[3] *See* Christine Dell'Amore *Exxon Valdez Anniversary: 20 Years Later, Oil Remains*, NATIONAL GEOGRAPHIC NEWS, 23 March 2009, http://news.nationalgeographic.com/news/2009/03/090323-exxon-anniversary_2.html.
[4] *See* PRP at 108-09, 116.

mammals, and sea turtles that depend on them. *See* VA lease sale comments at 10-19; DPP comments at 14-20.

The areas off the coast of the Mid-Atlantic also contain particularly sensitive marine canyons that currently receive special protection from degradation. Four canyons, known as Oceanographer, Lydonia, Veatch and Norfolk, are among the best-documented deepwater habitats in the U.S. The canyons are home to a multitude of marine animals, including sponges, corals, lobsters and fish. In recognition of their ecological importance, these canyons are closed to bottom trawling and dredging. Four canyons, Wilmington, Baltimore, Hydrographer and Washington are subject to specific trawling fisheries regulations in light of their importance as coral and fish habitats. Norfolk Canyon is within the area of Proposed Sale 220 as is Washington Canyon. The Washington and Norfolk Canyons have been designated as a Habitat Areas of Particular Concern by the Mid-Atlantic Fishery Management Council. Offshore drilling in the Mid-Atlantic will detrimentally impact these special areas.

The Eastern Gulf of Mexico region, which includes areas offshore of Alabama, likewise is characterized by enormously valuable coastal wetlands and marshes that would be harmed by the impacts of oil and gas development. Mobile Bay is one of the most productive marine zones in the world. Substantial federal funds are aimed at restoring the bay's oyster beds. The area is also prime habitat for manatees, brown pelicans and other important wildlife species and abundant fisheries. The administration's plan to open this region to new drilling would place not only all of these environmental resources at risk but also the culture and way of life of the coastal communities that depend on them.

On 2 May 2010, President Obama described the Deepwater Horizon spill as a "massive and potentially unprecedented environmental disaster."[5] Any benefits of offshore drilling in new areas simply do not outweigh the risks. We, therefore, call on the administration to permanently call off plans to expand offshore drilling, and to instead prioritize programs that support energy efficiency and renewable energy development. Clean energy solutions will keep our region's environment and coastal communities safe, while also reducing our dependence on fossil fuels and stave off the impacts of climate change.

II. A Proper Balance Under the OCLSA Warrants Excluding the Virginia Lease Sale from the Current 5-Year Program.

Even without the Gulf catastrophe, a proper balance under Section 18 of OCSLA, 43 U.S.C. §1344(a)(3), warrants excluding the Virginia lease sale from the current program, and the Secretary has failed to provide a sufficient rationale in the PRP for retaining it. Under section 18 of OCSLA, 43 U.S.C. § 1344, the Secretary must strike a proper balance between an area's potential for oil and gas production and the potential for environmental damage. Here, the potential for environmental damage clearly outweighs the region's potential for oil and gas production.

[5] Robin Bravender, *Gulf Coast Residents Send SOS to Obama*, NEW YORK TIMES, 3 May 2010, http://www.nytimes.com/gwire/2010/05/03/03greenwire-gulf-coast-residents-send-sos-to-obama-98003.html.

MMS estimates that the Virginia lease sale area contains just 130 million barrels of oil and 1.14 trillion cubic feet of gas. PRP at 2. These projections translate to a little over 6 days of oil and about 18 days of natural gas, at current rates of U.S. consumption.[6] In fact, the entire Mid- and South-Atlantic OCS region combined is estimated to contain a maximum of just 1.15 billion barrels of oil and 11.7 trillion cubic feet of natural gas,[7] which translates to less than two months' worth of oil (approximately 56 days) and 6 months' worth of natural gas.[8]

In stark contrast to these meager estimates, the potential for environmental damage to the region is severe. According to MMS's own analysis, the Mid-Atlantic region, in which the Virginia lease sale is located, is one of the most environmentally sensitive to the impacts of offshore oil and gas development. This was true under the original environmental sensitivity analysis, which analyzed only the sensitivity of coastal habitats,[9] as well as under the revised environmental sensitivity analysis, which adds marine habitat, marine fauna, and marine productivity to the analysis. *See* PRP at 105. Thus, the PRP's revised environmental sensitivity analysis confirms that this sale should never have been included in the current program in the first place, as it is located is in one of the most environmentally sensitive and least oil-and-gas-rich regions of the OCS. *See also* DDP comments at 5-12.

The Secretary acknowledges the high environmental sensitivity of this region in the revised PRP and that the amount of oil and gas estimated to exist in the Virginia lease sale area is miniscule. PRP at 4, 116. He, nevertheless, decided to retain the Virginia lease sale as scheduled, on the grounds that: (1) leasing in frontier OCS areas must be considered as a way to reduce our nation's reliance on foreign oil, (2) the Commonwealth of Virginia supports the lease sale; (3) moving forward with potential leasing and exploration will provide current data regarding the potential resource base in the Mid-Atlantic; and (4) the lease sale could be an important vehicle for creating jobs. PRP at 4. None of these rationales justifies the decision to move forward with the Virginia lease sale, however.

First, it is well recognized that even the most optimistic projections of recoverable resources in the Mid- and South-Atlantic regions would not put a dent in the amount of foreign oil we import.[10] Thus, opening up these regions, and the Virginia lease sale area in particular, to oil and gas development will do nothing to reduce our nation's reliance on foreign oil.

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[6]According to the EIA, in 2007 the U.S. consumed 20,680,000 barrels of oil per day. Energy Info. Admin., Petroleum Navigator, *available at* http://tonto.eia.doe.gov/dnav/pet/pet_cons_psup_dc_nus_mbblpd_a.htm. In 2007 the U.S. consumed 23,097,140 million cubic feet of natural gas. Energy Info. Admin., *U.S. Natural Gas Total Consumption (Million Cubic Feet)* at Table 1, *available at* http://tonto.eia.doe.gov/dnav/ng/hist/n9140us2A.htm.

[7] DOI, Estimated Undiscovered, Economically Recoverable Resources as of July 2010 (resources at $80/bbl), *available at* http://www.doi.gov/whatwedo/energy/ocs/upload/UERR_map_2012-2017.pdf

[6] *See supra* n.6.

[9] *See* PRP at 108-09, 116 (presenting relative sensitivity of shoreline habitats based on same data as original 2007-2012 plan).

[10] *See, e.g.,* Remarks by The President on Energy Security at Andrews Air Force Base (31 March 2010), available at http://www.whitehouse.gov/the-press-office/remarks-president-energy-security-andrews-air-force-base-3312010 (recognizing that "with less than 2 percent of oil reserves, but more than 20 percent of world consumption, drilling alone cannot come close to meeting our long-term energy needs"); Energy Info. Admin., Impacts of Increased Access to Oil and Natural Gas Resources in the Lower 48 Federal Outer Continental Shelf, in ANNUAL ENERGY OUTLOOK 2007 (2007), *available at* http://www.eia.doe.gov/oiaf/aeo/otheranalysis/ongr.html (increased access to

Second, while Governor McDonnell of Virginia is in favor of oil and gas development off the Virginia coast, other Atlantic states are vehemently opposed to it. The governors of New Jersey and Maryland both submitted formal comments in September 2009 to MMS detailing their states' long-standing objection to oil and gas drilling in the Mid-Atlantic region because of the tremendous risk it would pose to their natural resources, tourism, and fishing industries.[11] The state of Delaware also strongly opposes oil and gas drilling in the Atlantic because of similar concerns.[12] Political leaders in New Jersey and Maryland have reiterated their opposition to drilling in the Atlantic, in response to the Deepwater Horizon spill.[13] The OCLSA requires the Secretary to consider the policies of affected states in deciding if and where to allow oil and gas drilling. *See* 43 U.S.C. §1344(a)(2)(G). The Secretary was well aware of the position of these states before issuing his decision to retain the Virginia lease sale in the PRP. Yet the Secretary failed to acknowledge, much less address, the serious concerns of these states and their policies opposing drilling, contrary to this statutory requirement.

Third, that estimates of potential oil and gas resources in the Mid- and South-Atlantic are based on data that is 20-30 years old does not justify retaining the Virginia lease sale in the current program.[14] The Secretary removed the North Atlantic OCS region from consideration in the 2012-2017 program in part because similarly-aged data show minimal resource potential there in contrast to the significant risk to that region's valuable fisheries.[15] Likewise, the Mid- and South-Atlantic regions support important fisheries and provide valuable habitat for diverse species, *see* DPP comments at 14-20, and these regions are ranked even higher than the North Atlantic in terms of the sensitivity analysis, s*ee* PRP at 105. Under the Secretary's own rationale, the Mid- and South-Atlantic regions, including the Virginia lease sale area, thus should similarly be off limits to drilling.

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oil and natural gas resources in the lower 48 would not have an impact on domestic crude oil and natural gas production or prices before 2030, and even then the impact would be "insignificant.").

[11] *See* Letter from Governor Martin O'Malley to Elizabeth Birnbaum, Director MMS (21 Sept. 2009); Letter from Governor Jon S. Corzine to Ken Salazar, Secretary of the Interior (24 Sept. 2010). New Jersey's current governor, Chris Christie, has maintained the state's policy of unwavering opposition to offshore drilling in the region. *See* Kimberly Steinberg, *Gov.'s Earth Day pledge: No LNG, offshore drilling*, INDEPENDENT, 29 April 2010, http://independent.gmnews.com/news/2010-04-29/Front_Page/Govs_Earth_Day_pledge_No_LNG_offshore_drilling.html.

[12] Letter from Secretary Collin P. O'Mara to Randall B. Luthi, Director Minerals Management Service (21 Sept. 2009) (stating Delaware opposes drilling in the Atlantic because it "promises little return and only increased risk").

[13] *See* Press Release, NJ Senators, Congressmen Call On Administration To Reverse Decision To Drill Along East Coast (30 April 2010), *available at* http://menendez.senate.gov/newsroom/press/release/?id=4f44a3d0-6b65-43dd-a41a-bddfb9fc5a54; *Local politicians react to Gulf oil spill, drilling at home*, BALTIMORE SUN, 29 April 2010, http://weblogs.baltimoresun.com/features/green/2010/04/local_politicans_react_to_gulf.html (Maryland Senators Benjamin L. Cardin and Barbara A. Mikulski, and Governor Martin O'Malley reiterate opposition to drilling in Atlantic).

[14] According to MMS officials, the seismic surveys that would supply the updated data are not even likely to be completed before the Virginia lease sale is scheduled to take place. *See* Scott Harper, *Gulf oil spill gets attention at Norfolk meeting on drilling*, The Virginian-Pilot, 30 April 2010, http://hamptonroads.com/2010/04/gulf-oil-spill-gets-attention-norfolk-meeting?cid=ltst. In light of this fact, there is simply no sense in moving forward with the Virginia lease sale as proposed.

[15] *See* Obama Eyes Energy Development in Drilling Plan; Opponents Point to Alternatives, Jeffrey Brown Interview with Secretary Ken Salazar, PBS NewsHour (31 March 2010), available at http://www.pbs.org/newshour/bb/environment/jan-june10/drill2_03-31.html.

Finally, the argument that oil and gas development off the coast of Virginia will help create jobs is equally faulty. Any jobs generated by future oil and gas development will not materialize any time soon. More important, offshore oil and gas development would threaten the existing jobs that support Virginia's vibrant tourism and fishing industries that rely on clean beaches and healthy marine waters. In 2008, Virginia's tourism industry supported more than 210,000 jobs and generated $19.2 billion in visitor spending.[16] Coastal areas, such as the Chesapeake Bay and Virginia Beach are crucial to generating these tourism jobs and dollars. Also, the National Marine Fisheries Association estimates that Virginia hosts $145 million per year in commercial fish landings.[17] Sport fishing alone accounts for 5,541 jobs in Virginia, according to the American Sportfishing Association.[18]

Additionally, offshore oil and gas development in the Virginia lease sale area will interfere with the Navy and NASA operations that take place off Virginia's coast, potentially costing countless jobs that support a significant sector of Virginia's economy. The U.S. Navy has clearly stated that oil and gas exploration is incompatible with its operations in the Virginia Capes Operations Area ("VACAPES"), which stretches from Delaware to North Carolina.[19] Additionally, NASA's Wallops Flight Facility has expressed serious concern about conflicts that drilling would present for its launch range operations off the coast of Virginia, and the negative economic consequences that could result for the Eastern Shore.[20]

Conclusion

As the Secretary has stated, management of OCS resources must be guided "by the fundamental principle that all oil and gas exploration on federal lands must be conducted at the right place, at the right time, and in an environmentally sound way." PRP at 2. The OCS off the coast of Virginia is certainly not the right place for offshore drilling, and the tragedy in the Gulf shows that even with the best technology and industry expertise, the risks are simply too great. We, therefore, submit that the administration must withdraw the Virginia lease sale and retract plans to expand offshore drilling.

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[16] Va. Tourism Corp., Tourism in Virginia, http://www.virginia.org/pressroom/tourism.asp (last visited 3 May 2010).

[17] Nat'l Marine Fisheries Serv., Nat'l Oceanic and Atmospheric Admin, Annual Commercial Landing Statistics, http://www.st.nmfs.noaa.gov/st1/commercial/landings/annual_landings.html (last visited 29 April 2010).

[18] AM. SPORTFISHING ASS'N, SPORTFISHING IN AMERICA: AN ECONOMIC ENGINE AND CONSERVATION POWERHOUSE at 10 (2008), *available at* http://www.asafishing.org/images/statistics/resources/Sportfishing%20in%20America%20Rev.%207%2008.pdf.

[19] Letter from Donald R. Schregardus, Dept. of the Navy, to R.M. Burton, Dir., Minerals Mgmt. Serv. (10 Apr. 2006).

[20] NASA, Comments on the 5-Year Outer Continental Shelf Oil and Gas Leasing Program 2010-2015 (21 Sept. 2009). More recently, at the hearing in Norfolk, Virginia, on the proposed Programmatic EIS for seismic activities in the Mid- and South-Atlantic OCS, a NASA representative reiterated these concerns.

Thank you for the opportunity to comment.

Sincerely yours,

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12 January 2009

Via E-Mail To:
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Subject line: "Attn: Proposed Sale 220 NOI"

carrol.williams@mms.gov
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Via Overnight U.S. Mail To:
Minerals Management Service
Gulf of Mexico OCS Region
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Minerals Management Service
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Re: Comments on the Notice of Intent ("NOI") for Proposed Sale 220.

Dear Mr. Goeke:

We submit these comments on behalf of the Southern Environmental Law Center ("SELC"), the Sierra Club, Virginia Chapter, Virginia League of Conservation Voters, and Environment Virginia in response to the Department of the Interior Minerals Management Service's ("MMS") Call for Information and Interest/Nominations ("Call") and Notice of Intent ("NOI") to prepare an Environmental Impact Statement ("EIS") for Proposed Sale 220. 73 Fed. Reg. 67201 (13 Nov. 2008). Set forth below are the scope of issues and alternatives that the EIS must, at a minimum, address under the National Environmental Policy Act ("NEPA"), 42 U.S.C. § 4321 *et seq.* (2008).

However, we strongly urge MMS to withdraw its proposal to allow drilling for oil and natural gas in the 2.9 million-acre proposed lease area off the coast of Virginia ("Virginia Outer Continental Shelf" or "Virginia OCS"). The small amount of oil and natural gas that MMS projects would be recoverable from the Virginia OCS cannot justify the significant environmental and economic impacts that would result.

While MMS has emphasized that this effort complies with the Virginia Governor's request, Governor Kaine has stated otherwise:

> "[W]e asked for consideration in keeping Virginia in the Five-Year Plan in a way that comports with Virginia's offshore energy policies as enacted in state law. . . . The actions that you propose to start the leasing process could lead to drilling and production of natural gas and oil, and, for that reason, do not comport with Virginia's offshore energy policies . . . .[1]

Moreover, as various congressmen have stated, MMS's proposal is ill-advised in light of the significant harmful effects that drilling could have on the fragile ecosystems and economies of coastal states.[2] Given the impending change in White House administration, MMS should withdraw its proposal so that the new Administration will be free to address offshore drilling in the context of an overarching energy plan.[3] Importantly, the U.S. Navy has stated clearly that oil and gas exploration and development in the proposed lease area are incompatible with its operations in the Virginia Capes Operations Area ("VACAPES"), which raises substantial national security concerns.[4]

A rush to drill is not the answer to either our nation's energy needs or the need to decrease the U.S.'s contribution to global climate change. We encourage MMS, in coordination with other agencies, instead to pursue long-term, sustainable solutions to the nation's energy needs, such as offshore wind power, rather than inflicting damage to our environment, economy, and national security by drilling offshore to recover miniscule amounts of gas and oil.

MMS Should Withdraw the NOI for Proposed Sale 220.

MMS's Proposed Sale 220 is ill-advised for numerous reasons and should be withdrawn. First, the amount of technically recoverable resources is, at best, meager. MMS itself specifically recognized the limited value of recoverable resources in this region when it stated, in response to comments on its 5-year Program for 2007-2012, that the exploration and development scenario for the Mid-Atlantic indicates "*barely enough activity and resource potential to support an exploration and development program.*"[5]

By extension, the smaller Virginia OCS area must contain even less than "barely enough . . . resource potential" to support exploration and development there. MMS estimates the technically recoverable resources in the proposed lease sale area to be just 130 million barrels of oil and 1,140 billion cubic feet of gas. 73 Fed. Reg. 67,203. If all these resources were extracted and processed, they would last only a little over 6 days for

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[1] Letter from Governor Timothy M. Kaine to Randall B. Luthi, Director, MMS (19 Dec. 2008).
[2] Letter from Congressman James P. Moran et al. to Randall B. Luthi, Director, MMS (18 Nov. 2008).
[3] *Id.*
[4] Letter from Donald R. Schregardus, Dept. of the Navy to R.M. Burton, Director, MMS (10 April 2006).
[5] Minerals Mgmt. Serv., OUTER CONTINUAL SHELF OIL & GAS LEASING PROGRAM: 2007-2012 FINAL ENVIRONMENTAL IMPACT STATEMENT at V-147 (April 2007) [hereinafter FEIS], *available at* http://www.mms.gov/5-year/2007-2012FEIS.htm (emphasis added).

oil and about 18 days for natural gas at current rates of U.S. consumption. In fact, all of the Atlantic Coast's estimated 3.8 billion barrels of crude oil[6] and 36.99 trillion cubic feet of natural gas would only last just six and 18 months, respectively.[7] Further, if oil and gas production in the Atlantic started in 2011, as proposed, it would have no impact on domestic oil and gas prices until at least 2030, and even then any such impact would be "insignificant," by the federal government's own estimates.[8]

Second, the remarkably miniscule amount of recoverable resources cannot justify the magnitude of harm that drilling will have on our environment, economy, and national security. Opening the Virginia OCS to drilling for oil and natural gas would damage marine ecosystems; impact countless coastal and marine species, such as the endangered northern right whale and humpback whale as well as bottlenose dolphins; impinge on Essential Fish Habitat, thus damaging commercial and recreational fisheries; cause the loss of valuable coastal wetlands; and necessitate the development of environmentally damaging onshore infrastructure. These impacts would, in turn, lead to drastic economic consequences by undermining the tourist economies and the commercial and recreational fishing industries of the coastal states from Cape Cod to Cape Hatteras.

