Sunrise Wind - Appendix D: Geographical Analysis Areas

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Appendix D: Geographic Analysis Area Descriptions

Table D - 1 Resource Specific Geographic Analysis Area

Resource	Geographic Analysis Area	Rationale
Air Quality	The geographic analysis area covers the airshed within 15.5 miles of the onshore components and ports, the area within 3 nautical miles of state borders, the area within a 25-mile radius of the SRWF centroid and the offshore export cable centroid.	The geographic analysis area includes the region subject to EPA review as part of an OCS permit for the Project under the Clean Air Act as well as areas within a reasonable buffer around the onshore components and ports.
Water Quality	Onshore: Carmens River watershed (or maybe just downstream of Long Island Expressway) Offshore: ICW, a 10-mile buffer around the offshore project components, transit routes, and a 15.5-mile buffer around the ports that may be used.	The onshore geographic analysis area was chosen to capture the reach of the Carmen River that will be crossed by onshore components and could be affected by construction and operation activities. The offshore area was chosen to capture the areas that could be affected by construction and operation activities.
Bats	The US coastline from Maine to Florida. Although some historic anecdotal observations of bats up to 1,212 miles offshore of North America exist, recent offshore observations of tree bats range from 10.5 to 26 miles offshore. Cave bats, which typically do not occur offshore, and migratory tree bats may use onshore terrestrial habitat during their life cycle and migration. For this reason, the geographic analysis area for bats consists of the US east coast from Maine to Florida extends from 0.5 miles onshore to cover Project component sites and 100 miles offshore.	The geographic analysis area was established to capture most of the movement range during their life cycle and migration. Northern long-eared bat and other cave bats do not typically occur on the OCS. Tree bats are long-distance migrants; their range includes most of the Atlantic coast from Maine to Florida. Although these species have been documented traversing the open ocean and have the potential to encounter WTGs, the use of offshore habitat is thought to be limited and generally restricted to spring and fall migration. The onshore limit of geographic scope is intended to cover most of the onshore habitat used for those species that may encounter the Project during their life cycle.
Benthic Resources	ICW-HDD area alignment Offshore cable alignment (approx. 106 mi) with a 330-ft buffer width. SRWF lease area: Within the lease area, approx. 60,350 ac were mapped at sites distributed across the WTG and cable array	Benthic resources were characterized using past surveys within a 10 mi buffer around the lease area for ecological context, and site-specific surveys were conducted along the alignments and within the lease area to cover the maximum area of construction disturbance. Four reference sites were also surveyed to provide a control set for post-construction monitoring.

Resource	Geographic Analysis Area	Rationale
Birds	The US coastline from Maine to Florida. The offshore limit is 100 miles from the Atlantic shore to capture migratory movements of most species. The onshore limit is 0.5 miles inland to cover Project onshore habitats that may be used by birds during their life cycle and/or migration.	The geographic analysis area was established to cover resident and migratory species that winter as far south as South America and the Caribbean and those that breed in the Arctic and Atlantic coast that travel through the area.
Coastal Habitat and Fauna	All onshore Project areas, including a 1.0-mile buffer.	Resources in this area likely have small home ranges. These resources are unlikely to be affected by impacts outside their home ranges.
Finfish, invertebrates, and Essential Fish Habitat	The Scotian Shelf, Northeast Shelf, and Southeast Shelf Large Marine Ecosystems (LME), which captures most of the movement range within U.S. waters for most species in this group	Designated EFH has been assigned to approximately 42 species of fish and invertebrates of various life stages. Within the 0.5-mi corridor around the SREWC centerline, a total of 45 species of fish and invertebrates have been designated EFH, and another 32 species have been designated EFH within the SRWEC-NYS. Within the onshore Transmission Cable path, 17 species have designated EFH.
Marine mammals	The Scotian Shelf, Northeast Shelf, and Southeast Shelf LMEs.	The geographic analysis area is likely to capture most of the movement range for most species in this group*. BOEM notes that potential vessel trips from port locations in the Gulf of Mexico could occur under the Proposed Action. However, whether ports in these regions would be used or not would not be known until additional details are available when contracts are in place. Because BOEM estimates that only up to four vessel trips could occur (but are unlikely), the geographic analysis area was not extended to encompass the Gulf of Mexico.
Sea turtles	The Northeast and Southeast Shelf LMEs.	This area is likely to capture the majority of the movement range for most species in this group.*
Wetlands and other waters of the United States	The geographic analysis area for wetlands and other WOTUS include the Carmans River-Great South Bay watershed (HUC-0203020203) and Shinnecock Bay-Atlantic Ocean watershed (HUC-0203020206)	This geographic analysis area includes the network of surface waterbodies that could be affected by onshore Project construction and O&M activities.
Commercial fisheries and for-hire recreation fishing	Waters managed by the New England Fishery Management Council and/or the Mid-Atlantic Fisheries Management Council within the U.S. Exclusive Economic Zone (from 3 to 200 nm [5.6 to 370.4 kilometers] from the coastline, plus the state waters (out to 3 nm [5.6	The boundaries for the geographic analysis area were developed to consider impacts to federally permitted vessels operating in all fisheries in state and U.S. Exclusive Economic Zone waters.