Additionally, drilling in the Virginia OCS would have significant national security costs. In fact, the Navy has expressed "considerable concern" with MMS's proposal as approximately 72% of the Virginia OCS lies within the larger VACAPES area, the Navy's principal area for conducting a variety of critical training operations.[9] Offshore drilling in this region would place unnecessary restrictions on the Navy when unencumbered access to VACAPES is vital to the Navy's mission of national defense.[10]

Opening virgin territory, such as the Virginia OCS, to drilling is even less justifiable given that industry is using only a fraction (18-20%) of the tens of millions of acres of drilling territory to which it already has access. Rather than giving industry access to new areas for drilling at great environmental costs, oil and gas companies should be required to look to areas for which they already have leases.

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[6] Energy Info. Admin., *Impacts of Increased Access to Oil and Natural Gas Resources in the Lower 48 Federal Outer Continental Shelf*, *in* ANNUAL ENERGY OUTLOOK 2007 Table 10 (2007), *available at* http://www.eia.doe.gov/oiaf/aeo/otheranalysis/ongr.html.

[7] MINERALS MGMT. SERV., Assessment of Undiscovered Technically Recoverable Oil and Gas Resources of the Nation's Outer Continental Shelf (2006). In 2007, the U.S. consumed 20,680,000 barrels of crude oil and petroleum products per day *see* Energy Info. Admin., Petroleum Navigator, http://tonto.eia.doe.gov/dnav/pet/pet_cons_psup_dc_nus_mbblpd_a.htm (last visited 23 Sept. 2008), and consumed 23.054 trillion cubic feet of natural gas. Energy Info. Admin., *U.S. Natural Gas Total Consumption (Million Cubic Feet)* at Table 1, *available at* http://tonto.eia.doe.gov/dnav/ng/hist/n9140us2A.htm.

[8] Energy Info. Admin., *Impacts of Increased Access to Oil and Natural Gas Resources in the Lower 48 Federal Outer Continental Shelf*, *in* ANNUAL ENERGY OUTLOOK 2007 (2007), *available at* http://www.eia.doe.gov/oiaf/aeo/otheranalysis/ongr.html.

[9] Letter from Donald R. Schregardus, Dep't of the Navy to R.M. Burton, Director, MMS (10 April 2006).

[10] The Navy recently reiterated its concerns with respect to oil and gas exploration on the Virginia OCS. *See* Virginia Delegate Joseph Bouchard, Floor Speech (9 July 2008).

Most important, little is known about the Virginia OCS, its seismic conditions, and the impacts of drilling for oil there.[11] For more than 26 years, federal bans have kept drilling for oil and gas off the Atlantic Coast off limits.[12] As a result, no oil and gas development activities or relevant studies have taken place in the region for almost 30 years, and no drilling has ever occurred off the coast of Virginia. The utter lack of scientific information about the Virginia OCS, including updated seismic data, current conditions, underwater geology, and needed studies of fishery habitat, underscores, at a minimum, the need for a full-scale comprehensive and detailed study of the entire Atlantic region, before offshore drilling should be considered. MMS has already indicated that it will not even propose additional studies that are necessary until 2010, when the proposed draft EIS on this lease sale is scheduled to be published.

MMS is putting the cart before the horse: scientific studies should be undertaken before a draft EIS commences. Without sufficient studies, an EIS cannot assess the impacts. If it proceeds as planned, MMS would be circumventing the intent of NEPA. Thus, MMS's position is untenable as a legal and policy matter, and the proposed NOI should be withdrawn.

I. The EIS for Proposed Sale 220 Must Provide a Full and Fair Discussion of Alternatives to the Proposed Lease Sale As Well As the Adverse Environmental Impacts.

Should MMS decide to continue with Proposed Sale 220, NEPA requires MMS to prepare an EIS that provides a full and fair discussion of the alternatives as well as adverse environmental impacts of the proposed action.[13] The purpose of the scoping process is to identify the scope and the significant issues to be analyzed in depth in the EIS.[14] The EIS must address not only the direct and indirect impacts of the proposed action on the environment,[15] but also the cumulative impacts.[16] Additionally, the EIS must "rigorously explore and objectively evaluate all reasonable alternatives,"[17] including

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[11] In responding to public comments on the Outer Continual Shelf Oil & Gas Leasing Program: 2007-2012 Draft Environmental Impact Statement (July 2006) ("DEIS"), MMS readily acknowledged that necessary information was lacking and that studies would need to be done before it could open frontier areas to oil and gas exploration. FEIS at V-83, V-106.

[12] This ban comprised two parts: 1) a congressional moratorium on new leases on the Outer Continental Shelf renewed each year since 1982 as part of the appropriations process; and 2) an executive order issued by President George H. W. Bush in 1990 that withdrew areas under congressional ban from oil and gas leasing through the year 2000. President Bill Clinton extended the withdrawal through 2012; yet, in June 2008, President George W. Bush lifted the executive withdrawal and called on Congress to lift its moratorium. Minerals Mgmt. Serv., Fast Facts: Oil and Gas Production on the Federal Outer Continental Shelf (2008), http://www.mms.gov/ooc/PDFs/MMSFastFactsJune.pdf; Minerals Mgmt. Serv., Frequently Asked Questions: Request for Interest Re Proposed New 5-Year Outer Continental Shelf Oil and Gas Leasing Program (30 July 2008), http://www.mms.gov/5-year/FrequentlyAskedQuestions.htm (last visited 23 Sept. 2008).

[13] 42 U.S.C. §4332(2)(C)(2008).

[14] 40 C.F.R. §1501.7.

[15] *Id.* §§1502.16, 1508.8 (a),(b),

[16] *Id.* §1502.1

[17] *Id.* §1502.14(a)

a "no-action" alternative.[18] As the Council on Environmental Quality ("CEQ") NEPA regulations expressly provide, the alternatives analysis "is the heart of the environmental impact statement."[19] Finally, the EIS must identify mitigation efforts, not included in the proposed action or alternatives, which will minimize adverse impacts or enhance the quality of the human environment.[20]

NEPA imposes an affirmative obligation on MMS to seek out information concerning the environmental consequences of its proposed action, *see National Audubon Society, v. U.S. Department of the Navy,* 422 F.3d 174 (4th Cir. 2005), and requires that MMS use high quality scientific information and accurate scientific analysis when preparing an EIS.[21] Thus, an EIS that relies on stale, outdated data is insufficient and fails to satisfy the "hard look" standard. In particular, when incomplete or missing information is essential, as it is here, NEPA requires federal agencies to conduct independent research or otherwise gather the missing information and include it in the EIS.[22] NEPA relieves agencies of this duty only when the agency can demonstrate that either (1) the means of obtaining the missing information are not known, or (2) the overall costs of obtaining the missing information are exorbitant in light of the size of the project or the possible harm to the environment.[23] Otherwise, an agency's failure to gather the relevant information results in an inadequate EIS analysis. *Fund for Animals v. Norton*, 294 F. Supp. 2d 92, 111 (D.D.C. 2003). Moreover, because the Mid-Atlantic has unique weather and seismic conditions as well as different types of marine resources, MMS cannot "cut and paste" from studies of the Gulf of Mexico. *See Alaska Wilderness League v. Kempthorne*, No. 07-71457, 2008 U.S. App. LEXIS 23861 at *26-35, *41-45 (9th Cir. 20 Nov. 2008) (EIS must assess parameters and potential dangers of specific oil and gas exploration projects on whale and fish populations). Additionally, promises of later monitoring, though important for ensuring that impacts do not exceed expectations, cannot make up for data gaps, which render an EIS analysis insufficient. *See id.* at *32, *44.

At the MMS workshop in Williamsburg on 3-4 December 2008, each scientific group, citing the need to understand impacts on benthics, fisheries and endangered species, recommended studies extending from Cape Cod to Cape Hatteras.[24] We endorse the idea of the geographic scope reaching from New England through the Mid-Atlantic to North Carolina. As can be seen in the foregoing comments, the life cycles of marine

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[18] *Id.* §1502.14(d), 1508.25(b)
[19] *Id.* §1502.14.
[20] *Id.* §§1502.1, 1502.14(f), 1502.16(h).
[21] *Id.* §1500.1(b).
[22] *See id.* §1502.22(a); *Oregon Envtl. Council v. Kunzman*, 817 F.2d 484, 495 (9th Cir. 1987).
[23] *See* 40 C.F.R. §1502.22(a). Although neither of these circumstances is applicable here, NEPA does require the agency in such cases to include in the EIS: 1) a statement that the information is incomplete or unavailable; 2) a statement of the relevance of the incomplete or unavailable information to the agency's evaluation of adverse impacts; 3) a summary of existing credible scientific evidence which is relevant to the agency's evaluation of adverse impacts; and 4) the agency's evaluation of such impacts "based upon theoretical approaches or research methods generally accepted in the scientific community." *Id.* §1502.22.
[24] The report of the proceedings will be available March 2009. Our comments regarding the workshop are based on notes made at the proceedings by Deborah Murray, Senior Attorney with SELC.

mammals, fisheries and other species often include the broad ocean expanse from Cape Cod to Cape Hatteras.

II. The Significant Environmental and Economic Impacts Outweigh Any Exceedingly Short-Term Benefits.

A. Drilling is Not the Solution -- Practical Alternatives Exist to Satisfying the Nation's Energy Needs.

Under the CEQ NEPA regulations, the EIS must specify the underlying purpose and need to which the agency is responding.[25] Ostensibly, the proposed lease sale is MMS's response to the U.S.'s growing need for low-cost, domestic sources of energy. However, as is evident from MMS's own statistics, drilling on the Virginia OCS, or in the entire Mid-Atlantic, will not provide any significant contribution to the U.S.'s energy needs, either in the short- or long-term.[26] Because the impacts from offshore drilling are so significant, and less environmentally damaging means of solving the nation's energy needs are available, MMS should reject drilling as an alternative.

Alternative energy solutions should involve developing and utilizing renewable sources of energy, such as onshore and offshore wind, solar, tidal, and geothermal sources. While MMS has developed a Draft EIS for the Cape Wind Project off the Cape Cod shore,[27] Bluewater Wind is developing several projects in the Mid-Atlantic, including one off the coast of Delaware.[28]

Similar efforts to explore offshore wind power off the coast of Virginia are underway. In 2006, the Commonwealth of Virginia enacted energy legislation pursuant to which the Virginia Coastal Energy Research Consortium ("VCERC") was formed. In 2007, the U.S. Department of Energy designated Virginia a high-priority state with regard to wind power. That same year, the Virginia General Assembly appropriated funds to support the VCERC, which is now actively engaged in gathering the information and conducting the research necessary for offshore wind power development.[29] MMS should revise its 5-year OCS lease-sale program to integrate wind power exploration and development so that subsequent wind energy projects are not foreclosed from use of the ocean area currently designated for oil-gas leasing.

In addition, MMS activities should be coordinated with a larger effort to assess other solutions to meet the U.S.'s energy needs, such as improving fuel economy standards, promoting vehicle maintenance, developing alternative fuels and vehicles, and building more compact communities, all of which would decrease the cost of energy, limit our reliance on unreliable foreign sources of oil, and minimize our impact on the

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[25] 40 C.F.R. §1205.13.
[26] *See* 73 Fed. Reg. 67,203.
[27] 73 Fed. Reg. 3,482 (18 Jan. 2008).
[28] Bluewater Wind, Current Bluewater Wind Projects, http://www.bluewaterwind.com/current.htm (last visited 6 Jan. 2009).
[29] Virginia Coastal Energy Research Consortium, http://www.vcerc.org/ (last visited 6 Jan. 2009).

environment. While MMS does not have regulatory authority over all such alternatives, MMS is still required to consider them.[30]

By looking to alternative ways to satisfy the nation's energy needs, the U.S. can avoid the negative impacts of drilling on coastal and marine resources, address global warming by curtailing greenhouse gas emissions, and help make the transition to a green-energy economy. MMS's alternatives analysis should fully discuss these options as alternatives to Proposed Sale 220. *See Natural Resources Defense Council, Inc. v. Hodel*, 865 F.2d 288, 296 (D.C. Cir. 1988)(Secretary must consider partial as well as complete alternatives to offshore drilling).

B. Oil and Gas Development Will Cause Significant Direct and Indirect Impacts to the Atlantic Coast and Marine Environment.

Oil and gas development could significantly impact the Atlantic marine and coastal environment not only through oil spills but also from pollution from drilling, transport and other harms. However, the degree and specificity of potential harm cannot currently be determined because of the substantial lack of critical baseline information about the Virginia OCS, including its seismic conditions, the impacts of tropical storms on oil and gas operations, the impacts of oil and gas drilling structures on the marine mammals, sea turtles, birds and other wildlife, and ocean fisheries.

Baseline information about the environment to be affected is essential information for purposes of a sufficient EIS. *Fund for Animals v. Norton*, 294 F. Supp. 2d 92, 111 (D.D.C. 2003). To satisfy the "hard look" standard that NEPA requires, an agency must accurately and completely describe the existing environmental conditions. *Center for Biological Diversity v. BLM*, 422 F. Supp. 2d 1115, 1163 (N.D. Cal. 2006) (remanding to agency to revise EIS with adequate baseline information regarding endemic species). Therefore, MMS must include a thorough description of the current conditions of all elements of the Virginia OCS environment, including any areas outside of the Virginia OCS that may directly or indirectly be impacted by Proposed Sale 220.

The EIS must also contain a full description of the current status of coastal and marine species in the Mid-Atlantic Bight from Cape Cod to Cape Hatteras. This description should include a data inventory and synthesis on marine mammals, sea turtles, and coastal and marine birds. Although MMS has some biological information from the late 1970s and early 1980s, when drilling was last considered, scientists recently pointed out at the MMS 3-4 December 2008 workshop that this information is obsolete. These scientists recommended that, to gather adequate information, MMS should conduct at least a 3-year study, covering all seasons. Studies should be designed to determine which whale species are resident in the Virginia OCS. The northern right whale and humpback whales – endangered species – and the beaked whale are of special concern. However, a number of marine mammals – including a rare melonhead whale and common dolphins – have been recently stranded on the Virginia coast, indicating their

[30] 40 C.F.R. §1502.14(c) requires agencies to consider "reasonable alternatives not within the jurisdiction of the lead agency."

presence in the Atlantic near the OCS area; also bottlenose dolphins as well as many species of sea turtles that are protected under the Endangered Species Act are present in the Atlantic. In addition, according to the Virginia Aquarium and Marine Science Center, harbor seals migrate from the North Atlantic in winter and spring.[31]

Further, because of what is known about the presence of migratory species, complicated offshore currents in the Virginia OCS, the potential for oil spills, as well as the potential for infrastructure outside the lease area, the EIS must include a baseline description of migratory habits of fish and marine mammals as well as information on offshore currents and impacts analysis for the entire Atlantic Coast. As The Nature Conservancy points out in its 23 December 2008 letter, breeding birds along the Barrier Island System are diverse and numerous, including the federally endangered piping plover and other species of concern.[32] The Mid-Atlantic also hosts numerous stopovers for migratory shorebirds along the entire Atlantic Coast and its Barrier Islands.[33]

C. Oil and Gas Development Will Have Multiple Cumulative Impacts on Species and Other Natural Resources that Must be Considered in Any EIS.

In addition, MMS must consider the cumulative impacts of its actions, including the inter-regional effects on migrating species. *Natural Resources Defense Council, Inc. v. Hodel*, 865 F.2d 288, 299 (D.C. Cir. 1988)(holding EIS inadequate because it failed to discuss cumulative effects on migrating species). Further, because "[p]oleward shifts in distribution of marine populations can be expected with increasing water temperatures,"[34] the EIS should analyze impacts on migratory species in light of the reasonably expected changes in their migratory routes.

Indeed, cumulative impacts from oil and gas development on the Virginia OCS could significantly affect migratory species throughout their ranges. According to the Virginia Department of Game and Inland Fisheries, "[t]he Mid-Atlantic coastal region is a globally significant area for migration of birds, sea turtles, and marine mammals." In Virginia itself, the Eastern Shore, in particular, provides breeding grounds and stopover points for Federal- and State-listed sea turtles and shorebirds."[35] Migratory species will be impacted by the synergistic effect of OCS and non-OCS activities, such as noises from Navy and NASA activities, throughout the full range of their routes of migration.

For example, noise and vessel collisions resulting from oil and gas development will contribute to the numerous negative impacts that current human activities have on the North Atlantic right whale, threatening its very existence. Since 1994, harms to right whales from vessels have consistently exceeded acceptable levels. Thus, the EIS must

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[31] See "Kitty" Harbor Seal 47822, Data and Maps, http://whale.wheelock.edu/whalenet-stuff/Stop47822/ (last visited 6 Jan 2009).
[32] Letter from The Nature Conservancy to MMS, Call for Information at 4 (23 Dec. 2008) [hereinafter TNC Letter].
[33] *Id.*
[34] FEIS at IV-11.
[35] *Id.* at V-82 to -83.

pay particular attention to the impacts that oil and gas activities will have on this species when added to the other past, present, and reasonably foreseeable impacts from human activities throughout the species' range. Fish migration similarly could be affected by OCS and non-OCS activities.