Resource	Geographic Analysis Area	Rationale
	kilometers] from the coastline) from Maine to North Carolina.	
Cultural resources	Terrestrial Cultural Resources: The depth and breadth of terrestrial areas potentially impacted by any ground-disturbing activities and the viewshed from which renewable energy structures, whether located offshore or onshore, would be visible. Marine Cultural Resources: The depth and breadth of the seabed are potentially impacted by any bottom-disturbing activities.	The geographic area analyzed to identify existing cultural resources for the NEPA review is equivalent to the NHPA Section 106 Area of Potential Effects (APE) for the proposed Sunrise Wind Farm undertaking. 36 C.F.R. § 800.16(d) defines the APE as the geographic area or areas within which an undertaking may directly or indirectly cause alteration in the character or use of historic properties if any such properties exist.
Demographics, employment, and economics	Primary Analysis Area: Suffolk, Albany, Kings, and New York counties in New York; New London County in Connecticut; Baltimore County in Maryland; Bristol County in Massachusetts; Gloucester County in New Jersey; Providence and Washington counties in Rhode Island; the City of Norfolk/Norfolk County in Virginia. These counties include those with proposed onshore infrastructure and/or are counties with potential port cities. Expanded Analysis Area: All the Primary Analysis Area counties, in addition to Barnstable, Dukes, Nantucket, and Plymouth counties in Massachusetts and Kent and Newport counties in Rhode Island, which are within the potential viewshed of the Project and could experience visual impacts on property values.	These counties are the most likely to experience beneficial or negative economic impacts from the proposed Project.
Environmental justice	Suffolk, Albany, Kings, and New York counties in New York; New London County in Connecticut; Baltimore County in Maryland; Bristol County in Massachusetts; Gloucester County in New Jersey; Providence and Washington counties in Rhode Island; the City of Norfolk/Norfolk County in Virginia. These counties include those with proposed onshore infrastructure and/or are counties with potential port cities.	The geographic analysis area would include the same counties as the Demographics, Employment, and Economics analysis area, and the environmental justice communities located within are the most likely to experience impacts from the proposed Project, whether beneficial or adverse.
Land use and coastal infrastructure	Town of Brookhaven, resources adjacent to the landfall construction area, including land within the Fire Island National Seashore boundary, Smith Point County Park boundary, and Otis Pike Wilderness boundary, 1,000 feet into the Atlantic Ocean, and 4,000 feet into Great South Bay, which is located within the boundary of the Fire Island National Seashore, and the ports	These areas encompass locations where BOEM anticipates direct and indirect impacts associated with proposed onshore facilities and ports.

Resource	Geographic Analysis Area	Rationale
	potentially used for Project construction, O&M, and conceptual decommissioning.	
Navigation and vessel traffic	Includes a 10-mile buffer around Sunrise Wind Farm and neighboring wind farms, as well as port facilities and neighboring fairways and recommended vessel routes.	These areas encompass locations where BOEM anticipates direct and indirect impacts associated with Project construction, O&M, and conceptual decommissioning.
Other Uses (marine, military use, aviation, offshore energy, scientific research, and surveys)	Marine mineral extraction: Areas within 0.25 miles of the Project and footprints of other cables and wind lease areas in the RI-MA WEA. National security/military use: An area roughly bounded by Montauk, New York; Providence, Rhode Island, Provincetown, Massachusetts; and within a 10-mile buffer from wind lease areas in the RI-MA WEA. Aviation and air traffic: Airspace and airports used by regional air traffic. Radar systems: Includes air space used by regional air traffic. Cables and pipelines: area within 1 mile of the Project and other undersea facilities and wind lease areas in the RI-MA WEA. Scientific research and surveys: the Northeast Shelf Large Marine Ecosystem, which extends from the southern edge of the Scotian Shelf (in the Gulf of Maine) to Cape Hatteras, North Carolina.	The geographic analysis area encompasses locations where BOEM anticipates direct and indirect impacts associated with Project construction, O&M, and conceptual decommissioning. The scientific research and surveys area encompasses the locations where scientific research and surveys are anticipated to occur.
Recreation and tourism	The geographic analysis area includes all Project components, plus a 40-mile radius from the WTG array, resources adjacent to the landfall construction area, including land within the Fire Island National Seashore boundary, Smith Point County Park boundary, and Otis Pike Wilderness boundary, 1,000 feet into the Atlantic Ocean, and 4,000 feet into Great South Bay that is located within the boundary of the Fire Island National Seashore, a three-mile radius around the proposed OnCS-DC site (Union Avenue site), and portions of the towns of Brookhaven and Islip along with small portions of the villages of Lake Grove and Patchogue and the cable landfall and cable routes to the OnCS-DC site.	This geographic analysis area was selected to coincide with the SRWF visual impact assessment visual analysis area to address Project visibility from sensitive resources and encompass all locations where BOEM anticipates direct and indirect impacts associated with Project construction O&M, and conceptual decommissioning.
Scenic and visual resources	The geographic analysis area includes all Project components, plus a 40-mile radius of the WTG array. The onshore visual geographic analysis area includes the OnCS–DC site and a 3-mile radius	This geographic analysis area was selected to coincide with the SRWF visual impact assessment visual analysis area to address Project visibility from sensitive resources and encompass all locations where BOEM anticipates direct and indirect impacts

Resource	Geographic Analysis Area	Rationale
	around the OnCS–DC site, the lands within the Fire Island National Seashore, which include lands within Smith Point County Park and the Otis Pike Wilderness, 1,000 feet into the Atlantic Ocean, and 4,000 feet into Great South Bay, and the cable landfall and cable routes (0.25 perimeter) to the OnCS-DC site.	associated with Project construction O&M, and conceptual decommissioning.

* LMEs are delineated based on ecological criteria including bathymetry, hydrography, productivity, and trophic relationships among populations of marine species, and NOAA uses them as the basis for ecosystem-based management.