Other cumulative impacts would include contributions from oil and gas activities to existing problems of ocean ecosystems, such as ocean acidification, toxic pollution, power plant heat pollution, and vast amounts of marine debris.

Finally, offshore oil and gas development will only prolong and expand U.S. dependence on fossil fuels, increasing global warming pollution and sea level rise. The EIS should consider the added impact that drilling on the Virginia OCS will have on the growing problems associated with global warming and climate change, discussed in more detail below.

D. Oils Spills from Drilling on the Virginia OCS Will Cause Irreversible Damage to the Marine Environment and Coastal Economies.

Oil spills, whether chronic or as the result of particular disasters, cause irreversible damage to marine environments and can devastate coastal economies. Oil spreads on water at a rate of 180 feet per second.[36] Consequently, as MMS has recognized, the effects of a large oil spill on water quality, such as that of the Chesapeake Bay, could be immediate and severe.[37] Additionally, because of the complicated ocean currents off the Virginia coast, a spill off Virginia could wash onto the beaches of all states along the Atlantic Coast, from Cape Cod to North Carolina, including Virginia's and North Carolina's significant barrier islands.

Even with improvements in technology, spills from tanker ships and pipelines continue to occur, often going undiscovered for long periods of time. The impacts are severe and long-lasting because current cleanup methods can remove only a small fraction of oil spilled in marine waters.[38]

Additionally, the Mid-Atlantic region, like the Gulf of Mexico, annually is vulnerable to hurricanes and tropical storms, which have played a large part in causing spills from platforms in the Gulf.[39] For instance, the combination of spilled and leaked oil resulting from Hurricanes Katrina and Rita amounted to almost as much as the 11 million gallons spilled by the Exxon Valdez in Alaska's Prince William Sound in 1989.[40]

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[36] Robin Nixon, *Oil Drilling: Risks and Rewards*, LiveScience, 25 June 2008, http://www.livescience.com/environment/080625-oil-drilling.html (last visited 24 Sept. 2008). One hundred and eighty feet is the equivalent of half a football field.

[37] FEIS at IV-270.

[38] *See* BD. ON ENVTL. STUDIES AND TOXICOLOGY, CUMULATIVE ENVIRONMENTAL EFFECTS OF OIL AND GAS ACTIVITIES ON ALASKA'S NORTH SLOPE 7 (2003), *available at* http://books.nap.edu/openbook.php?record_id=10639&page=7.

[39] *See* FEIS at IV-23.

[40] Craig Pittman, *Where Offshore Drilling Goes, Beaches Suffer*, ST. PETERSBURG TIMES, 20 June 2008, *available at* http://tampabay.com/news/environment/water/article634009.ece.

According to the National Oceanic Atmospheric Agency ("NOAA"), eight major hurricanes hit Virginia in the two decades of the 1980s and 1990s. In addition, "[w]ith rising sea-surface temperatures as a result of global warming," hurricane intensities are expected to increase.[41] Of course, hurricanes in the Atlantic off the Virginia coast sometimes do not make landfall but could still have impacts on facilities located within the OCS area.[42]

MMS has stated that it intends to do a study on ocean currents and patterns. This study should cover an analysis of impacts from oils spills, including a detailed trajectory modeling of potential spills and their effects on resources at risk. MMS should also conduct a study to determine the baseline conditions of the bioavailability of hydrocarbons. Knowing this information is critical so that when spills occur, clean-up efforts can aim to restore impacted areas. Recent scientific studies demonstrate that the current bioavailability of hydrocarbons in the Virginia OCS can be determined.[43] Finally, MMS's oil spill analysis must address both the risk and the environmental consequences of the potential magnitude and frequency of oil spills. *See Alaska Wilderness*, 2008 U.S. App. LEXIS 23861 at *46.

E. Offshore Drilling Will Cause Significant Water and Air Pollution.

Once offshore drilling rigs become operational, they routinely discharge produced water, drilling muds, and drill cuttings into the marine environment.[44] Both drilling muds and produced waters contain toxic pollutants, such as mercury, lead, chromium, barium, arsenic, cadmium, and polycyclic aromatic hydrocarbons.[45] At high concentrations, these pollutants kill marine life. At lower concentrations, they cause birth defects, impaired growth, and other negative outcomes. The dumping of polluted muds also results in turbidity and smothers sea life on the ocean floor.[46] Although MMS has suggested that oil companies will be required to remove drilling muds, it is not clear what percentage of this discharge companies will be able to recover. MSS should conduct a baseline study of existing contaminants in the marine environment,[47] and the EIS must fully consider how all non-recoverable discharges, when added to existing contaminants, will affect the environment, including fisheries and marine mammal populations.

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[41] FEIS at IV-11.

[42] National Weather Service, Historical Hurricane Tracks – Virginia and the Carolinas, http://www.erh.noaa.gov/akq/hist.htm (last visited 6 Jan. 2009).

[43] *See, e.g.*, Katherine R. Springman, Jeffrey W. Short, Mandy Lindeberg, and Stanley D. Rice, *Evaluation of bioavailable hydrocarbon sources and their induction potential in Prince William Sound, Alaska*, 66 MARINE ENVTL. RESEARCH 218–220 (2008); Vrana, B., G.A. Mills, M. Kotterman, P. Leonards, K. Booij, R. Greenwood., *Modelling and field application of the Chemcatcher passive sampler calibration data for the monitoring of hydrophobic organic pollutants in water*, 145 ENVIRON. POLLUT. 895-904 (2007).

[44] FEIS at IV-279. Though the discharge of production wastes into open water is prohibited in coastal waters, it is permitted in marine waters under the NPDES program. *Id.*

[45] *Id.* at IV-279 to -280.

[46] Jonathan Wills, Muddied Waters: A Survey of the Offshore Oilfield Drilling Wastes and Disposal Techniques to Reduce the Ecological Impact of Sea Dumping, 54-72 (25 May 2000), http://bankwatch.org/documents/muddiedwaters_02.pdf; *see also* FEIS at IV-280.

[47] Scientists at the Williamsburg MMS workshop suggested testing commercially harvested fish and shellfish, including scallops, tilefish, red crabs, and goosefish.

In addition, each drilling platform is expected to release tons of nitrogen oxides, carbon monoxide, sulfur dioxide, and volatile organic compounds per year.[48] These compounds are the basic ingredients of smog, haze, and other air pollution. The EIS must consider how, based on wind patterns, emissions will impact air quality onshore. Further, the EIS should address the type and amount of greenhouse gas emissions that extraction and consumption of the estimated volumes of gas and oil in this region would produce.

Significant indirect environmental impacts on the Atlantic Coast will result from refining oil and gas from the OCS. The typical refinery, which can occupy as much land as several hundred football fields,[49] includes processing areas, storage facilities, auxiliary buildings, electrical substations, and transportation systems.[50] According to a report published by the Center for Health and the Global Environment at Harvard Medical School, oil refineries present major health hazards for human communities as well as marine and terrestrial ecosystems.[51] Further, average-sized U.S. refineries release on a daily basis more than an estimated 11,000 gallons of oil into the air and water, including dangerous emissions such as hydrocarbons, sulfur dioxide, carbon monoxide, and particulate solids.[52] Oil refineries impact surrounding communities and environments in many other ways as well, including through the discharge of thermal pollution, resulting in significant disruptions to aquatic ecosystems, and noise pollution, which poses a significant threat to the health and safety of oil refinery employees.[53]

Similarly, natural gas must be processed. Some initial processing and separation occurs at the wellhead, but most of the processing of natural gas occurs at a processing plant. Although the composition of natural gas varies from region to region, processing typically removes impurities, such as helium, carbon dioxide, hydrocarbons, moisture, and corrosive and toxic hydrogen sulfide.[54] The process of separating out these materials can, like oil, result in the discharge of a range of harmful pollutants, such as sulfur dioxide. The onshore and offshore operations could have severe impacts on marine mammals, fish and other wildlife as well as human populations and the tourism industry along the entire Atlantic Coast, including the City of Virginia Beach, the Coastal Reserve in Virginia, and the Outer Banks of North Carolina.

F. Oil and Gas Development Will Cause Significant Harm to Marine Mammals, Fish, Turtles, and Marine and Coastal Birds.

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[48] *See* FEIS at IV-266 to -267.

[49] *See* "What is a refinery," http://www.eia.doe.gov/kids/energyfacts/sources/non-renewable/refinery.html (last visited 3 Dec. 2008).

[50] DWIGHT HOLING, COASTAL ALERT: ECOSYSTEMS, ENERGY, AND OFFSHORE OIL DRILLING 46 (1990).

[51] Paul R. Epstein and Jessie Selber, eds., Oil: A Lifecycle Analysis of its Health and Environmental Impacts 5 (March 2002), *available at* http://chge.med.harvard.edu/publications/documents/oilfullreport.pdf.

[52] *Id.* at 5.

[53] *Id.*

[54] Dwight Holing, *Coastal Alert: Ecosystems, Energy, and Offshore Oil Drilling* 45 (1990).

In addition to the significant risk of harm from oil spills and marine water pollution, oil and gas development will subject marine species to other injurious impacts, including underwater noise and distracting above- and under-water lighting. Marine mammals, fish, and sea turtles could be negatively impacted by the above- and below-water lighting of oil rigs, platforms, and vessels, which could potentially cause species to alter their movements and migratory patterns.

1. The Substantial Harmful Noise Will Significantly Affect Whales, Other Marine Mammals, and Fish.

Seismic surveying associated with oil and gas development involves the repetitive use of high energy air guns. The blasts of seismic waves reverberate throughout the ocean and inflict substantial injury on marine mammals and fish, which are sensitive to and rely on sound for almost all important aspects of their life.[55] These noises can be deadly to whales and have led to mass strandings of whales and other marine mammals.[56] Studies reveal that noise from seismic air guns also causes damage to fish species, with resulting decreases in commercial fishing catch rates.[57]

Noise impacts from oil and gas development also include major noise generated by vessel traffic, pile driving, vessel operation, platform noise, drilling, and construction. The EIS should consider the impacts of noise on the various specific hearing ranges of marine mammals and fish, including the ranges of sea turtles, and humpback, sperm, beaked, and right whales. An adequate EIS analysis would require MMS to accurately identify the current ocean acoustic environment off the coast of Virginia and its influence on the behavioral patterns of sensitive marine mammals, turtles and fish as well as a commitment to monitor noise impacts during all phases of oil and gas development activity.

2. The Impacts from Oil and Gas Development Could Place Threatened and Endangered Species in Significant Jeopardy.

Species listed as threatened and endangered under the Endangered Species Act ("ESA") could be placed in significant jeopardy from the direct and indirect effects of oil

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[55] Taking and Importing Marine Mammals, Taking Marine Mammals Incidental to Navy Operations of Surveillance Towed Array Sensor System Low Frequency Active Sonar, 67 Fed. Reg. 46,712, 46,718 (16 July 2002); Linda S. Weilgart, Assistant Professor and Research Associate, Dalhousie University, The Impact of Ocean Noise Pollution on Marine Biodiversity (Mar. 2008), *available at* http://awionline.org/oceans/Noise/IONC/Docs/Weilgart_Biodiversity_2008.pdf; *see also* Laine Welch, *Seafood Industry Worries About Offshore Oil Leases in Alaska*, ALA. J. OF COMMERCE, 31 Aug. 2008, *available at* http://www.alaskajournal.com/stories/083108/hom_20080831018.shtml.

[56] Robin Nixon, *Oil Drilling: Risks and Rewards*, LiveScience, 25 June 2008, *available at* http://www.livescience.com/environment/080625-oil-drilling.html; Weilgart, *supra* note 55; *see also* NAT'L OCEANIC AND ATMOSPHERIC ADMIN. & U.S. DEPT. OF THE NAVY, JOINT INTERIM REPORT: BAHAMAS MARINE MAMMAL STRANDING EVENT OF 15-16 MARCH 2000 (2001), *available at* http://www.bahamaswhales.org/resources/Interim_Bahamas_Report.pdf.

[57] R.D. McCauley, J. Fewtrell, & A.N. Popper, *High Intensity Anthropogenic Sound Damages Fish Ears*, J. ACOUST. COC. AM. 113 (2003), *available at* http://www.awionline.org/oceans/Noise/IONC/Docs/McCauley.pdf; Weilgart, *supra* note 55.

and gas development on the Virginia OCS. When analyzing the potential impacts to federally listed species, MMS must also satisfy the requirements of the ESA. *Tribal Village of Akutan v. Hodel*, 869 F.2d 1185, 1187 (9th Cir. 1988)(while not mentioned in the Outer Continental Shelf Lands Act ("OCSLA"), ESA nevertheless "applies of its own force and effect"). The ESA requires agencies to use "the best scientific and commercial data available."[58] Accordingly, MMS must formally consult with the U.S. Fish and Wildlife Service and with NOAA's National Marine Fisheries Service ("NMFS"),[59] regarding potential impacts on each federally protected species that may be affected by oil and gas development activities.[60]

a. Oil and Gas Development Could Significantly Harm Threatened and Endangered Whales.

Oil and gas development on the Virginia OCS could have significant direct impacts on threatened and endangered whales, including the North Atlantic right whale, *Eubalaena glacialis*, which is at the brink of extinction. Scientists have warned that the likelihood of the species' extinction is imminent. The current status of this species is so tenuous that NMFS has determined the annual allowable removal levels (potential biological removal or "PBR") for the right whale is *zero*.[61] As discussed above, the right whale could suffer serious harm from the variety of noises that oil and gas development will produce. Oil and gas development also creates greater risk of ship strikes. The Mid-Atlantic region is a vital corridor between feeding areas and calving grounds, especially for pregnant females and mother-calf pairs. According to NMFS, it is critically important to protect the right whale's migration corridor because the animals can be exposed to serious risks, including collision, while in transit between seasonal residence areas.[62] As NMFS has noted, the greatest known cause of right whale mortality in the western region of the North Atlantic is collision with ships. Of the 50 dead right whales reported since 1986, at least 19 were killed by vessel collisions.[63] Considering the poor survival rate for breeding female right whales, it is particularly important that the entire migratory corridor be identified and protected.

b. Oil and Gas Development Could Significantly Harm Threatened and Endangered Birds, Marine Mammals, and Sea Turtles.

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[58] 16 U.S.C. §1536(a)(2).

[59] NMFS implements, among others, the Marine Mammal Protection Act, 16 U.S.C. §1384 *et seq.* (2008), and the Marine Protection, Research and Sanctuaries Act, 33 U.S.C. §1445 *et seq.* (2008).

[60] The Virginia Department of Conservation and Recreation recommended that MMS consult with NMFS because of listed whales and marine mammals and with FWS because of the protected status of gull-billed tern, bald eagle, peregrine falcon, piping plover, Wilson's plover, and loggerhead sea turtle. FEIS at V-101. According to the Virginia Aquarium and Marine Science Center, other sea turtles are also protected.

[61] NMFS, Northern Right Whale (*Eubalaena glacialis*): Western Atlantic Stock at 10 (Oct. 2007) *available at* http://www.nmfs.noaa.gov/pr/pdfs/sars/ao2007whnr-w.pdf.

[62] NMFS, Recovery Plan for the North Atlantic Right Whale at I-C2 (revised August 2004).

[63] *See* Kraus, S.D., et al., *North Atlantic Right Whales in Crisis*, 22 July 2005, SCIENCE at 561. Other threats to the species include fishing gear entanglements, habitat degradation, noise, contaminants, underwater bombing activities, climate and ecosystem change, and commercial exploitation.

Oil and gas drilling may directly impact other whales, dolphins and numerous threatened and endangered birds, marine mammals, and sea turtles, including the gull-billed tern, bald eagle, peregrine falcon, piping plover, Wilson's plover, and loggerhead sea turtle.[64] Oil from spills could come in direct contact with these species and their critical habitats, causing significant harm. Additionally, marine mammals and turtles would be subject to the increased risk of collision as well as increased threats from marine debris discharged from OCS structures and vessels. Impacts from the ingestion of or entanglement with discarded waste could cause intestinal blocking, reduced mobility, and other lethal and sublethal effects. MMS should also analyze potential mitigation and monitoring measures for impacts on protected species and habitat.[65]

G. Oil and Gas Development Could Significantly Compromise Atlantic Fisheries.

Oil and gas development would place the fish and fisheries of the entire Atlantic at significant risk. All told, commercial and recreational fishing from Massachusetts through North Carolina account for over nine billion dollars.[66] In 2007, Virginia and North Carolina hosted $212,877,743 worth of annual commercial fish landings in 2007.[67] In 2006, saltwater sports fishing in Virginia accounted for 5,541 jobs and contributed $945,023,716 to the state's economy.[68] North Carolina enjoyed 9,735 jobs from sports fishing, which contributed $1,739,156,679 to its economy during a comparable period.[69] Offshore drilling would damage both commercial and recreational saltwater fishing industries by causing the loss of fishing grounds; negatively affecting navigation routes; displacing fishing infrastructure; and decreasing catches due to seismic testing, oil spills, and contamination from toxic drilling muds.[70]

In addition to the laws related to marine mammals and other protected species, NMFS implements a number of laws related to Atlantic fisheries, including the Magnuson-Stevens Fishery Conservation and Management Act,[71] and the Atlantic Coastal Fisheries Cooperative Management Act.[72] The Atlantic States Marine Fisheries Commission, with jurisdiction over the Atlantic from New England through Florida, manages a number of fish species, including Atlantic herring, menhaden, sturgeon, bluefish, red drum, Spanish mackerel, spot, spotted sea trout, striped bass, flounder,

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[64] FEIS at V-101.
[65] *See* FEIS at V-82 (NOAA suggestions).
[66] *See* NMFS, Annual Commercial Landing Statistics, http://www.st.nmfs.noaa.gov/st1/commercial/landings/annual_landings.html (last visited 10 Jan. 2009)(reporting $1,060,299,536).
[67] *Id.*
[68] Am. Sportfishing Ass'n, Sportfishing in America at 10 (revised 2008), *available at* http://www.asafishing.org/asa/images/statistics/resources/Sportfishing%20in%20America%20Rev.%207%2008.pdf.
[69] *Id.*
[70] Letter from W.F. "Zeke" Grader, Jr., Executive Director, Pacific Coast Fed'n of Fishermen's Assocs., to Nancy Pelosi, Speaker, U.S. House of Representatives & Harry Reid, Majority Leader, U.S. Senate (8 Sept. 2008) (on file).
[71] 16 U.S.C. §1801 *et seq.* (2008).
[72] 16 U.S.C. §5109 *et seq.* (2008).

weakfish and horseshoe crabs, which are also found in the Mid-Atlantic.[73] In any EIS on the lease sale, MMS must consult with the NMFS for information about these fisheries as well as marine mammals to identify any existing studies of these species, their life cycle, and their habitat, as well as potential impacts from oil and gas exploration and development off the Virginia coast.

1. Essential Fish Habitat ("EFH")

The Magnuson-Stevens Fishery Conservation and Management Act instructs each federal agency to consult with the Secretary of Commerce on any action that may impact "essential fish habitat" ("EFH");[74] EFH is defined as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity."[75] In addition, Habitat of Areas of Particular Concern ("HAPC") is also identified.[76] Under the rules implemented by the NMFS, each of the regional fishery management councils are asked to identify EFH for any fishery managed under the Act, based on NMFS guidelines. Activities that require consultations include a broad variety: dredging, filling, excavation, *mining*, impoundment, discharge, actions that contribute to nonpoint pollution and sedimentation, introduction of potentially hazardous materials, and conversion of aquatic habitat.

Virginia is a member of the Mid-Atlantic Fishery Management Council,[77] which also includes New York, New Jersey, Pennsylvania, Delaware, Maryland, and North Carolina.[78] The EFHs in the Mid-Atlantic identified by the Council include: summer flounder, scup, black sea bass, bluefish, Atlantic surfclam, Ocean quahog, ilex and loligo squid, Atlantic mackerel, Atlantic butterfish, golden tilefish, spiny dogfish, and tilefish. The Mid-Atlantic Council has also identified HAPC for summer flounder and tilefish. The New England Fishery Management Council has identified essential fish habitat that extends into the Mid-Atlantic, including monkfish, yellowtail flounder, windowpane, flounder, winter flounder, red hake and silver hake.[79]

Because Virginia is the northernmost boundary for some EFH or HAPC in the South Atlantic, MMS should consult with NMFS regarding the Cape Cod area to the South Atlantic; of special note are coral formations off the Virginia coast.[80] In addition,

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[73] *See* NOAA, Atlantic States Marine Fisheries Commission, www.csc.noaa.gov/cms/asmfc.htm (last visited 6 Jan. 2009).
[74] 16 U.S.C. §1855(b)(2)(2000).
[75] *Id.* §1802(10).
[76] These Habitat Areas of Particular Concern are subsets of EFH that provide important ecological functions or are especially vulnerable to degradation, according to NMFS. The councils may designate specific habitats as HAPC based on certain criteria. HAPCs alone will not suffice in supporting the larger numbers of fish needed to maintain sustainable fisheries and a healthy ecosystem.
[77] *Id.* §1855(b)(1)(A).
[78] Mid-Atlantic Fishery Management Council, http://www.mafmc.org/mid-atlantic/mafmc.htm (last visited 6 Jan. 2009).
[79] NOAA, Office of Habitat Conservation Habitat Protection Division, Essential Fish Habitat, http://www.nmfs.noaa.gov/habitat/habitatprotection/efh/GIS_inven.htm (last visited 6 Jan. 2009).
[80] NOAA, Habitat Areas of Particular Concern, http://www.nmfs.noaa.gov/gis/data/hapc.htm and http://ocean.floridamarine.org/efh_coral/ims/viewer.htm (last visited 6 Jan. 2009).

in a recent letter to MMS, The Nature Conservancy has discussed in detail essential tilefish and other fish habitat in the Norfolk and Washington Canyons and other areas of the Atlantic off the coast of Virginia.[81] Thus, MMS should consult with NOAA's National Marine Fisheries Commission, and the New England, Mid-Atlantic and South Atlantic Fishery Management Councils to identify any EFH resources in the OCS lease-sale area.

2. Blue Crab Fishery

Oil and gas development could pose a considerable risk to the blue crab fishery. The blue crab is both ecologically and commercially important to the Chesapeake Bay, but the fishery is currently in crisis as the population has dropped by 70 percent since 1990.[82] According to John McConaughan, professor of biological oceanography at Old Dominion University in Norfolk, Virginia, a consensus of scientists studying the species have concluded that larval development takes place on the continental shelf. Through behavioral responses to environmental cues, the post-larval megalopa stage uses the nighttime flood tides to re-enter and move up the Chesapeake Bay. Sampling over multiple years indicates that the late stage larvae and post-larvae are found in the surface waters *at least* 50-70 miles off the Virginia coast. Because blue crab larvae are extremely sensitive to toxic materials, including compounds found in oil and drilling muds, oil and gas development on the Virginia OCS could have serious impacts on the species. The EIS must address the potential environmental impacts that oil and gas development will have on this species as well as the resulting impacts to the ecology and fishery of the Chesapeake Bay.

3. Oyster Restoration

Virginia and Maryland are currently working together on restoration of oysters in the Chesapeake Bay.[83] Because the Atlantic oyster (*Crassostrea virginica)* is an important product of the area and because currently the native oysters are in decline, MMS must examine the impacts – direct, indirect and cumulative -- of oil and gas exploration and development on native and nonnative species both within the Chesapeake Bay and other areas along the Atlantic Coast where Atlantic oysters are found.

H. Oil and Gas Development Will Have Catastrophic Impacts on Coastal Economies.

Tourism, commercial fishing, and recreational fishing are vitally important to the economies of many coastal states, including Virginia. According to the Virginia Department of Environmental Quality, Virginia Beach's three-mile-long oceanfront

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[81] TNC Letter, *supra* note 32 at 4-6.

[82] *Clawing for Life: Facing disaster, two governors act to save the Chesapeake Bay's crabs*, WASH. POST, 17 Apr. 2008, at A22, *available at* http://www.washingtonpost.com/wp-dyn/content/article/2008/04/16/AR2008041603281_pf.html.

[83] *See* Maryland Dep't of Natural Resources, Oysters, http://www.dnr.state.md.us/dnrnews/infocus/oysters.asp (last visited 6 Jan. 2009).

boardwalk is the eighth most popular boardwalk in the nation.[84] From Cape Cod to Cape Hatteras, tourism generates $107.1 billion per year and supports 1,306,812 jobs.[85]

Oil and gas development could put these economies at significant risk. Offshore activities, air pollution, spills, and oil slicks, debris, and sediments washed onto beaches could have significant indirect effects on the tourism and recreation industries of states all along the Mid-Atlantic coast, which rely on clean and healthy beaches. The same impacts could indirectly threaten their commercial fishing and cruise ship industries. Spills could also negatively affect real estate markets and cause temporary losses of job and income for these states.

I. Oil and Gas Development Will Have Substantial Impacts on Fragile Marine and Coastal Ecosystems.

1. Oil and Gas Development Will Expose Areas of Special Concern to Significant Risks.

Oil and gas development on the Virginia OCS could have direct negative impacts on the resource values and uses of areas of special concern, including the Chesapeake Bay, which is the largest and most biologically diverse estuary in North America. The Bay is the only estuary designated as both a National Estuary and a National Estuarine Research Reserve. The Bay hosts young crabs, oysters and other species at critical stages of their life cycle, and is a major migration path for anadromous fish species.[86] Additionally, the coastal region from Cape Cod to North Carolina is home to 26 National Wildlife Refuges, which protect thousands of acres of coastal wetland and tidal marshes that are considered critical feeding habitat for millions of migratory birds traveling the Atlantic Flyway.[87] Virginia has four National Wildlife Refuges directly on the Atlantic or the mouth of the Chesapeake Bay. In addition, there are many other private, local and state preserves in the area, including The Nature Conservancy's Virginia Coast Reserve, which has been recognized as a United Nations International Man and the Biosphere Reserve, a National Natural Landmark by the U.S. Department of the Interior, a National Science Foundation Long-Term Ecological Research Site, and a Western Hemisphere International Shorebird Reserve Network Site.[88] The coastline of Virginia itself is lined with barrier islands designated by the U.S. Fish and Wildlife as an International Shorebird Reserve.[89] Offshore infrastructure, oil spills, and ocean discharges that wash ashore would negatively impact the coastal habitats, wildlife, and recreational and scenic values of these special places.[90]

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[84] FEIS at IV-326.
[85] MARK DORFMAN & NANCY STONER, TESTING THE WATERS: A GUIDE TO WATER QUALITY AT VACATION BEACHES 29 (17th ed. 2007), *available at* http://www.nrdc.org/water/oceans/ttw/ttw2007.pdf, p. 29.
[86] FEIS at IV-311 to -312.
[87] *See* U.S. FWS, National Wildlife Refuge System, www.fws.gov/refuges (last visited 6 Jan. 2009).
[88] *See* TNC Letter, *supra* note 32.
[89] U.S. FWS, Chincoteague National Wildlife Refuge, Introduction, http://www.fws.gov/northeast/chinco/introduction.htm (last visited 6 Jan. 2009).
[90] FEIS at V-116.

Drilling on the Virginia OCS could also significantly impact canyon areas, about which relatively little is known other than that they are areas of high productivity and biodiversity. The canyon areas are also home to fast, unpredictable currents, which make oil and gas exploration even more problematic. These special areas should be considered off limits to any oil or gas exploration or development.

2. OCS Oil and Gas Development Will Destroy Coastal Zones And Wetlands, including Benthic Habitat, Risk Harm to Endangered Whales, and Add to Causes of Global Climate Change and its Impact on Coastal Communities.

Because offshore drilling requires the support of heavy industrial infrastructure onshore, the coastal zone could become cluttered with miles of unattractive pipelines, smelly refineries, and air-polluting smokestacks. Building the necessary infrastructure will directly impact large tracts of coastal land in the Mid-Atlantic states, augment the waste and pollution from offshore operations, and cause significant losses of coastal wetlands.

To lay pipelines in coastal environments, oil and gas companies often excavate canals through coastal wetlands, resulting in the destruction of approximately six acres of vegetation for each linear mile of pipeline constructed.[91] Notably, Louisiana has lost up to 40 square miles of marsh a year for several decades (approximately 80 percent of the nation's annual coastal wetland loss),[92] and a substantial portion of these losses are estimated to be due to oil and gas production.[93] The Mid-Atlantic coastal states have abundant and highly productive expanses of salt marshes that oil and gas infrastructure could similarly destroy.

Onshore development could also indirectly threaten vegetation and wetland species. For instance, the installation of pipelines is likely to provide an opportunity for the invasive common reed (*Phragmites australis*) to get a foothold, which could adversely affect other plants and natural areas in the vicinity. The Virginia Department of Environmental Quality has raised this possibility as a concern.[94]

Also, drilling will directly disrupt the benthic habitat of the Virginia OCS, which is a temperature transition zone between the warmer Gulf Stream and the cold pool waters of New England.[95] Because the transition zone results in significant topographic complexity from the shelf to the deep slope, the area is unique, and thus the information

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[91] DWIGHT HOLING, COASTAL ALERT: ECOSYSTEMS, ENERGY, AND OFFSHORE OIL DRILLING 30-31 (1990).
[92] *See Civic Soldier Battles for the Wetlands*, Watermarks, June 2008, http://www.lacoast.gov/ (last visited 24 Sept. 2008).
[93] LONG-TERM EFFECTS OF OFFSHORE OIL AND GAS DEVELOPMENT 26 (Donald F. Boesch & Nancy N. Rabalais, eds., 1987). It should be noted, however, that the extent of these losses is likely due to a combination of factors (not just oil and gas operations), such as the physical geology of Louisiana's coastline and sediment starvation caused by flood control measures on the Mississippi River.
[94] FEIS at V-118.
[95] Linda Schaffner, VIMS, (MMS Workshop (3-4 Dec. 2008)).

about benthic assemblages off the coast of New Jersey and North Carolina cannot be extrapolated to the Virginia OCS.[96]

III. MMS Must Analyze the Impacts of Oil and Gas Exploration Against the Backdrop of Global Climate Change.

MMS must analyze the impacts of drilling off the Virginia coast against the background of global climate change. The environmental stresses caused by the Virginia OCS project will interact with growing climate stressors and may push ocean and coastal ecosystems toward collapse. As the Intergovernmental Panel on Climate Change ("IPCC") has stated, "climate changes are being imposed on ecosystems experiencing other substantial and largely detrimental pressures."[97]

As NEPA regulations require, a project's indirect and cumulative impacts must be considered, including those which "are later in time or farther removed in distance, but are still reasonably foreseeable."[98] Thus, since it is reasonably foreseeable that the Virginia OCS project may exacerbate climate-related impacts, its effects must be analyzed.

With the IPCC suggesting "that beyond 2050 climate change is very likely to be the major driver for biodiversity loss globally,"[99] it estimates that "on average 20% to 30% of species assessed are likely to be at increasingly high risk of extinction from climate change" if temperatures rise by 2 to 3 degrees Celsius.[100] Should global temperatures climb by 4 degrees Celsius or more, as many as 70% of the species assessed by the IPCC's global survey may go extinct.[101]

Changes are already occurring worldwide,[102] with rising seas threatening coastal wetlands and estuaries, particularly during severe storms.[103] Off the coast, coral reefs are dying at a frightening rate, with 16% of the world's coral perishing in one massive bleaching event in the summer of 1998.[104] As The Nature Conservancy explains in its letter, reefs off the Virginia coast are also at risk.[105] Invasive species, such as *Phragmites australis*, spreading rapidly in these highly-disturbed habitats, further complicate the picture.

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[96] *Id.*
[97] Andreas Fischlin et al., *Ecosystems, their properties, goods and services. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* at 241 (2007).
[98] *See* 40 C.F.R. §§1508.7, 1508.8.
[99] *Id.*
[100] *Id.* at 242.
[101] *Id.*
[102] *See, e.g.*, Terry L. Root *et al.*, *'Fingerprints' of Global Warming on Wild Animals and Plants*, 1333 Nature 1 (12 Sept. 2002).
[103] Cynthia Rosenzweig et al., *Assessment of Observed Changes and Responses in Natural and Managed Systems. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* at 92-93.
[104] *Id.* at 94.
[105] *See* TNC letter, *supra* note 32.

These and similar climate-linked temporal and spatial shifts are of particular concern because, combined with the proposed OCS development, they risk crossing ecological thresholds – points where even small changes can push systems into "widespread coordinated system failure characterized by a catastrophic change in the overall state of the system."[106] While ecosystems are often quite stable within the range of variability in which they have evolved,[107] rapid changes in the frequency and magnitude of disturbance of the sort that climate change is creating may swiftly erode stability and pave the way for a crash.[108]

Because climate change will amplify existing ecosystem stressors, MMS must take into account the direct, indirect, and cumulative impacts of global warming when considering the proposed OCS lease sale. As the Ninth Circuit Court of Appeals concluded in a related context, "[t]he impact of greenhouse gas emissions on climate change is precisely the kind of cumulative impacts analysis that NEPA requires agencies to conduct." *Center for Biological Diversity v. National Highway Traffic Administration*, 538 F.3d 1172, 1217 (9th Cir. 2008); *see also Border Power Plant Working Group v. Department of Energy*, 260 F. Supp. 2d 997, 1028-29 (S.D. Cal. 2003). Rather than simply list various stressors, accounting for climate change requires an analysis whether ecosystem stressors are likely to cross major ecological thresholds or push ecosystems towards collapse as the climate continues to warm.

Two related analyses are required here: first, the incremental contributions to climate change from the proposed OCS lease sale activities, and second, an assessment of how OCS drilling and development would exacerbate the effects of climate change on the ecosystems and species already experiencing or expected to experience climate stress. Such analyses are essential to accurately forecasting and mitigating environmental impacts.

Properly weighing the direct, indirect, and cumulative impacts of the Virginia OCS lease sale against the background of climate change is essential to making well-informed choices. To fulfill the requirements of NEPA and make the careful choices that the OCSLA requires, the MMS must consider climate change in every aspect of its impacts analysis.

Conclusion

In summary, we urge MMS to withdraw the proposed lease sale. While the amount of recoverable oil and natural gas is limited, the potential harmful environmental, social and economic impacts are great -- to the life cycle and habitat of many fish, marine mammals, sea turtles, and birds in the Mid-Atlantic Bight, including endangered species.

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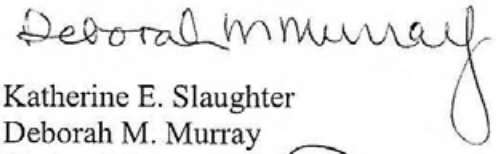
[106] Daniel B. Fagre et al., U.S. Climate Change Science Program, *Synthesis and Assessment Product 4.2: Thresholds of Change in Ecosystems*, Public Review Draft at 6 (14 Aug. 2008). The explosion of beetle infestations in western forests is one well-known example of such a sudden shift. *Id.* at 14-15.
[107] *Id.* at 31.
[108] *Id.* at 31-32.

Rather than go forward with the lease sale, MMS should explore alternatives such as the possibility of off-shore wind development, which should be integrated into its five-year plan. The proposed OCS lease sale is an unnecessary gamble – not only for the wildlife involved but also for the economic and social well-being of the coastal communities whose economies depend on tourism and commercial and recreational fishing.

We also urge MMS to seek additional funding for its Environmental Studies Program to research the many issues identified by the scientific community. As the U.S. Commission on Ocean Policy recognized, "[o]cean managers and policy makers need comprehensive scientific information about the ocean and its environment to make wise decisions."[109] As the Commission recognized, scientific information is especially needed to understand the cumulative and secondary impacts of potential OCS oil and gas development,[110] with climate change a major component of this scientific analysis.

We appreciate the opportunity to comment on this proposal.