Figures of Geographical Analysis Areas

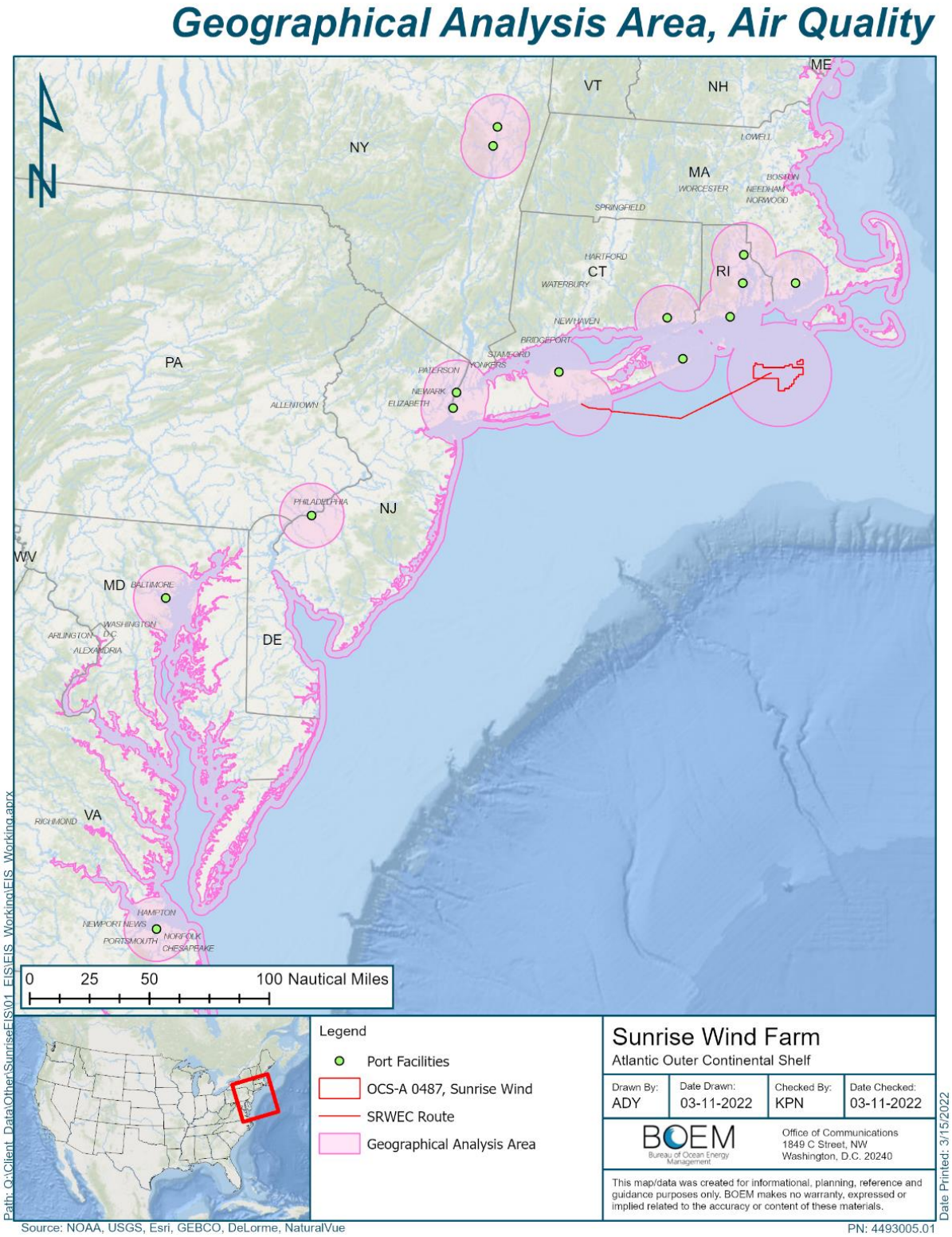

Figure D - 1 Geographic Analysis Area for Air Quality

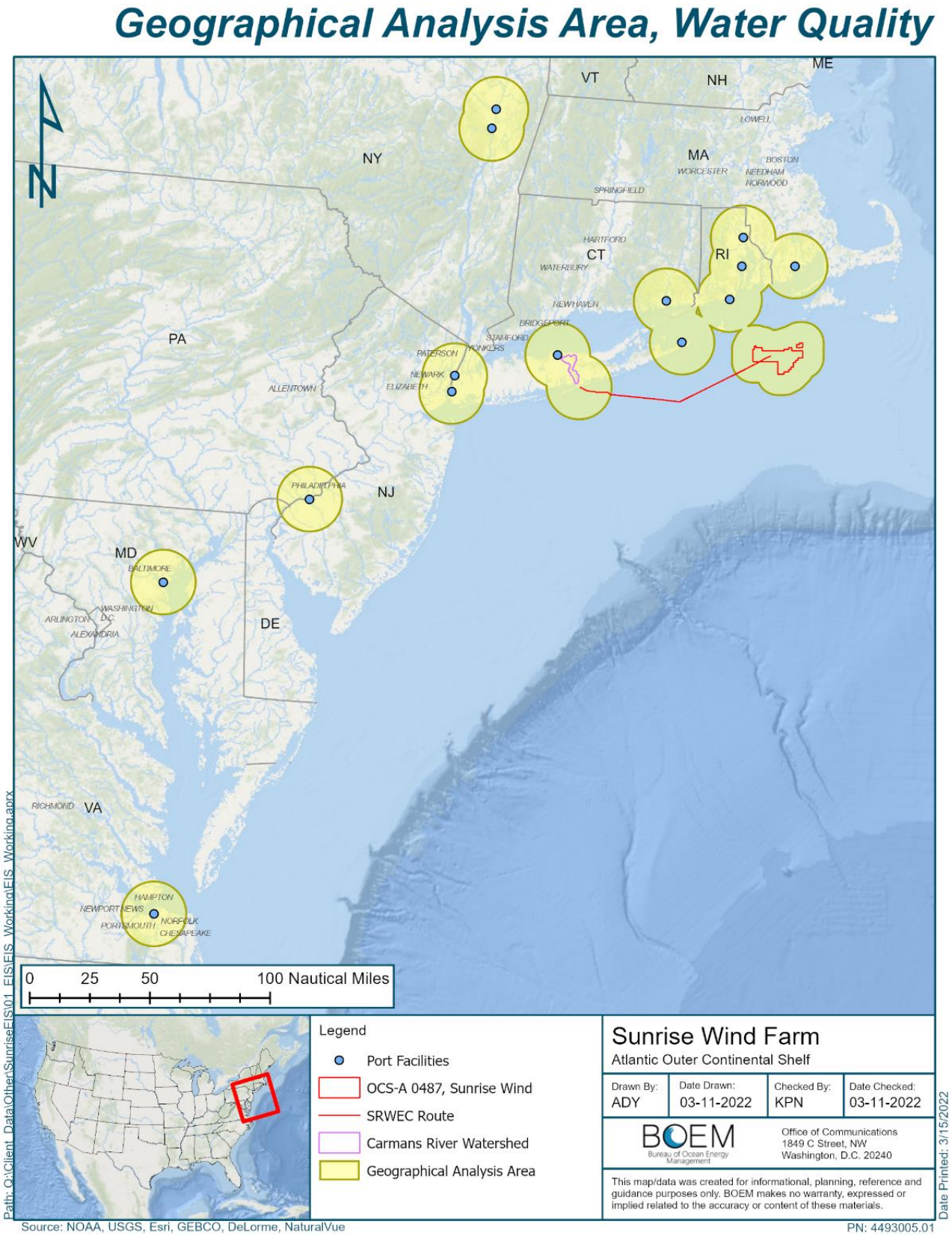