Sincerely yours,



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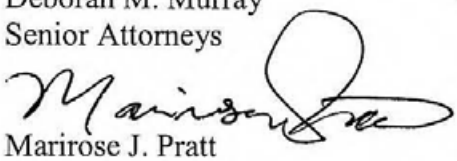

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cc: Randall B. Luthi, Director, MMS
Governor Timothy Kaine
Nikki Rovner
Brian Shepard
Congressman James Moran
Congressman Thomas Perriello
Congressman Gerald Connolly
Congressman Glenn Nye
Senator James Webb
Senator Mark Warner
The Honorable Joseph Bouchard, Virginia General Assembly

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[109] U.S. Commission on Ocean Policy, An Ocean Blueprint for the 21st Century: Final Report of the U.S. Commission on Ocean Policy 323 (2004), *available at* http://www.oceancommission.gov/documents/full_color_rpt/welcome.html.
[110] *Id.* at 363.

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21 September 2009

Via Electronic Submission

Ms. Renee Orr
Chief, Leasing Division
Minerals Management Service, MS 4010
381 Elden Street
Herndon, VA 20170-4817

Mr. James F. Bennett
Chief, Branch of Environmental Assessment
Minerals Management Service, MS 4042
381 Elden Street
Herndon, VA 20170

Re: 2010-2015 Oil and Gas Leasing in the Outer Continental Shelf, Comments on Draft Proposed 5-Year Leasing Program and Notice of Intent to Prepare an Environmental Impact Statement

Dear Ms. Orr and Mr. Bennett:

We submit these comments on behalf of the Southern Environmental Law Center ("SELC"); the Virginia League of Conservation Voters; the Virginia Chapter of the Sierra Club; the South Carolina Coastal Conservation League; Conservation Voters of South Carolina; the South Carolina Chapter of the Sierra Club; South Carolina Wildlife Federation; North Carolina Coastal Federation; the North Carolina Chapter of the Sierra Club; and Georgia's Center for a Sustainable Coast in response to the Department of the Interior Minerals Management Service's ("MMS") request for comments on its Draft Proposed 5-Year Outer Continental Shelf ("OCS") Oil and Gas Leasing Program for 2010–2015 ("Plan")[1] and Notice of Intent To Prepare an Environmental Impact Statement ("EIS") for the Proposed 5-Year Program ("NOI").[2] We appreciate the opportunity to provide input as this Administration moves forward in shaping a sustainable, clean energy policy for our Nation's future. SELC is a regionally-focused organization that uses legal tools to advocate on behalf of the environment in the southern states of Virginia, Tennessee, North Carolina, South Carolina, Georgia, and Alabama. As such, these comments concentrate on the Mid- and South-Atlantic OCS.

[1] MINERALS MGMT. SERV., DRAFT PROPOSED OUTER CONTINENTAL SHELF (OCS) OIL AND GAS LEASING PROGRAM 2010-2015 (2009), *available at* http://www.mms.gov/5-year/2010-2015New5-YearHome.htm [hereinafter MMS, 2010-2015 DPP].
[2] 74 Fed. Reg. 3631 (21 Jan. 2009) (Request for Comments); 74 Fed. Reg. 9426 (4 Mar. 2009) (Extension of Comment Period).

We strongly urge MMS to withdraw the Mid- and South-Atlantic OCS regions from proposed oil and gas development because: 1) the miniscule estimated recoverable resources are not worth the significant potential environmental and economic costs; 2) opening these OCS regions to oil and gas development is inconsistent with this Administration's stated energy policy that emphasizes developing clean, renewable energy sources as a means of lessening dependence on foreign oil and helping address the threat of climate change; and 3) an analysis of the factors MMS must consider under Section 18 of the Outer Continental Shelf Lands Act ("OCSLA")[3] counsels against oil and gas development in these regions.

The estimated amounts of recoverable reserves in the entire Atlantic OCS— including the Mid-, South-, and North-Atlantic OCS planning regions—are, by the government's own accounts, minimal. According to MMS's survey, the Atlantic OCS has significantly less recoverable oil and gas reserves than any other OCS region.[4] In fact, the Atlantic OCS contains only an estimated 3.82 billion barrels of oil and 36.99 trillion cubic feet of natural gas,[5] which would last only six and 18 months, respectively, at current rates of consumption.[6]

Section 18 of OCSLA requires that MMS balance this resource potential against the potential for significant and unreasonable adverse environmental impacts of oil and gas development in these OCS regions.[7] A proper balance under OCSLA clearly warrants excluding the Mid- and South-Atlantic OCS from proposed oil and gas development. Should MMS nonetheless decide to locate oil and gas leases in these regions as part of the next 5-year plan, this comment letter identifies the scope of environmental issues and alternatives that, at a minimum, the EIS for the plan must discuss in accordance with the National Environmental Policy Act ("NEPA").[8]

Because the proposed Plan includes the Virginia lease sale 220, scheduled for 2011, we call to your attention and incorporate by reference our Comments on the Notice of Intent for Proposed Sale 220, contained in our letter to MMS of 12 January 2009.

I. OPENING THE MID- AND SOUTH-ATLANTIC OCS TO OIL AND GAS DEVELOPMENT IS CONTRARY TO THE STATED POLICIES OF THE OBAMA ADMINISTRATION.

The Obama Administration has envisioned an energy policy that moves beyond oil and gas and invests in clean energy jobs and technology; a national policy on the oceans and coasts

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[3] 43 U.S.C. § 1344.

[4] The Atlantic OCS's mean technically recoverable oil and gas reserves, in billions of barrels of oil equivalents, is 10.40 compared to 86.30, 50.11, and 13.79 for the Gulf of Mexico, Alaskan, and Pacific OCSs, respectively. MINERALS MGMT. SERV., MMS 2009-015, SURVEY OF AVAILABLE DATA ON OCS RESOURCES AND IDENTIFICATION OF DATA GAPS, Executive Summary, at 5 (2009) [hereinafter MMS DATA SURVEY].

[5] *Id*.

[6] In 2007, the U.S. consumed 20.7 million barrels of crude oil and petroleum products and 63.1 billion cubic feet of billion cubic feet of natural gas per day. ENERGY INFO. ADMIN., PETROLEUM PRODUCTS: CONSUMPTION, http://www.eia.doe.gov/neic/infosheets/petroleumproductsconsumption.html (last visited 4 Sept. 2009); ENERGY INFO. ADMIN., NATURAL GAS SUMMARY, http://tonto.eia.doe.gov/dnav/ng/ng_sum_lsum_dcu_nus_a.htm (last visited 4 Sept. 2009).

[7] *See* 43 U.S.C. §1344(a)(3).

[8] 42 U.S.C. § 4321 *et seq.* (2008).

that helps our nation to better meet its stewardship responsibilities; and a policy for government decision-making that promises to base decisions on sound science. The Plan's proposal to open the entire Atlantic OCS to oil and gas development does not fit within this vision.

A. Oil and Gas Development on the Mid- and South-Atlantic OCS is inconsistent with the President's Clean Energy Policy.

President Obama has recognized that our nation's excessive energy consumption and reliance on oil come at great cost to our environment and our economy. Accordingly, one of the tenets of his energy policy is to build a clean energy economy that reduces America's dependence on foreign oil, cuts our carbon pollution, and at the same time generates millions of new jobs.[9] To meet these goals, he has stated his energy policy will aim to reduce America's carbon pollution by 80 percent by 2050[10] and to double the nation's capacity to generate renewable energy in the next few years.[11]

As Secretary of the Interior Ken Salazar stated, a "new, comprehensive energy plan that takes us to the new energy frontier and secures our energy independence" is necessary, and the Bush Administration's "'drill-only' approach—onshore or offshore—is not enough."[12] Rather, responsible development of offshore renewable energy sources would meet America's energy demands while spurring sustainable economic development and addressing the growing threat of climate change. According to Secretary Salazar, "[i]ncreased production of renewable energy will create jobs, provide cleaner, more sustainable alternatives to traditional energy resources, and enhance the energy security of the United States."[13]

In contrast to the dearth of potential oil and gas resources in the Atlantic OCS, an abundance of renewable energy resources can be found in the region. For example, the National Renewable Energy Lab has identified more than 1,000 gigawatts of wind potential off the Atlantic Coast.[14] The wind potential off of the coasts of the lower 48 states exceeds the entire U.S. demand for electricity,[15] and the Atlantic OCS has the greatest renewable energy potential of all OCS regions.[16] Moreover, the wind resources of the Mid- and South-Atlantic OCS coincide with some of the heaviest energy demand centers in the nation.[17] And, the shallow waters of the Mid- and South-Atlantic OCS make it a prime area for economical wind energy

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[9] *See* Remarks by the President on Clean Energy (22 Apr. 2009), *available at* http://www.whitehouse.gov/the_press_office/Remarks-by-the-President-in-Newton-IA/.
[10] *See id.*
[11] Remarks by the President at the National Academy of Sciences Annual Meeting (29 April 2009), *available at* http://www.whitehouse.gov/the_press_office/Remarks-by-the-President-at-the-National-Academy-of-Sciences-Annual-Meeting/.
[12] Secretary of the Interior Ken Salazar's Statement on Offshore Energy Strategy (10 Feb. 2009), *available at* http://www.doi.gov/secretary/speeches/021009_speech.html.
[13] Sec'y of the Interior, Order No. 3285, Renewable Energy Development by the Department of the Interior (11 Mar. 2009), *available at* http://www.doi.gov/news/09_News_Releases/SOenergy.pdf.
[14] *See* U.S. Dept. of the Interior, News Release: Secretary Salazar: U.S. Offshore Wind Resources Could Lead America's Clean-Energy Revolution (2 Apr. 2009), *available at* http://www.doi.gov/news/09_News_Releases/040209.html.
[15] *Id.*
[16] MMS DATA SURVEY, *supra* note 4, Executive Summary at 4.
[17] MMS, 2010-2015 DPP, *supra* note 1, at 12.

production. In addition to wind resources, the Atlantic OCS holds untold amounts of wave, tidal, and current energy, all of which will become more economical with the help of this Administration's research funding.[18] Given these facts, the Administration's energy policy calls for investing government time, money, and manpower on studying the potential for innovative development of the renewable energy resources of the Mid- and South-Atlantic OCS rather than wasting the same on pursuing oil and gas development there.

Further, the President has stated that where oil and gas is found in the United States, and if it is exploited, it must be exploited in "an environmentally sustainable way."[19] Because of the minimal estimated recoverable reserves in the Atlantic OCS and substantial possible harm to the environment, there should be no place for oil and gas development in the Mid- and South-Atlantic OCS within the President's energy policy.

B. Oil and Gas Development on the Mid- and South-Atlantic OCS is inconsistent with our Nation's Stewardship Responsibilities to Our Oceans and Coasts.

Forging ahead with the proposed Plan for oil and gas development in the Mid- and South-Atlantic OCS is also inconsistent with what the President has recognized as our Nation's "stewardship responsibility to maintain healthy, resilient, and sustainable oceans, coasts, and Great Lakes resources for the benefit of this and future generations."[20] In an effort to better meet this responsibility, President Obama established an Interagency Ocean Policy Task Force this past June and directed it, among other tasks, to articulate a national policy that "ensures the protection, maintenance, and restoration of the health of ocean [and] coastal . . . ecosystems and resources."[21] Offshore oil and gas drilling has the potential for devastating effects on marine mammals and birds, sea turtles, fishery resources, and the tourism industry that forms the lifeblood of many coastal economies. Sacrificing the long-term health and productivity of these resources in exchange for short-term and insubstantial benefits is poor stewardship.

C. Oil and Gas Development on the Mid- and South-Atlantic OCS is inconsistent with the Scientifically Informed Decision-Making.

The Obama Administration has also emphasized that government decisions should be made with full information and grounded in sound science. The President stated that "[s]cience and the scientific process must inform and guide decisions of [the] Administration."[22] Secretary Salazar has decried "hurried decisions based on bad information."[23] The U.S. Commission on

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[18] *See* Remarks by the President at the National Academy of Sciences Annual Meeting, *supra* note 11.
[19] Remarks by the President on Clean Energy, *supra* note 9.
[20] White House Memorandum for the Heads of Executive Departments and Agencies: National Policy for the Oceans, Our Coasts, and the Great Lakes (12 June 2009), *available at* http://www.whitehouse.gov/the_press_office/Presidential-Proclamation-National-Oceans-Month-and-Memorandum-regarding-national-policy-for-the-oceans.
[21] *Id.*
[22] White House Memorandum for the Heads of Executive Departments and Agencies: Scientific Integrity (9 Mar. 2009), *available at* http://www.whitehouse.gov/the_press_office/Memorandum-for-the-Heads-of-Executive-Departments-and-Agencies-3-9-09.
[23] Secretary of the Interior Ken Salazar's Statement on Offshore Energy Strategy, *supra* note 12.

Ocean Policy has also recognized, "[O]cean managers and policy makers need comprehensive scientific information about the ocean and its environment to make wise decisions."[24]

There is an overwhelming lack of scientific information regarding the Mid- and South-Atlantic OCS; thus, significant information gaps must be filled before a fully informed decision to drill for oil and gas in these regions can be made. As MMS has recognized, there is a paucity of current, comprehensive data on the effects of oil and gas development on marine mammals, fisheries, sea turtles, coastal and seafloor habitats, and human socioeconomics.[25] According to MMS's own report on the information gaps relevant to the Virginia lease sale 220, "a comprehensive and integrative plan," including a "cross-disciplinary effort between biology, fisheries, and physical studies," is needed to assess the impacts of energy uses on the OCS.[26]

Notwithstanding these information gaps, the Mid- and South-Atlantic OCS regions are known to contain uniquely valuable coastal and marine resources and to support vital tourism and fishing industries, as discussed more fully below, which would be placed in significant jeopardy by oil and gas development. This fact, when added to the reality of minimal recoverable reserves, should end the inquiry.

II. OCSLA ANALYSIS COUNSELS AGAINST LOCATING OIL AND GAS DEVELOPMENT IN THE MID- AND SOUTH-ATLANTIC OCS.

Section 18 of OCSLA requires that MMS consider the economic, social, and environmental values of the renewable and nonrenewable resources contained in the OCS and the potential impact of oil and gas exploration on both other resource values of the OCS and the marine, coastal, and human environments.[27] In particular, in determining the timing and location of potential leases, MMS must consider several factors, including: existing information on the geographical, geological, and ecological characteristics of the regions; the needs of regional and national energy markets; the location of such regions with respect to others uses of the sea and seabed, including fisheries, navigation, and other anticipated uses of the resources and space; the laws, goals, and policies of affected states as specifically identified by the Governors of those states; the relative environmental sensitivity and marine productivity of different areas of the OCS; and relevant environmental and predictive information for different areas of the OCS.[28] MMS must, to the "maximum extent practicable," strike a proper balance between the potential for discovery of oil and gas and the potential for environmental damage and adverse impact on the coastal zone.[29]

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[24] U.S. COMM'N ON OCEAN POLICY, AN OCEAN BLUEPRINT FOR THE 21ST CENTURY 323 (2004), *available at* http://oceancommission.gov/documents/full_color_rpt/welcome.html.
[25] *See* MMS DATA SURVEY, *supra* note 4; ROBERT J. DIAZ, ET AL., MMS 2009-011, WORKSHOP ON ENVIRONMENTAL RESEARCH NEEDS IN SUPPORT OF POTENTIAL VIRGINIA OFFSHORE OIL AND GAS ACTIVITIES (2009) [hereinafter MMS WORKSHOP REPORT].
[26] MMS WORKSHOP REPORT, *supra* note 25, at 1.
[27] 43 U.S.C. § 1344(a)(1).
[28] 43 U.S.C. § 1344(a)(2)(A)-(H).
[29] 43 U.S.C. § 1344(a)(3); *see also* Ctr. for Biological Diversity v. U.S. Dept. of the Interior, 563 F.3d 466, 474 (D.C. Cir. 2009).

A. There Is Insufficient Existing Information About the Mid- and South-Atlantic OCS.

Section 18 of OCSLA requires that MMS base its selection of location and timing of potential leases on, among other factors, a consideration of "existing information concerning the geographical, geological, and ecological characteristics" of regions proposed for oil and gas development.[30] As previously mentioned, there are significant gaps in existing information concerning the Mid- and South-Atlantic OCS. The OCS data survey commissioned by Secretary Salazar as part of the Administration's offshore energy strategy revealed a wide range of biological data gaps relevant to oil and gas development in the Mid- and South-Atlantic OCS.[31] For example, MMS noted a lack of important seafloor information such as the habitat characteristics of biologically rich submarine canyons,[32] the types and behavior of organisms inhabiting shallow and deep water coral reef formations stretching from New Jersey to the Florida Keys,[33] and modern maps of the continental margin and deepwater canyons.[34] As for fisheries data, MMS stated that "life history and habitat information is limited, especially for highly migratory species."[35] The agency also remarked upon the need to update information on coastal habitats that have been altered as a result of severe weather and changes in sea level.[36] Furthermore, "the existing information on seasonal distribution and abundance of marine birds is . . . sparse, generally outdated, and of limited value."[37] Finally, more information is also required to make informed decisions about the value of renewable energy resources in the Mid- and South-Atlantic OCS and the potential placement of development programs to make use of these resources.

Of particular concern is the lack of information on the effects of oil and gas drilling on rare, threatened, and endangered marine mammals and sea turtles. MMS noted a need to increase its understanding of many of the animals' "life history traits and critical habitat,"[38] specifically mentioning essential missing information concerning the presence and movement of baleen whales in offshore areas, the locations of resident baleen whales, and the winter movements of the perilously endangered North Atlantic right whale.[39] Better information on the presence of these animals is critical due to the uncertainty surrounding the potentially devastating effects of

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[30] 43 U.S.C. § 1344(a)(2)(A).

[31] At the same time he extended the comment period on the Plan, Secretary Salazar directed MMS and USGS to compile of report of all existing information on offshore resources. 74 Fed. Reg. 9426 (4 Mar. 2009); Secretary Salazar's Statement on Offshore Energy Strategy, *supra* note 12.

[32] MMS DATA SURVEY, *supra* note 4, at III-13, III-41; *see also* MMS WORKSHOP REPORT, *supra* note 25, at 20 ("Studies are needed to address knowledge gaps in the biological and benthic processes especially to identify the location and extent of key high priority or unique habitats, such as those associated with high productivity (swales) or high biodiversity (hard bottom).").

[33] MMS WORKSHOP REPORT, *supra* note 25, at 20; *see also id.* at 12.

[34] MMS DATA SURVEY, *supra* note 4, at III-13, III-40, III-41.

[35] *Id*. at III-19.

[36] *Id*. at III-37.

[37] *Id*. at III-38.

[38] *Id*.

[39] *Id*. at III-41; *see also* MMS WORKSHOP REPORT, *supra* note 25, at 22 ("Methods to assess residency in sperm whales, humpbacks, beaked whales, right whales, selected dolphin species, and sea turtles using photo-identification, tagging specifically for turtles, and genetics need to be implemented.").

anthropogenic noise associated with oil and gas exploration and drilling.[40] Finally, the lack of more recent information about the effects of climate change adds additional uncertainty to these information gaps.[41]

While the pyramidic structure of the 5-year program would arguably allow MMS to fill some of these data gaps in latter stages in the leasing process, the data gaps concerning the Mid- and South-Atlantic OCS are significant, and sufficient information could not possibly be collected and synthesized by the next stages in the leasing process. This dearth of relevant scientific information, particularly in light of this Administration's commitment to scientifically sound decision-making, thus weighs heavily against including oil and gas development in these regions in this 5-year plan.

B. Regional and National Energy Needs Do Not Justify Oil and Gas Development in the Mid- and South-Atlantic OCS.

Section 18 of OCSLA requires that MMS locate oil and gas development based on a consideration of the relative needs of regional and national energy markets.[42] Oil and gas development of the Mid- and South-Atlantic OCS will likely have little impact on regional or national energy markets or on America's dependence on foreign oil. As stated above, the Atlantic OCS has significantly less recoverable oil and gas reserves than any other OCS region,[43] and its estimated 3.82 billion barrels of oil and 36.99 trillion cubic feet of natural gas[44] would last only six and eighteen months, respectively, at current rates of consumption.[45] Further, if oil and gas production in the Atlantic started in 2011, as proposed, it would have no impact on domestic oil and gas prices until at least 2030, and even then any such impact would be "insignificant," by the federal government's own estimates.[46] Because oil and gas is traded on a global market, the relatively small amount from these regions will have virtually no effect on America's energy independence. Meanwhile, adverse impacts to other resources would accumulate.

Alternatives are available that would meet U.S. energy needs without requiring additional sources of oil and gas. Developing offshore renewable energy resources in the Mid- and South-Atlantic OCS could help provide for U.S. energy needs. As discussed above, the Mid- and South-Atlantic OCS contains vast potential renewable energy resources in the form of wind,

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[40] MMS DATA SURVEY, *supra* note 4, at III-23, III-25, III-38. The uncertainty is not *whether* such noise adversely affects these animals—it certainly does—but the extent to which the impacts would change behavior and affect the animals on a population scale. *See* MMS WORKSHOP REPORT, *supra* note 25, at 7 ("Although there is no uncertainty that these noises are cumulatively affecting the ocean environment for cetaceans, there is some uncertainty about both the behavioral responses of cetaceans to many of these sounds and the population consequences of those sounds.").

[41] MMS DATA SURVEY, *supra* note 4, Executive Summary at 7; MMS WORKSHOP REPORT, *supra* note 25, at 9 (discussing uncertain climate change effects on fish species distributions).

[42] 43 U.S.C. § 1344(a)(2)(C).

[43] *See supra* note 4.

[44] MMS DATA SURVEY, *supra* note 4, Executive Summary at 5.

[45] *See supra* note 6 and accompanying text.

[46] Energy Info. Admin., *Impacts of Increased Access to Oil and Natural Gas Resources in the Lower 48 Federal Outer Continental Shelf*, *in* ANNUAL ENERGY OUTLOOK 2007 (2007), *available at* http://www.eia.doe.gov/oiaf/aeo/otheranalysis/ongr.html.

wave, tidal, and ocean current energy. The Secretary of the Interior is authorized under the Energy Policy Act of 2005 to grant leases in the OCS for renewable energy development.[47] Pursuant to that authorization, the MMS has identified ten priority lease sites in the Atlantic OCS for wind energy development (six offshore New Jersey, one offshore Delaware, and three offshore Georgia), and has begun taking and reviewing applications for several of these sites.[48] Additionally, MMS has identified two sites off of California for testing of wave energy projects and four sites off of Florida for testing of ocean current energy projects.[49] State governments are exploring this potential as well, such as Virginia through its Virginia Coastal Energy Research Consortium, which is investigating offshore wind power and algal biodiesel—both of which are alternatives to increased oil and gas production.[50] The private sector also understands the potential of offshore renewable energy resources and is organizing to harness it. For example, the Outer Banks Ocean Energy Corporation has been created to generate electricity from a "unique confluence of wind, wave, and current resources" found in federal waters about 25 miles off the North Carolina coast.[51]

Further, the projections for oil and gas demand, which the Plan uses to justify opening the Mid- and South-Atlantic OCS for oil and gas development, are obsolete given the Administration's new emphasis on clean energy. The Plan's analysis of energy needs insists that "America's reliance on oil and natural gas is not likely to change dramatically in the near future,"[52] and projects that consumption of carbon-emitting oil and natural gas will continue to *increase* as far in the future as 2030.[53] These numbers are obsolete in light of the President's commitment to cutting carbon emissions by 80 percent by 2050 and pledge to reduce demand by increasing efficiency through measures such as strengthening fuel standards, investing in weatherization for low income citizens, offering tax breaks to homeowners for installation of efficient heating and cooling systems, making federal buildings more energy efficient, and improving efficiency standards for household appliances.[54] The Administration has also committed to a rapid escalation in the development of renewable energy sources[55] and the President has stated that he seeks to pass a market-based cap-and-trade system for carbon emissions which will further reduce the demand for oil and gas.[56] A consideration of the relative market need in light of these alternatives thus weighs against pursuing oil and gas development in the Mid- and South-Atlantic OCS.

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[47] *See* 43 U.S.C. § 1337(p)(1)(C).
[48] MMS DATA SURVEY, *supra* note 4, at I-7.
[49] *Id.*
[50] *See* Virginia Coastal Energy Research Consortium, http://www.vcerc.org/ (last visited 15 Sept. 2009).
[51] Outer Banks Ocean Energy Corporation Formed, PR-USA.Net, http://pr-usa.net/index.php?option=com_content&task=view&id=262091&Itemid=28 (last visited 14 Sept. 2009).
[52] MMS, 2010-2015 DPP, *supra* note 1, at 81.
[53] *Id*. at 72.
[54] *See* White House, Energy and Environment, Progress, http://www.whitehouse.gov/issues/energy_and_environment/ (last visited 4 Sept. 2009).
[55] *See, e.g.*, Secretary of the Interior, Order No. 3285, Renewable Energy Development by the Dep't of the Interior (11 Mar. 2009), *available at* http://www.doi.gov/news/09_News_Releases/SOenergy.pdf; Statement of Secretary of the Interior Ken Salazar on Energy Development on the Public Lands and Outer Continental Shelf (17 Mar. 2009), *available at* http://www.doi.gov/secretary/speeches/031709_statement.html; U.S. Dept. of the Interior, News Release: Secretary Salazar: U.S. Offshore Wind Resources Could Lead America's Clean-Energy Revolution (2 Apr. 2009), *available at* http://www.doi.gov/news/09_News_Releases/040209.html.
[56] Remarks by the President on Clean Energy, *supra* note 9.

C. Oil and Gas Development Will Significantly Impact Other Uses of the Mid- and South-Atlantic OCS and Surrounding Coastline.

Section 18 requires consideration of the location of potential lease regions "with respect to other uses of the sea and seabed, including fisheries, navigation, existing or proposed sealanes, potential sites of deepwater ports, and other anticipated uses of the resources and spaces of the [OCS]."[57] Oil and gas development of the Mid- and South-Atlantic OCS could greatly impact the use of this area for fishing, tourism, and training by America's armed forces.

Oil and gas development would place the fish and fisheries of the entire Atlantic at significant risk, thus jeopardizing a significant portion of the Mid- and South-Atlantic states' economies. In 2008, there were over a quarter of a billion dollars worth of commercial fish landings in Virginia, North Carolina, South Carolina, and Georgia.[58] The National Marine Fisheries Service reports the annual commercial fish landings for 2008 as: Virginia: $145,552,168; North Carolina: $86,814,770; South Carolina: $17,474,726; and Georgia: $12,552,967.[59] The total for the entire Atlantic region was over $1.4 billion.[60]

In addition to commercial fishing, the Mid- and South-Atlantic OCS is also a prime destination for saltwater sports fishing, contributing to states' economies, creating jobs, and adding revenue to state governments. According to the American Sportfishing Association, saltwater sports fishing in the Mid- and South-Atlantic is big business.[61] In 2006, saltwater sports fishing accounted for: 5,541 jobs in Virginia and contributed $945,023,716 to its economy; 9,735 jobs in North Carolina and $1,739,156,679 to its economy; 11,896 jobs in South Carolina and $2,065,743,840 to its economy; and 2,010 jobs in Georgia and $428,006,962 to its economy.[62] In addition, in 2006 saltwater sports fishing in the Mid- and South-Atlantic contributed $566,642,881 in Federal tax revenue.[63]

Further, the Mid- and South-Atlantic OCS contain many areas that have been designated Essential Fish Habitat ("EFH") and/or Habitat Areas of Particular Concern ("HAPC") under the Magnuson-Stevens Fishery Conservation and Management Act.[64] The Mid-Atlantic Fishery Management Council[65] has identified several EFHs in the Atlantic for species such as: summer flounder, scup, black sea bass, bluefish, Atlantic surfclam, ocean quahog, ilex and loligo squid, Atlantic mackerel, Atlantic butterfish, golden tilefish, spiny dogfish, and tilefish. The Mid-Atlantic Council has also identified HAPC for summer flounder and tilefish. The South-Atlantic

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[57] 43 U.S.C. § 1344(a)(2)(D).
[58] Nat'l Marine Fisheries Serv., Nat'l Oceanic and Atmospheric Admin, Annual Commercial Landing Statistics, http://www.st.nmfs.noaa.gov/st1/commercial/landings/annual_landings.html (last visited 4 Sept. 2009).
[59] *Id.*
[60] *Id.*
[61] AM. SPORTFISHING ASS'N, SPORTFISHING IN AMERICA: AN ECONOMIC ENGINE AND CONSERVATION POWERHOUSE 10 (2008), *available at* http://www.asafishing.org/images/statistics/resources/Sportfishing%20in%20America%20Rev.%207%2008.pdf.
[62] *Id.*
[63] *Id.*
[64] 16 U.S.C. § 1801 *et seq.* (2006).
[65] The Mid Atlantic Fishery Management Council represents New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, and North Carolina.

Fishery Management Council[66] has identified EFHs for: shrimp, red drum, snapper grouper, spiny lobster, rock shrimp, coastal migratory pelagic, golden crab, spiny lobster, dolphin wahoo, royal red shrimp, cobia, and dolphin,[67] and HAPC for shrimp, *Sargassum*, red drum, snapper grouper complex, spiny lobster, coastal migratory pelagic, coral, and dolphin wahoo.[68] Further, the New England Fishery Management Council[69] has identified EFH that extends into the mid-Atlantic for species such as: monkfish, yellowtail flounder, windowpane flounder, winter flounder, red hake, and silver hake.[70]

Additionally, the South Atlantic Fishery Management Council has established eight deepwater Marine Protected Areas (MPAs) in the South Atlantic region, off the coast of the Carolinas and Georgia, to protect a portion of the long-lived, "deepwater" snapper grouper species such as snowy grouper, speckled hind, and blueline tilefish.[71] Among the MPAs is the Edisto MPA, designed to protect the fish species that depend on the Charleston Bump.[72] Offshore drilling would interfere with both the commercial and recreational saltwater fishing industries by causing the loss of fishing grounds; negatively affecting navigation routes; displacing fishing infrastructure; and decreasing catches due to seismic testing, oil spills, and contamination from toxic drilling muds.[73]

In particular, oil and gas development could also pose a considerable risk to the blue crab fishery of the Chesapeake Bay. The blue crab is both ecologically and commercially important to the Chesapeake Bay, but the fishery is currently in crisis as the population has dropped by 70 percent since 1990.[74] According to John McConaughan, professor of biological oceanography at Old Dominion University in Norfolk, Virginia, a consensus of scientists studying the species has concluded that larval development takes place on the continental shelf. Through behavioral responses to environmental cues, the post-larval megalopa stage uses the nighttime flood tides to re-enter and move up the Chesapeake Bay. Sampling over multiple years indicates that the late-stage larvae and post-larvae are found in the surface waters *at least* 50-70 miles off the coast. Because blue crab larvae are extremely sensitive to toxic materials, including compounds found

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[66] The South Atlantic Fishery Management Council serves North Carolina, South Carolina, Georgia, and East Florida.

[67] S. Atlantic Fishery Mgmt. Council, South Atlantic Fishery Management Council's EFH Designations, http://www.safmc.net/Portals/0/EFH/EFH%20Table.pdf.

[68] S. Atlantic Fishery Mgmt. Council, Essential Fish Habitat-Habitat Areas of Particular Concern and Coral Habitat Areas of Particular Concern, http://www.safmc.net/Portals/0/EFH/EFH-HAPC%20Table.pdf.

[69] The New England Fishery Management Council serves Maine, New Hampshire, Massachusetts, Rhode Island, and Connecticut.

[70] Nat'l Marine Fisheries Serv., EFH Information for the Mid-Atlantic, http://www.nmfs.noaa.gov/habitat/habitatprotection/profile/midatlanticcouncil.htm (last visited 4 Sept. 2009); *see also* Mid-Atlantic Fishery Management Council, http://www.mafmc.org/ (last visited 4 Sept. 2009).

[71] *See* S. Atlantic Fishery Mgmt. Council, Marine Protected Areas, http://www.safmc.net/MarineProtectedAreas/tabid/609/Default.aspx (last visited 14 Sept. 2009). A Marine Protected Area (MPA), as defined in Presidential Executive Order 13158 in 2000, is any area of the marine environment that has been reserved by federal, state, territorial, tribal, or local laws or regulations to provide lasting protection for part or all of the natural and cultural resources therein. *Id.*

[72] *Id.*

[73] Letter from W.F. "Zeke" Grader, Jr., Executive Dir., Pacific Coast Fed'n of Fishermen's Assocs., to Nancy Pelosi, Speaker, U.S. House of Representatives & Harry Reid, Majority Leader, U.S. Senate (8 Sept. 2008) (on file).

[74] *Clawing for Life: Facing Disaster, Two Governors Act to Save the Chesapeake Bay's Crabs*, WASH. POST, 17 Apr. 2008, at A22.

in oil and drilling muds, oil and gas development on the OCS surrounding the Chesapeake Bay could have serious impacts on the species.

Oil and gas development will also interfere with the use of the Mid- and South-Atlantic OCS and coastlines for tourism. Visitors flock to coastal areas along the Mid- and South-Atlantic Ocean and venture into the Mid- and South-Atlantic OCS for recreational fishing, whale-watching, and ocean cruises. Offshore activities and structures, onshore support infrastructure, air pollution, oil spills, and debris and sediments washed onto beaches could have significant effects on these industries by limiting fishing and tourist trips into the Mid- and South-Atlantic OCS and sullying once clean and healthy beaches. These impacts are discussed more fully below in Section III.B.I.

Finally, oil and gas development will clash with the use of the Mid- and South-Atlantic OCS for training purposes by the American armed forces. The U.S. Navy has clearly stated that oil and gas exploration is incompatible with its operations in the Virginia Capes Operations Area ("VACAPES"), which stretches from Delaware to North Carolina.[75] Oil and gas development in the Mid- and South-Atlantic OCS will interfere with the training and testing of equipment done by all branches of the armed forces in the VACAPES area.[76] The activity and structures associated with oil and gas development will restrict where military aircraft can operate and force them further out to sea, which will increase flight times to training areas, increase the use of aircraft fuel at additional expense to the armed forces, and increase the danger of training and test missions because of reduced proximity to rescue.[77] Oil and gas development in the Mid- and South-Atlantic OCS will also potentially interfere with NASA's operations at the Wallops Flight Facility in Virginia and with operations at the dozens of military bases along the coast, including Norfolk Naval base in Virginia and King's Bay Naval Submarine Base in Georgia.

A consideration of these other uses of the Mid- and South-Atlantic OCS and the adverse impact oil and gas development will have on commercial and recreational fishing, tourism, and national security weighs against locating oil and gas development in these regions.

D. A Consideration of the Environmental Sensitivity of the Mid- and South-Atlantic OCS Weighs Against Oil and Gas Development.

The environmental sensitivity of different areas of the OCS must be considered under Section 18(a)(2)(G).[78] Under the analysis contained in the Plan, based exclusively on NOAA's Shoreline Environmental Sensitivity Index ("ESI"), the Mid- and South-Atlantic OCS regions are at the top of the list of the *most* environmentally sensitive OCS regions.[79] Although the D.C. Circuit has held that this analysis based on the NOAA study is improperly limited to a consideration of "*only* onshore areas," rather than OCS areas,[80] a more complete environmental

[75] Letter from Donald R. Schregardus, Dept. of the Navy, to R.M. Burton, Dir., Minerals Mgmt. Serv. (10 Apr. 2006).
[76] *Id.*
[77] *Id.*
[78] 43 U.S.C. § 1344(a)(2)(G).
[79] *See* MMS, 2010-2015 DPP, *supra* note 1, at 99 (ranking the South-Atlantic first and the Mid-Atlantic third).
[80] *See* Ctr. for Biological Diversity v. U.S. Dept. of the Interior, 565 F.3d 466, 487–88 (D.C. Cir. 2009); MMS, 2010-2015 DPP, *supra* note 1, at 97. Moreover, the NOAA ESI is insufficient even to fully analyze the sensitivity of

sensitivity analysis should likewise rank Mid- and South Atlantic OCS at the top. As discussed more fully below, a number of features of the Mid- and South-Atlantic OCS render these regions particularly sensitive; for example: offshore canyons; deepwater coral ecosystems, including the Charleston Bump (a deepwater bank off the coast of Charleston, SC); the presence of the Gulf Stream; the frequent hurricanes and tropical storms in the Atlantic; and its use as a migratory superhighway by birds, whales, and other species. These unique features distinguish the Mid- and South-Atlantic OCS from other OCS regions. Even under a more thorough sensitivity analysis, these regions should be considered one of the most environmentally sensitive. Thus, this Section 18 factor also counsels against permitting oil and gas development in the Mid- and South-Atlantic OCS.