Figure D - 2 Geographic Analysis Area for Water Quality

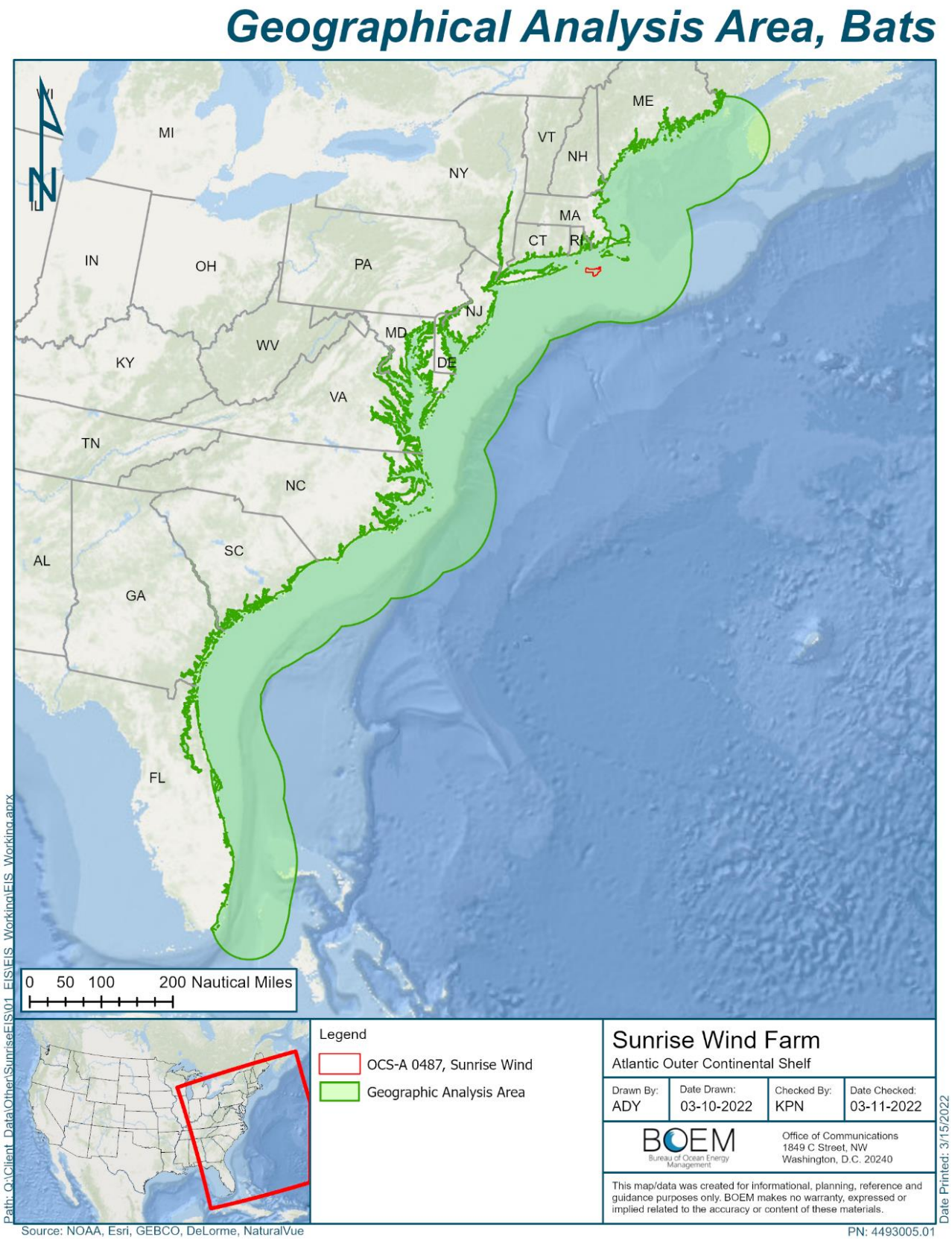

Figure D - 3 Geographic Analysis Area for Bats

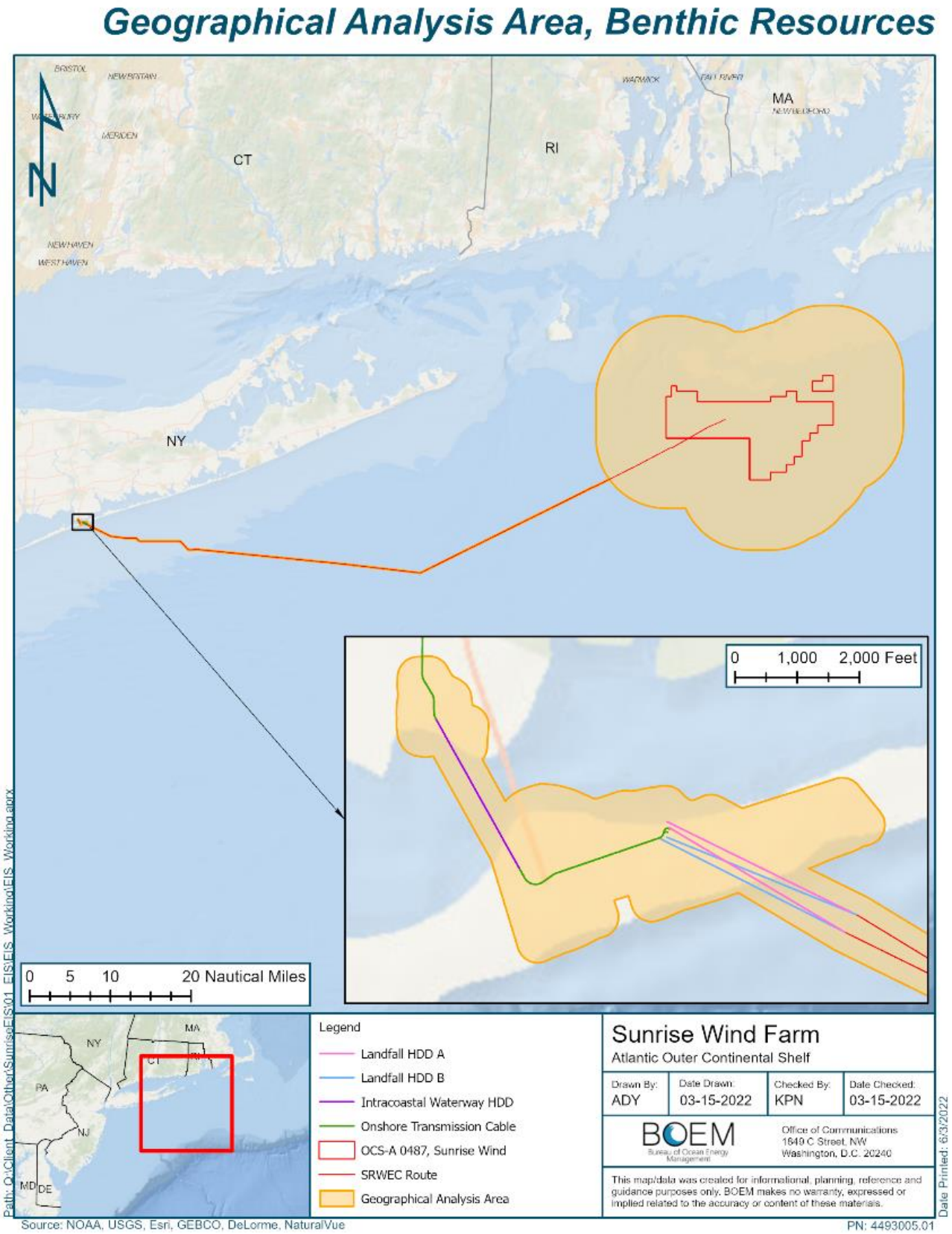

Figure D - 4 Geographic Analysis Area for Benthic Resources

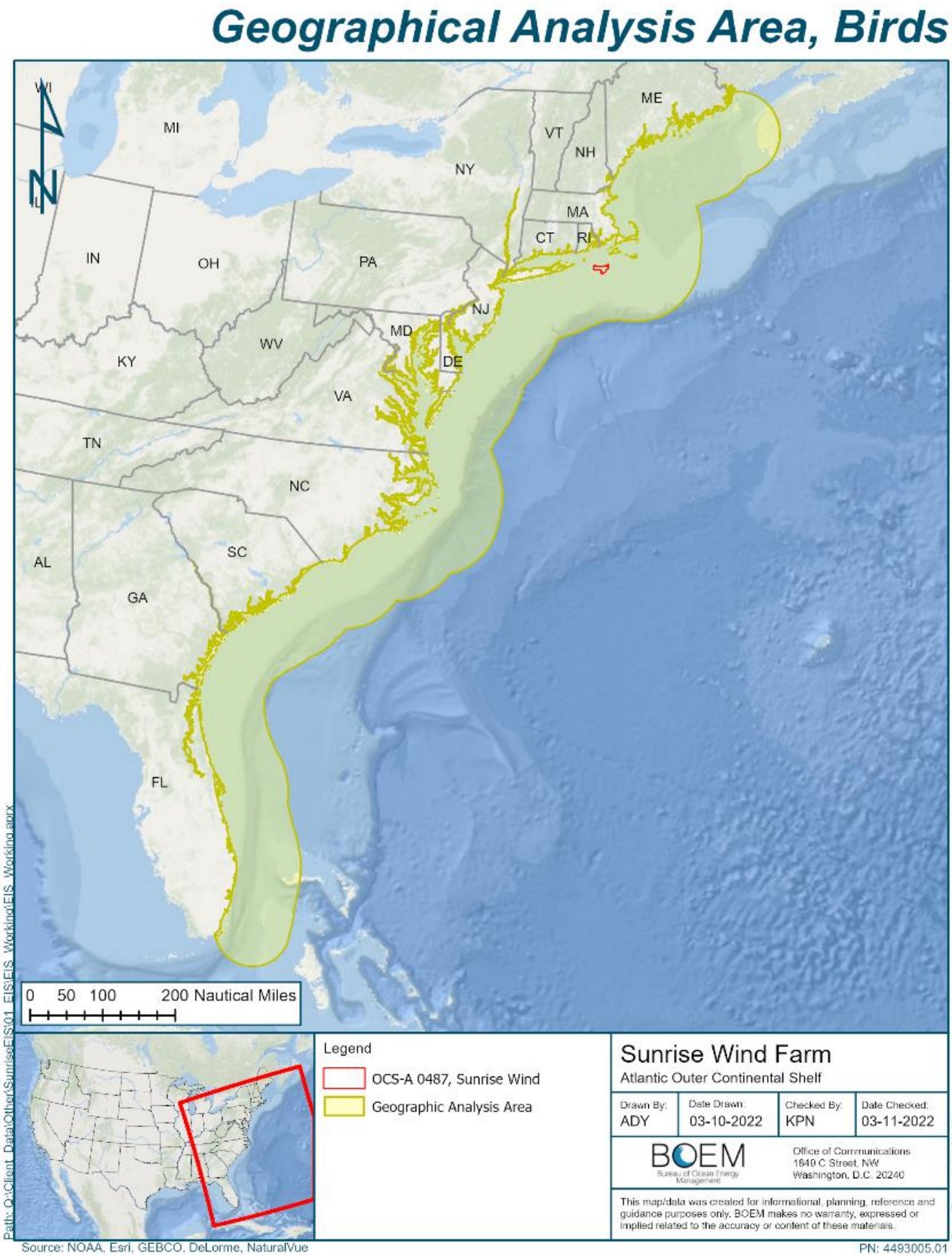

Figure D - 5 Geographic Analysis Area for Birds

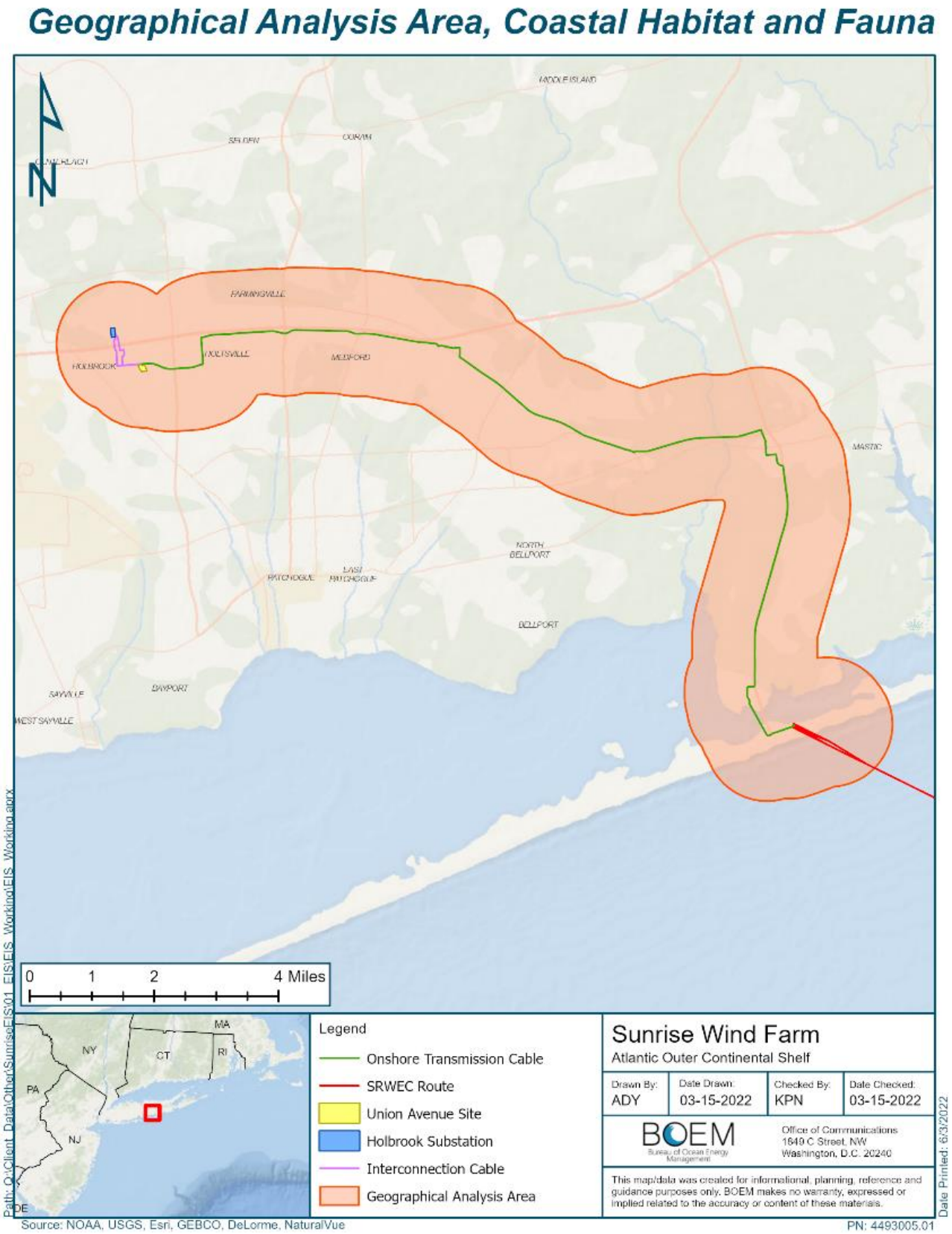