E. A Consideration of Section 18 Factors Weighs Against Locating Oil and Gas Development in the Mid- and South-Atlantic OCS.

After consideration of the Section 18(a)(2) factors, MMS is required "to the maximum extent practicable" obtain a "proper balance between the potential for environmental damage, the potential for the discovery of oil and gas, and the potential adverse impact on the coastal zone."[81] Thus, MMS must balance, on one hand, the negligible amounts of oil and gas resources estimated to be recoverable from the Mid- and South-Atlantic OCS with, on the other, the adverse impacts oil and gas development will have on the environment and economy of the Atlantic seaboard. The lack of information about the current geographical, geological, and ecological characteristics of the Mid- and South-Atlantic OCS, the disruption of fishing, tourism, and armed forces training activities in the Mid- and South-Atlantic OCS region, and its ranking as the most environmentally sensitive OCS region tip the scale against pursuing oil and gas development in the Mid- and South-Atlantic OCS region.

III. NEPA Requires that an EIS Fully Examine the Substantial Adverse Environmental Impacts of the Plan and Potential Alternatives.

Should MMS decide to include the Mid- and South-Atlantic OCS in the 5-year plan, NEPA requires that MMS prepare an EIS that provides a full and fair discussion of the alternatives as well as adverse environmental impacts of the Plan.[82] The EIS must address not only the direct and indirect impacts of the proposed action on the environment,[83] but also the cumulative impacts.[84] Additionally, the EIS must "rigorously explore and objectively evaluate all reasonable alternatives."[85] NEPA requires agencies to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources."[86] The alternatives analysis "is the heart of the environmental impact statement."[87] Finally, the EIS must identify

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the shoreline itself, as it does not account for the presence of endangered species or "biological habitats that occur seasonally on or near the shoreline." *Id.* at 102.

[81] 43 U.S.C. § 1344(a)(3).

[82] 42 U.S.C. § 4332(2)(c).

[83] 40 C.F.R. §§ 1502.16, 1508.8(a),(b).

[84] *Id.* § 1502.1.

[85] *Id.* § 1502.14(a).

[86] 42 U.S.C. § 4332(2)(E).

[87] 40 C.F.R. § 1502.14

mitigation efforts, not included in the proposed action or alternatives, which will minimize adverse impacts or enhance the quality of the human environment.[88]

Further, NEPA imposes an affirmative obligation on MMS to seek out information concerning the environmental consequences of its proposed action,[89] and requires that MMS use high quality scientific information and accurate scientific analysis when preparing an EIS.[90] In particular, when essential information is incomplete, as it is here, NEPA requires federal agencies to conduct independent research or otherwise gather the missing information and include it in the EIS.[91] NEPA relieves agencies of this duty only when the agency can demonstrate that either (1) the means of obtaining the missing information are not known, or (2) the overall costs of obtaining the missing information are exorbitant in light of the size of the project or the possible harm to the environment.[92] Otherwise, an agency's failure to gather the relevant information results in an inadequate EIS analysis.[93]

As discussed above, there are currently significant gaps in the knowledge that MMS has available regarding the Mid- and South-Atlantic OCS. MMS currently lacks critical baseline information about the Mid- and South-Atlantic OCS, including: the full impact of oil and gas exploration, extraction, and transport on marine and coastal wildlife and fisheries; the impact of climate change and amplified storms on oil and gas operations; and the effects of drilling and associated onshore infrastructure on coastal economies. MMS also lacks data on the economic impacts. Reporting on the Virginia lease sale workshop, MMS stated that "there is little in the way of existing [socioeconomic] data" for the region, noting that most socioeconomic studies have been concentrated in the Gulf of Mexico and Alaska OCS regions.[94] The need for socioeconomic data is essential given the combination of the importance of tourism and fishing to the Mid- and South-Atlantic states[95] and the lack of existing onshore infrastructure capable of supporting offshore oil and gas operations.[96] The costs of obtaining this data are marginal, rather than exorbitant, in light of the potential environmental consequences of oil and gas development on ocean and coastal resources. These data gaps must be addressed to fully comply with NEPA requirements.

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[88] *Id.* §§ 1502.1, 1502.14(f), 1502.16(h).
[89] *See* Nat'l Audubon Soc'y, v. U.S. Dept. of the Navy, 422 F.3d 174 (4th Cir. 2005).
[90] 40 C.F.R. §1500.1(b).
[91] *See id.* §1502.22(a); Oregon Envtl. Council v. Kunzman, 817 F.2d 484, 495 (9th Cir. 1987).
[92] *See* 40 C.F.R. §1502.22(a). Although neither of these circumstances is applicable here, NEPA does require the agency in such cases to include in the EIS: 1) a statement that the information is incomplete or unavailable; 2) a statement of the relevance of the incomplete or unavailable information to the agency's evaluation of adverse impacts; 3) a summary of existing credible scientific evidence which is relevant to the agency's evaluation of adverse impacts; and 4) the agency's evaluation of such impacts "based upon theoretical approaches or research methods generally accepted in the scientific community." *Id.* § 1502.22.
[93] Fund for Animals v. Norton, 294 F. Supp. 2d 92, 111 (D.D.C. 2003).
[94] MMS WORKSHOP REPORT, *supra* note 25, at 15, 24.
[95] *See, e.g.*, MARK DORFMAN & NANCY STONER, NATURAL RES. DEF. COUNCIL, TESTING THE WATERS: A GUIDE TO WATER QUALITY AT VACATION BEACHES 29, Table 7 (7th ed. 2007), *available at* http://www.nrdc.org/water/oceans/ttw/ttw2007.pdf (valuing tourism at over $214 billion a year for the Atlantic coastal states of CT, DE, FL, GA, MD, MA, NJ, NC, SC, & VA); MMS DATA SURVEY, *supra* note 4, at III-21 (noting that in 2007, commercial fishery landings were valued at over $1.4 billion, while residents and visitors took over 58 million marine recreational fishing trips).
[96] *See* MMS DATA SURVEY, *supra* note 4, at III-39.

A. Oil and Gas Development Will Cause Significant Direct Impacts on the Mid- and South-Atlantic Coast and Marine Environment.

1. Oil Spills and Water and Air Pollution from Day-to-Day Operations Will Significantly Harm the Marine and Coastal Environment.

Drilling on the Mid- and South-Atlantic OCS could lead to oil spills—both chronic and resulting from particular disasters—that would cause irreversible damage to marine and coastal environments. As MMS has recognized, the effects of a large oil spill on water quality, such as that of the Chesapeake Bay, could be immediate and severe.[97] Even with improvements in technology, spills from tanker ships and pipelines continue to occur, often going undiscovered or unremedied for long periods of time.

The recent oil spill in the Timor Sea off the northern coast of Australia is a telling example. It demonstrates that even new state-of-the-art drilling apparatus, such as the West Atlas rig built in 2007 involved in this spill, can catastrophically malfunction.[98] Due to delays in bringing in repair equipment, the West Atlas rig will continue to spew oil into the ocean for several weeks, illustrating how frequently companies, and even governments, are ill-equipped to rapidly respond to oil spills.[99] This spill and the delay in remedying it will have untold impacts on the sea turtles that use that region and on nearby coral deposits.[100]

The possibility of catastrophic spills is enhanced by the hurricanes and tropical storms that frequent the Atlantic coast. Oil spills and clean-up efforts are not just deadly to marine life, but could disrupt ship traffic coming in and out of the Atlantic coast's busy ports, such as Hampton Roads, and military bases, such as Norfolk Naval Base. The impacts of oil spills are further aggravated because current cleanup methods can remove only a small fraction of oil spilled in marine waters.[101]

In addition to the pollution from periodic oil spills, the day-to-day operations of offshore drilling will result in significant water pollution. Once offshore drilling rigs become operational, they routinely discharge produced water, drilling muds, and drill cuttings into the marine

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[97] MINERALS MGMT. SERV., MMS 2007-003, OUTER CONTINENTAL SHELF OIL & GAS LEASING PROGRAM: 2007-2012 FINAL ENVIRONMENTAL IMPACT STATEMENT at V-270 (2007), *available at* http://www.mms.gov/5-year/2007-2012FEIS.htm [hereinafter 2007-2012 FEIS].

[98] Seadrill: Company Facts, http://www.seadrill.com/modules/module_123/proxy.asp?D=2&C=36&I=115&mid=18&sid=61 (last visited 9 Sept. 2009) (listing the West Atlas, the rig causing the Timor Sea spill, as being completed and delivered in 2007); *see also* Editorial, *Oil Spills Still a Threat*, PENSACOLA NEWS J., 4 Sept. 2009, *available at* http://www.pnj.com/article/20090904/OPINION/909040309/Editorial--Oil-spills-still-a-threat (arguing that the Timor Sea spill and a July 2009 oil spill caused by a leaking pipeline in Louisiana demonstrate that despite more advanced technology, the danger of oil spills remains).

[99] *See* Aleisha Preedy, *Oil, Gas Leak to Continue for Seven Weeks*, THE AUSTRALIAN, 23 Aug. 2009 *available at* http://www.theaustralian.news.com.au/story/0,25197,25970389-12377,00.html.

[100] *See* Gillian Cannon, *Cleanup Begins on Timor Sea Oil Spill*, LIVENEWS, 23 Aug. 2009, *available at* http://www.livenews.com.au/news/cleanup-begins-on-timor-sea-oil-spill/2009/8/23/217037.

[101] *See* BD. ON ENVTL. STUDIES & TOXICOLOGY, CUMULATIVE ENVIRONMENTAL EFFECTS OF OIL AND GAS ACTIVITIES ON ALASKA'S NORTH SLOPE 7 (2003), *available at* http://books.nap.edu/openbook.php?record_id=10639&page=7.

environment.[102] Both drilling muds and produced water contain toxic pollutants, such as mercury, lead, chromium, barium, arsenic, cadmium, and polycyclic aromatic hydrocarbons.[103] At high concentrations, these pollutants kill marine life. At lower concentrations, they cause birth defects, impaired growth, and other negative effects. The dumping of polluted muds also results in turbidity and smothers sea life on the ocean floor.[104] Even if oil and gas companies are ordered to remove drilling muds, it is not clear what percentage of this discharge they will be able to recover.

Opening the Mid- and South-Atlantic OCS to drilling will also significantly degrade air quality in these regions. An average oil and gas exploration well spews fifty tons of nitrogen oxides, thirteen tons of carbon monoxide, six tons of sulfur dioxide, and five tons of volatile organic hydrocarbons, having the same cumulative air pollution impact as 7,000 cars driving 50 miles each day the well is in operation.[105] A 2004 MMS inventory of air pollution in the Gulf of Mexico found that OCS oil and gas activities account for the overwhelming majority of criteria air pollutants in that region: 89% of carbon monoxide, 77% of nitrogen oxides emissions, 72% of volatile organic compounds emissions, 69% of particulate matter emissions, and 66% of sulfur dioxide.[106] The pollutants released by offshore rigs are the basic ingredients of smog, haze, and acid rain.

a. Sensitive Shorelines and Marine Habitats

The Mid- and South-Atlantic coastlines and marine environments are characterized by sensitive shorelines and unique marine habitats that would be significantly harmed by oil spills, water pollution, and air pollution associated with oil and gas development. For example, several federally-protected National Seashores exist along the Mid- and South-Atlantic coast, including the Assateague Island National Seashore and National Park in Maryland and Virginia, the Cape Hatteras and Cape Lookout National Seashores in North Carolina, and the Cumberland Island National Seashore in Georgia.

These states are also defined by several National Wildlife Refuges (NWR) along their coast such as: Virginia's Chincoteague NWR, Wallops Island NWR, Eastern Shore NWR, Fisherman Island NWR, and Back Bay NWR; North Carolina's Mackay Island NWR, Pea Island NWR, and Cedar Island NWR; South Carolina's Cape Romain NWR, Pinckney Island NWR,

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[102] 2007-2012 FEIS, *supra* note 97, at IV-279. Though the discharge of production wastes into open water is prohibited in coastal waters, it is permitted in marine waters under the NPDES program. *Id.*

[103] *Id.* at IV-279–IV-280.

[104] JONATHAN WILLS, SAKHALIN ENVTL. WATCH, MUDDIED WATERS: A SURVEY OF THE OFFSHORE OILFIELD DRILLING WASTES AND DISPOSAL TECHNIQUES TO REDUCE THE ECOLOGICAL IMPACT OF SEA DUMPING 54–72 (2000), *available at* http://bankwatch.org/documents/muddiedwaters_02.pdf; *see also* 2007-2012 FEIS, *supra* note 97, at IV-280.

[105] NATURAL RES. DEF. COUNCIL, OCEAN FACTS: PROTECTING OUR OCEAN AND COSTAL ECONOMIES: AVOID UNNECESSARY RISKS FROM OFFSHORE DRILLING (2009), *available at* http://www2.nrdc.org/oceans/offshore/files/offshore.pdf; *see also* 2007-2012 FEIS, *supra* note 97, at IV-266–IV-267.

[106] MINERALS MGMT. SERV., GULFWIDE EMISSION INVENTORY STUDY FOR THE REGIONAL HAZE AND OZONE MODELING EFFORT (2004), *available at* http://www.gomr.mms.gov/PI/PDFImages/ESPIS/2/3011.pdf. This survey was done using data from platform and non-platform sources of pollutants associated with oil and gas development located in the central and western Gulf of Mexico. *Id.*

and Tybee NWR; the Savannah NWR which spans South Carolina and Georgia; and Georgia's Wassaw NWR, Harris Neck NWR, Blackbeard Island NWR, and Wolf Island NWR. These areas provide migratory and breeding habitat for a wide range of waterfowl, shore birds (including endangered species such as the piping plover and black skimmer), and migratory warblers. A number of sensitive areas along these coats also receive state protection. For example, the North Carolina Coastal Reserve and National Estuarine Research Reserve System has protected additional sites on the North Carolina coast.[107]

Because oil and gas development also requires the support of heavy onshore industrial infrastructure, the coastal zone could become cluttered with miles of unattractive pipelines, refineries, and air-polluting smokestacks. Building the necessary infrastructure will directly impact large tracts of coastal land in the Mid- and South-Atlantic states, augment the waste and pollution from offshore operations, and cause significant losses of coastal wetlands.

The Mid- and South-Atlantic coast is exceptionally vulnerable to such impacts because of its extensive coastal wetlands, barrier islands, and tidal marshes[108] and the current lack of any such infrastructure.[109] The Carolinas are known for their unique and fragile system of barrier islands. South Carolina's coastline alone also boasts over 165 linear miles of beaches and more than 40 barrier and Sea Islands.[110] South Carolina is also known for its valuable coastal salt marshes, as is Georgia. Georgia contains a third of the marshes on the Atlantic Seaboard and, according to the South Carolina Sea Grant Consortium, South Carolina contains 504,450 acres of salt marsh (representing 20 percent of the East Coast total).[111] The salt marsh is one of the most productive ecosystems in the world. The salt marshes in Georgia and South Carolina provide a home to a wide range of fish, shellfish, and bivalves, including many important commercial and recreational species during their juvenile and adult life stages.[112] The EIS must fully discuss the negative impacts that oil and gas development on the Mid- and South-Atlantic OCS could have on these sensitive coastal features.