Figure D - 6 Geographic Analysis Area for Coastal Habitat and Fauna

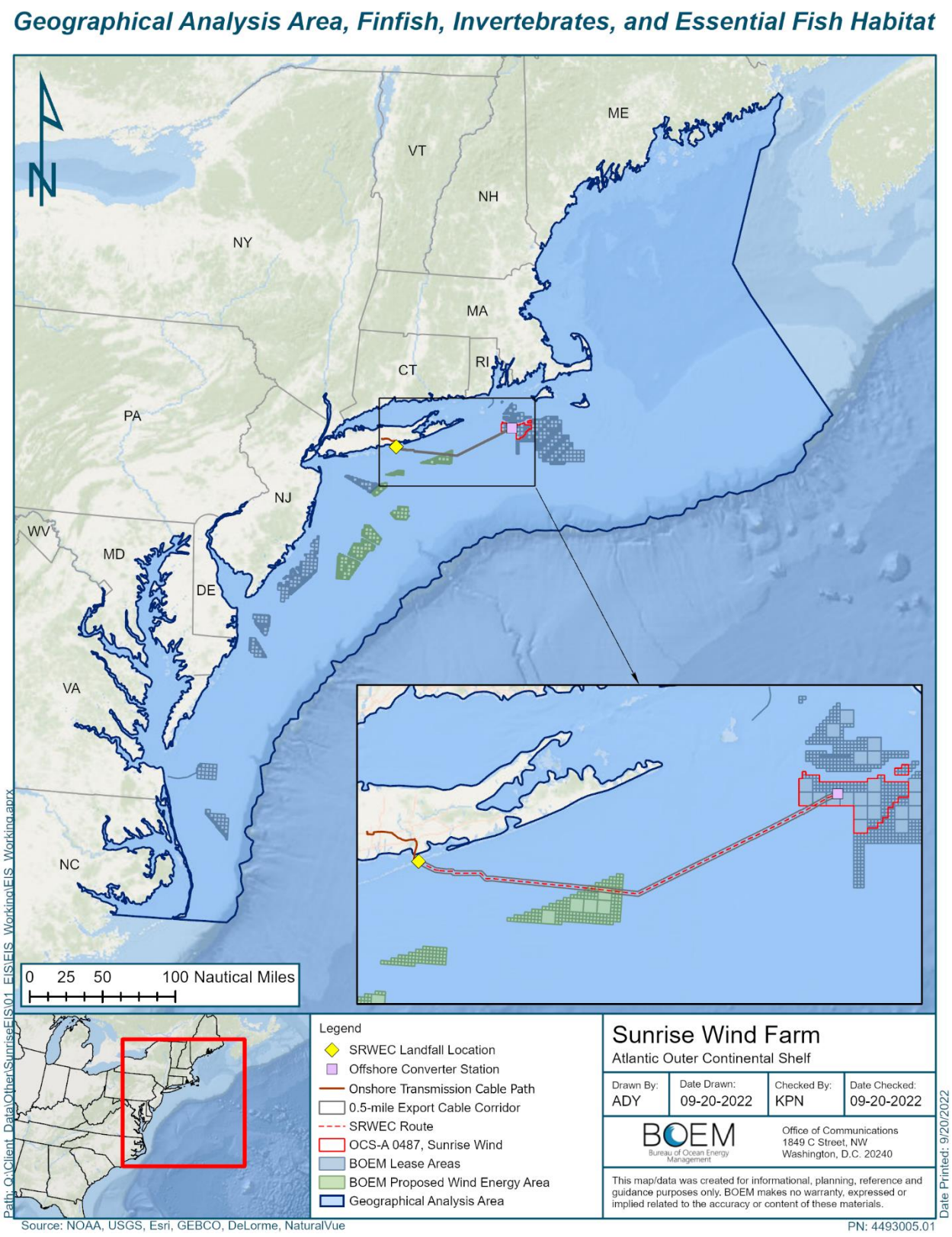

Figure D - 7 Geographic Analysis Area for Finfish, Invertebrates, and Essential Habitat

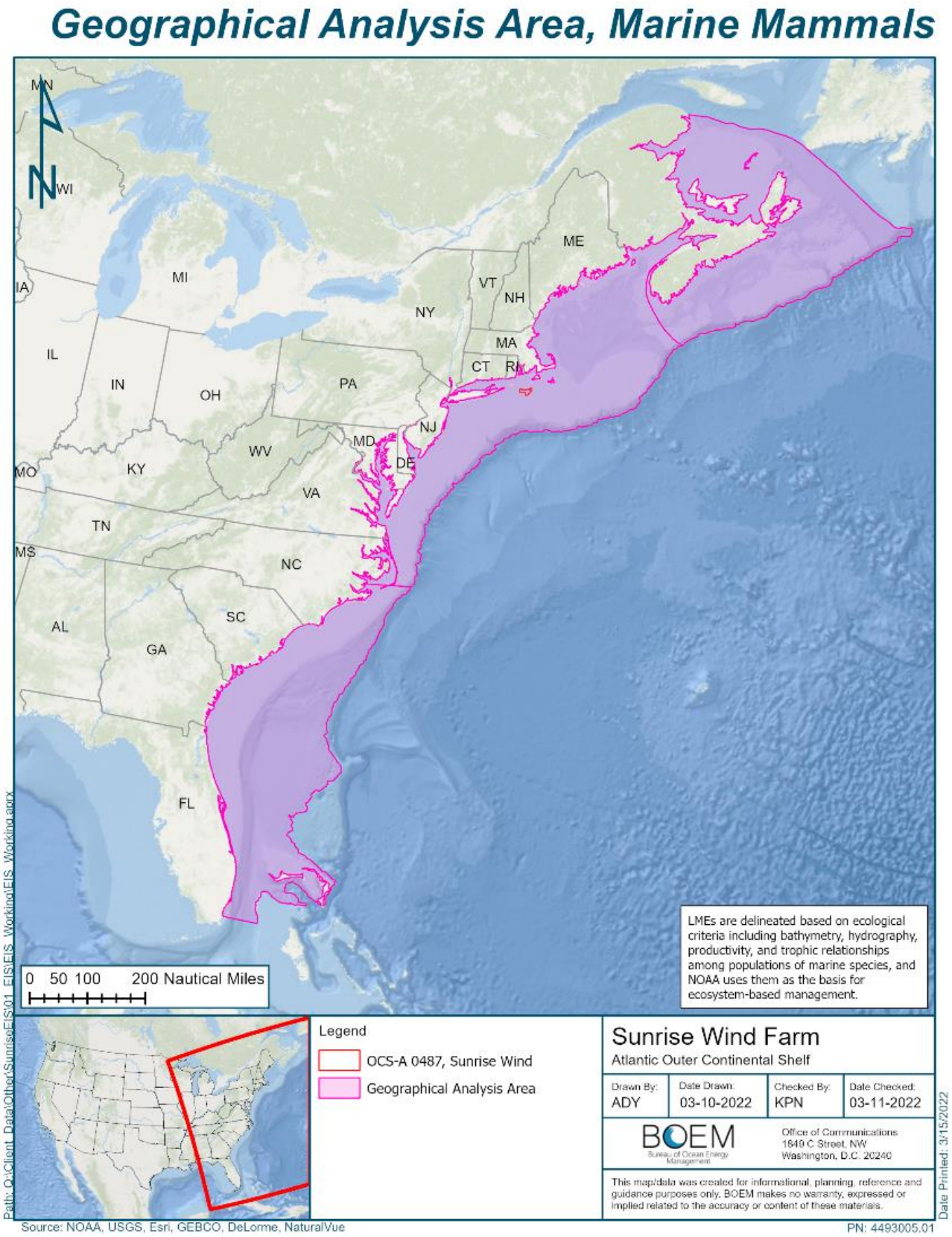

Figure D - 8 Geographic Analysis Area for Marine Mammals

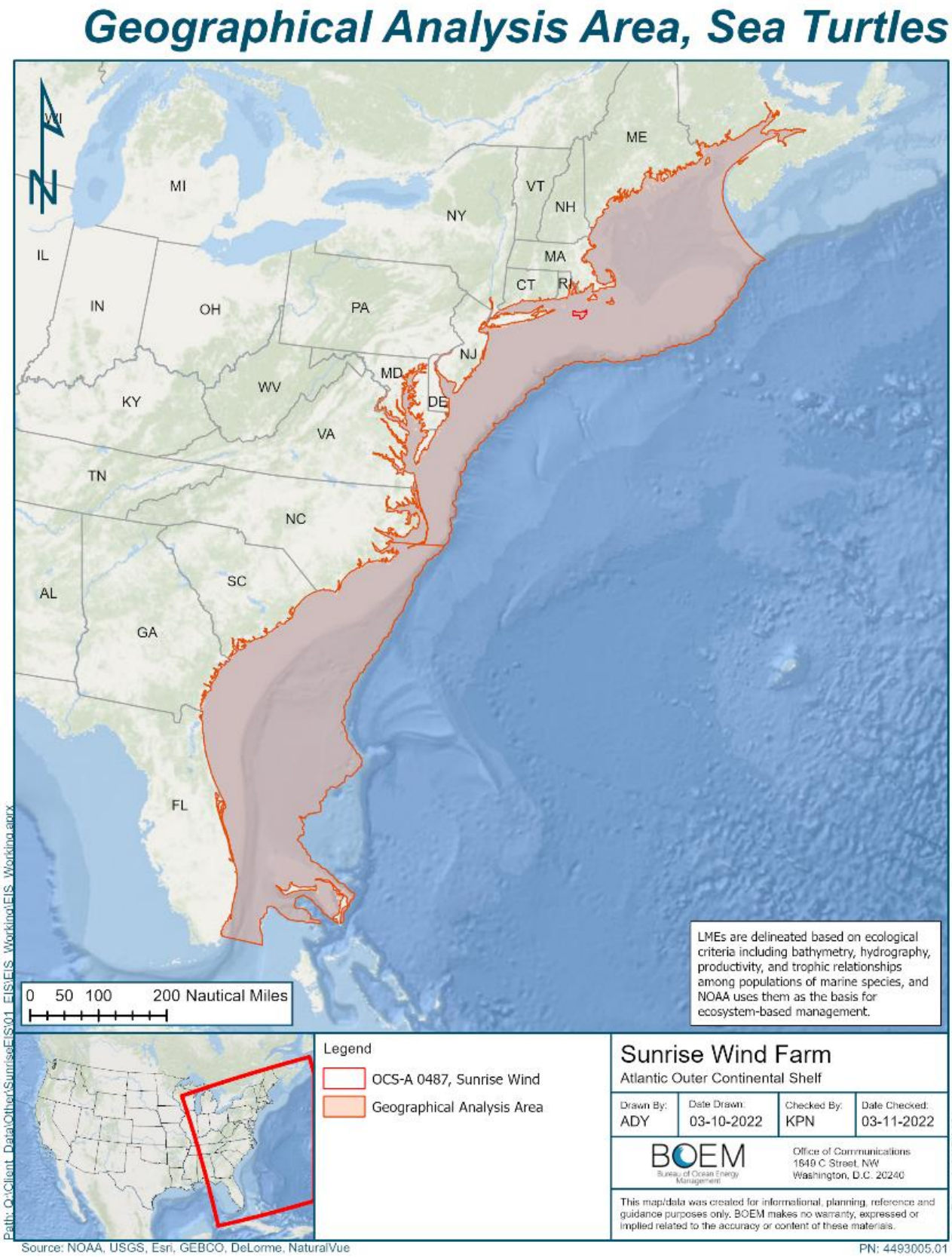