In addition, the EIS must fully discuss the impacts that oil and gas development in the Mid- and South-Atlantic OCS could have on sensitive marine habitats, including deepwater coral formations off the Carolina and Georgia coasts, the most prominent of which is federally-protected as the Grays Reef National Marine Sanctuary. Grays Reef provides a critical home to an incredibly diverse collection of tropical and temperate marine life.[113]

Unique features on South Carolina's OCS, including natural hard bottoms as well as 37 artificial reefs and five major shipwrecks, similarly support and sustain many resident and

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[107] The North Carolina Coastal Reserve & National Estuarine Research Reserve, http://www.nccoastalreserve.net/ (last visited 14 Sept. 2009).
[108] MMS DATA SURVEY, *supra* note 4, at III-16.
[109] *Id*. at III-39.
[110] *See* Sea Grant, Marine Fisheries: Fisheries/Living Marine Resource Program, http://www.scseagrant.org/Content/?cid=43, (last visited 14 Sept. 2009).
[111] *See id.*
[112] *See id.*
[113] *See* Gray's Reef National Marine Sanctuary, http://graysreef.noaa.gov/ (last visited 14 Sept. 2009).

migratory fisheries species.[114] Of particular concern is the Charleston Bump, a unique habitat located southeast of Charleston on the Blake Plateau, which deflects the Gulf Stream offshore in the South Atlantic Bight resulting in ocean upwelling that brings nutrients to the surface waters. This increases the primary productivity of South Carolina's coastal ocean waters, supporting and concentrating a food chain from zooplankton to small fish to commercially and recreationally important reef and pelagic fish that prey on them.[115] The slow-growing and long-lived corals that characterize the Charleston Bump are fragile in nature and highly vulnerable to disturbance.[116] Because of the significant ecological importance of this deepwater coral ecosystem, the Governor of South Carolina expressly requested that the President designate the Charleston Bump and its coral reefs a Marine National Monument.[117] Unique deep water coral areas also have been located off the coast of North Carolina on the Cape Lookout and Cape Fear Banks.[118]

b. Threatened, Endangered, and Vulnerable Species

Oil and gas development would directly impact the hundreds of species that inhabit the Mid- and South-Atlantic coast and OCS, including scores of species of endangered birds, marine mammals, fish, and sea turtles. Current habitat could be soiled by oil spills or additional pollution or displaced by increased onshore and offshore activities. Oil spills present a serious threat to sea and coastal birds,[119] including the piping plovers, red knots, and oystercatchers, to which the Mid- and South-Atlantic coast is "vitally important."[120] For example, the red knot, which winters along the beaches in North Carolina, South Carolina, and Georgia, is already facing potentially calamitous decline, in part because of compromised food sources along its migratory routes.[121]

Furthermore, noise from oil and gas operations will be particularly harmful to marine mammals, fish, and sea turtles. The blasts associated with some types of seismic surveys reverberate throughout the ocean and inflict substantial injury to these animals, which are sensitive to and rely on sound for almost all important aspects of their life.[122] These noises can be

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[114] *See* Sea Grant, Marine Fisheries: Fisheries/Living Marine Resource Program, http://www.scseagrant.org/Content/?cid=43, (last visited 14 Sept. 2009).
[115] *See id.*
[116] *See* Letter from Mark Sanford, Governor of South Carolina, to George W. Bush, President of the United States, 21 May 2008, *available at* http://www.palmettoscoop.com/wp-content/uploads/2008/10/Sanford_Letter.pdf.
[117] *Id.*
[118] *See* STEVE W. ROSS, THE MARINE WORLD OF NORTH CAROLINA AND HYDROCARBON EXPLORATION, http://www.ncleg.net/documentsites/committees/OEESC/4-15-09%20Meeting/Marine%20world%20and%20hydrocarbon%20exploration.pdf (last visited 14 Sept. 2009).
[119] MMS DATA SURVEY, *supra* note 4, at III-35.
[120] *Id*. at III-27.
[121] *See* Red Knot, BirdWatcher's Digest.com, http://www.birdwatchersdigest.com/site/backyard_birds/conservation/red_knot.aspx, (last visited 2 Sept. 2009).
[122] Nat'l Oceanic & Atmospheric Admin., Taking and Importing Marine Mammals; Taking Marine Mammals Incidental to Navy Operations of Surveillance Towed Array Sensor System Low Frequency Active Sonar, 67 Fed. Reg. 46712, 46718 (16 July 2002); LINDA S. WEILGART, THE IMPACT OF OCEAN NOISE POLLUTION ON MARINE BIODIVERSITY (2008), *available at* http://www.pacificenvironment.org/downloads/Lindy_s%20Biodiversity%20paper.pdf; *see also* Laine Welch, *Seafood Industry Worries About Offshore Oil Leases in Alaska*, ALA. J COMMERCE, 31 Aug. 2008, *available at* http://alaskajournal.com/stories/083108/fis_20080831018.shtml.

deadly and have led to the mass stranding of whales and other marine mammals.[123] Studies reveal that noise from seismic air guns also causes damage to fish species, resulting in decreases in commercial fishing catch rates.[124] Although sea turtle hearing is poorly understood, similar impacts can be expected.[125] Vessel traffic, pile driving, platform noise, drilling, and construction have similar, though less severe, impacts.[126]

These impacts are particularly troubling given the endangered status of many of the Mid- and South-Atlantic OCS's whales, including the humpback, sperm, blue, fin, sei and North Atlantic right whales, and all of its sea turtles.[127] The North Atlantic right whale in particular is at the brink of extinction, with a population of only about 300 individuals.[128] The current status of this species is so tenuous that NMFS has determined the annual allowable removal level (potential biological removal or "PBR") for the right whale is *zero*.[129] The waters of Georgia and north Florida host the only known calving grounds for this species in the world. Every November female North Atlantic right whales return to give to these waters to give birth and remain there with their calves until April before migrating north again. Any oil or gas development in the Mid- and South-Atlantic OCS will imperil the very existence of this, and other, endangered species.

c. Fisheries

Oil and gas development would also place the fish and fisheries of the Mid- and South-Atlantic at significant risk. As explained above in Section II.C., offshore drilling would damage both commercial and recreational saltwater fishing industries by causing the loss of fishing grounds; negatively affecting navigation routes; displacing fishing infrastructure; and decreasing catches due to seismic testing, oil spills, and contamination from toxic drilling muds.[130]

B. Oil and Gas Development Will Have Multiple Indirect and Cumulative Impacts on Species and Other Natural Resources.

In addition to the direct effects of the oil and gas operations, oil and gas development in the Mid- and South-Atlantic OCS will have multiple indirect and cumulative effects. The indirect effects result in part from the associated infrastructure that will need to be installed on the Mid-

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[123] Robin Nixon, *Oil Drilling: Risks and Rewards*, LIVE SCIENCE, 25 June 2008, *available at* http://www.livescience.com/environment/080625-oil-drilling.html; WEILGART, *supra* note 122; *see also* NAT'L OCEANIC & ATMOSPHERIC ADMIN. & U.S. DEPT. OF THE NAVY, JOINT INTERIM REPORT: BAHAMAS MARINE MAMMAL STRANDING EVENT OF 15-16 MARCH 2000 (2001), *available at* http://www.nmfs.noaa.gov/pr/pdfs/health/stranding_bahamas2000.pdf.

[124] Robert D. McCauley, Jane. Fewtrell, & Arthur N. Popper, *High Intensity Anthropogenic Sound Damages Fish Ears*, J. ACOUST. COC. AM. Vol. 113, No. 1, Jan. 2003, *available at* http://www.awionline.org/ht/a/GetDocumentAction/i/10166; WEILGART, *supra* note 122.

[125] MMS DATA SURVEY, *supra* note 4, at III-25, -35, -38.

[126] MMS WORKSHOP REPORT, *supra* note 25, at 7.

[127] *See id*. at 4–5.

[128] Office of Protected Res., NOAA Fisheries, North Atlantic Right Whales, http://www.nmfs.noaa.gov/pr/species/mammals/cetaceans/rightwhale_northatlantic.htm, (last visited 16 Sept. 2009).

[129] NAT'L MARINE FISHERIES SERV., NORTHERN RIGHT WHALE *(EUBALAENA GLACIALIS):* WESTERN ATLANTIC STOCK 10 (2007), *available at* http://www.nmfs.noaa.gov/pr/pdfs/sars/ao2007whnr-w.pdf.

[130] Letter from Grader to Pelosi & Reid, *supra* note 73.

and South-Atlantic Coast. The cumulative impacts result from the interaction of the oil and gas operations with the many existing uses that already put stress on the Mid- and South-Atlantic OCS. Under NEPA, MMS must also consider these impacts.[131]

1. Indirect Impacts on Coastal Economies

Many of the same impacts that would harm the Mid- and South-Atlantic OCS's biological resources would also damage the Mid- and South-Atlantic coastal economies that are heavily reliant on the billions of dollars brought in each year by the fishing and tourism industries. In 2007, tourism in Virginia generated $18.7 billion in visitor spending and supported 210,000 jobs,[132] while, in 2008, North Carolina attracted $16.9 billion in visitor spending and enjoyed 190,000 tourism-supported jobs.[133] Tourism accounted for over 10% of state employment in South Carolina in 2007 and generated $16.7 billion in economic demand.[134] Finally, tourism is Georgia's second largest industry, employing 241,000 people and having an economic impact of $34 billion.[135] Coastal areas, such as Virginia's Chesapeake Bay and Virginia Beach, North Carolina's Outer Banks, South Carolina's Myrtle Beach and Hilton Head Island, and Georgia's Golden Isles, are integral to generating these tourism jobs and dollars.

Oil and gas development could put these economies at significant risk. Offshore activities and structures would displace recreational fishing, whale-watching and other eco-tourism, and cruise ship routes. Visible offshore activities, onshore infrastructure, air pollution, water pollution, oil spills, and debris and sediments washed ashore would make currently clean and healthy beaches less attractive to tourists.[136] Additionally, catastrophic spills, such as the recent Timor Sea spill off the coast of Australia, could adversely impact not just the tourism sector and commercial and sport fishing, but the entire economy of coastal regions, causing job losses, decreasing state revenues, and depressing local real estate markets. While spills such as this may be rare, when they occur the impacts are severe.

Also, refining and processing any oil and natural gas removed from the Mid- and South-Atlantic OCS will have major impacts on coastal communities and their environment. According to a report published by the Center for Health and the Global Environment at Harvard Medical School, oil refineries present major health hazards for human communities as well as marine and terrestrial ecosystems.[137] Average-sized U.S. refineries release on a daily basis up to an estimated

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[131] *See* 40 C.F.R. §§ 1508.7, 1508.8; *see also* Natural Res. Def. Council, Inc. v. Hodel, 865 F.2d 288, 299 (D.C. Cir. 1988) (holding EIS inadequate because it failed to discuss cumulative effects on migrating species).
[132] Va. Tourism Corp., Tourism in Virginia, http://www.virginia.org/pressroom/tourism.asp (last visited 11 Sept. 2009).
[133] Outer Banks Visitors Bureau, 2008 Tourism Spending Estimates Released for Dare County, http://www.outerbanks.org/visitor_services/press_room/press_releases/2008_Dare_County_Tourism_Figures.pdf (11 Aug. 2009).
[134] Office of Res. & Stats., S.C. Budget & Control Bd., South Carolina Statistical Abstract: Travel and Tourism Annual Data for South Carolina (2007), http://www.ors2.state.sc.us/abstract/chapter15/recreation3.php (last visited 11 Sept. 2009).
[135] Georgia Dept. of Econ. Development, Georgia Industries: Tourism, http://www.georgia.org/GeorgiaIndustries/Tourism/Programs/Pages/default.aspx (last visited 11 Sept. 2009).
[136] *See* MMS DATA SURVEY, *supra* note 4, at III-29.
[137] OIL: A LIFECYCLE ANALYSIS OF ITS HEALTH AND ENVIRONMENTAL IMPACTS 5 (Paul R. Epstein & Jessie Selber, eds., 2002), *available at* http://chge.med.harvard.edu/publications/documents/oilfullreport.pdf.

11,000 gallons of oil into the air, land, and water, including dangerous emissions such as hydrocarbons, sulfur dioxide, carbon monoxide, and particulate solids.[138]

Oil refineries impact surrounding communities and environments in many other ways as well, such as through thermal pollution, which results in disruptions to aquatic ecosystems, and noise pollution, which poses a significant threat to the health and safety of oil refinery employees.[139] Likewise, the process of removing impurities such as helium, carbon dioxide, hydrocarbons, and toxic hydrogen sulfide from natural gas can result in the discharge of a range of harmful pollutants, including the acid rain precursor sulfur dioxide.[140] Moreover, the chain of negative impacts of these fossil fuel products does not cease once they are processed, as the end-use combustion of oil and natural gas would only contribute to the impending threat of climate change.

Finally, as explained previously in Section II.C., oil and gas development on much of the Mid- and South-Atlantic OCS will threaten America's national security interests. Oil and gas development will interfere with the training and testing activities the armed forced conduct in the Mid- and South-Atlantic OCS. Furthermore, oil and gas operations will contribute to the climate change impacts that a group of highly qualified military personal reported "pose[] a serious threat to America's national security."[141]

2. Cumulative Impacts on the Marine Environment

While the relationship between oil and gas impacts and existing environmental stressors is a concern for all of the threats heretofore discussed, the cumulative impacts of escalated noise and ship strikes are particularly alarming. According to MMS, existing noise from a variety of industrial activities has already reduced the effectiveness of whale communication by ten percent.[142] New sources of harmful noise impacts are arising all the time. For example, the U.S. Navy is slated to begin construction on a new Undersea Warfare Training Range, which would involve up to 300 sound emitting "transducer nodes" spread over 1,713 square kilometers in the South Atlantic.[143] Existing acoustic disturbance led MMS to conclude that "cumulative [noise impacts] are steadily eroding marine mammal's abilities to communicate . . . [and] will start to affect the abilities of whales to find food and mates . . . [resulting in] significant, long-lasting, population level consequences."[144] The marine environment thus cannot tolerate the additional severe noise impact associated with oil and gas exploration, drilling, and transportation.

Increased ship strikes to marine mammals, especially North Atlantic right whales, are also of great concern. According to MMS, "[V]essel strikes can result in injury or death and are a

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[138] *Id*. at 27.
[139] *Id.*
[140] DWIGHT HOLING, COASTAL ALERT: ECOSYSTEMS, ENERGY, AND OFFSHORE OIL DRILLING 45 (1990).
[141] THE CNA CORP., NATIONAL SECURITY AND THE THREAT OF CLIMATE CHANGE 6 (2007), *available at* http://securityandclimate.cna.org/report/SecurityandClimate_Final.pdf.
[142] MMS WORKSHOP REPORT, *supra* note 25, at 6–7.
[143] DEPT. OF THE NAVY, EXECUTIVE SUMMARY, FINAL ENVIRONMENTAL IMPACT STATEMENT: UNDERSEA WARFARE TRAINING RANGE, at S-1 (2009), *available at* http://projects.earthtech.com/uswtr/EIS/FOEIS-EIS_2009/FOEIS-EIS_2009.htm.
[144] *Id.* at 7.

significant source of mortality for the highly endangered North Atlantic right whale and the endangered West Indian manatee."[145] Furthermore, "[a]ll species of baleen whales have been reported killed by ships, and finbacks, humpbacks, and right whales are most frequently reported." Of the 50 dead right whales reported since 1986, at least 19 were killed by vessel collisions, making ship strikes the greatest known cause of right whale mortality in the western region of the North Atlantic.[146] Collisions with ships traveling out of the Chesapeake Bay area alone have resulted in at least five right whale mortalities in the last 15 years.[147] The additional vessel traffic associated with construction of on- and offshore infrastructure, drill rig maintenance, and oil and gas transportation will only increase the risk of ship strikes to these imperiled animals.

3. Climate Change

Finally, all of the above impacts must be analyzed against the background of global climate change. The environmental stresses caused by the oil and gas development on the Mid- and South-Atlantic OCS will interact with growing climate stressors and may push ocean and coastal ecosystems toward collapse. Changes are already occurring worldwide,[148] with rising seas threatening coastal wetlands and estuaries, particularly during severe storms.[149] When combined with the proposed OCS development, these changes risk crossing ecological thresholds—points where even small changes can push systems into "widespread coordinated system failure characterized by a catastrophic change in the overall state of the system."[150]

C. There Are Alternatives to Oil and Gas Development in the Mid- and South-Atlantic OCS, Which an EIS Must Address.

NEPA requires that MMS fully discuss both full and partial alternatives to the proposed action. MMS's alternatives analysis should fully discuss the alternatives to pursuing oil and gas development in the Mid- and South-Atlantic OCS, including conservation strategies and alternative sources of energy.

The discussion of alternative energy sources must address, for example, developing offshore renewable energy resources in the Mid- and South-Atlantic OCS to help provide for U.S. energy needs. As discussed above in Section II.B., the Mid- and South-Atlantic OCS contains vast potential renewable energy resources in the form of wind, wave, tidal, and ocean current energy. The EIS must rigorously explore these renewable means of meeting U.S. energy needs as alternatives to pursuing the minimal and finite recoverable oil and gas reserves in the Mid- and South-Atlantic OCS.

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[145] MMS DATA SURVEY, *supra* note 4, at III-39–III-40.
[146] *See* S.D. Kraus, et al., *North Atlantic Right Whales in Crisis*, SCIENCE, 22 July 2005, at 561.
[147] *Id*.
[148] *See, e.g.*, Terry L. Root et al., *"Fingerprints" of Global Warming on Wild Animals and Plants*, 1333 NATURE 1 (12 Sept. 2002).
[149] CYNTHIA ROSENZWEIG ET AL., ASSESSMENT OF OBSERVED CHANGES AND RESPONSES IN NATURAL AND MANAGED SYSTEMS, CONTRIBUTION OF WORKING GROUP II TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 92–93 (2007).
[150] DANIEL B. FAGRE ET AL., U.S. CLIMATE CHANGE SCIENCE PROGRAM, SYNTHESIS AND ASSESSMENT PRODUCT 4.2: THRESHOLDS OF CHANGE IN ECOSYSTEMS 6 (Public Review Draft 14 Aug. 2008).

Additionally, MMS must consider conservation strategies for improving energy efficiency (sometimes known as demand side management). The Administration has already taken several steps towards improving energy efficiency by investing in weatherization for low income citizens, offering tax breaks to homeowners for installation of efficient heating and cooling systems, making federal buildings more energy efficient, and improving efficiency standards for household appliances.[151] The Administration has also worked to raise fuel economy standards to 35.5 miles per gallon by 2016, which will save the country 1.8 billion barrels of oil over the life of the program.[152] Continuing these efforts as well as making further investments in energy efficient technologies, such as electric automobiles and hybrid automobiles with the ability to charge directly from the power grid, can alleviate energy demand in the United States and render further development of oil and gas reserves unnecessary. This alternative will avoid all the adverse environmental impacts of oil and gas development as well as address the threat of global warming.

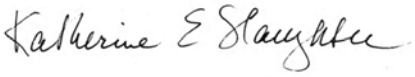
Because the alternatives analysis is the "heart" of the NEPA process, an EIS on oil and gas development in the Mid- and South-Atlantic OCS must contain a robust analysis of these alternatives as well as any others.[153] Each of the alternatives discussed above would address the underlying objective while avoiding the worst adverse impacts to the environment.

IV. CONCLUSION

In summary, we urge MMS to remove the Mid- and South-Atlantic OCS from proposed oil and gas development because the meager value of estimated recoverable reserves in these OCS regions would add little to our domestic energy supply but would risk substantial environmental and economic harm, and because reasonable alternatives exist. MMS should fully explore developing the renewable sources of energy in the Mid- and South-Atlantic OCS such as wind, wave, tidal, and ocean current. Revising the draft proposed 5-year plan accordingly is not only consistent with this Administration's promise to build a clean energy economy but is called for by OCSLA, and is the prudent choice for our energy future.

We appreciate the opportunity to comment on this proposal.

Sincerely,



Katherine E. Slaughter
Senior Attorney

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[151] White House, Energy and Environment, *supra* note 54.
[152] White House, President Obama Announces National Fuel Efficiency Policy, 19 May 2009, *available at* http://www.whitehouse.gov/the_press_office/President-Obama-Announces-National-Fuel-Efficiency-Policy/.
[153] 40 C.F.R. § 1502.14.

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