Figure D - 9 Geographic Analysis Area for Sea Turtles

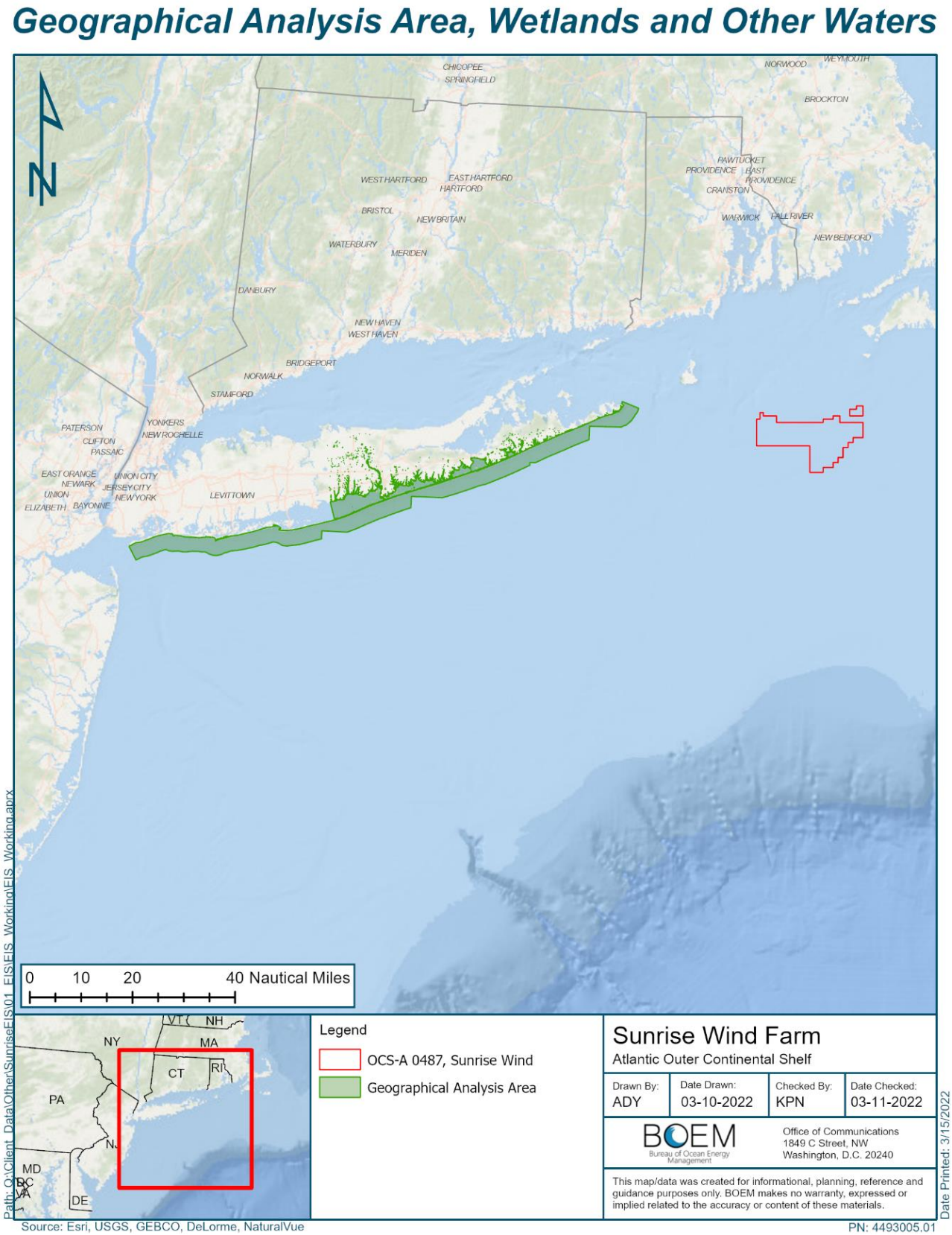

Figure D - 10 Geographic Analysis Area for Wetlands and Other Waters

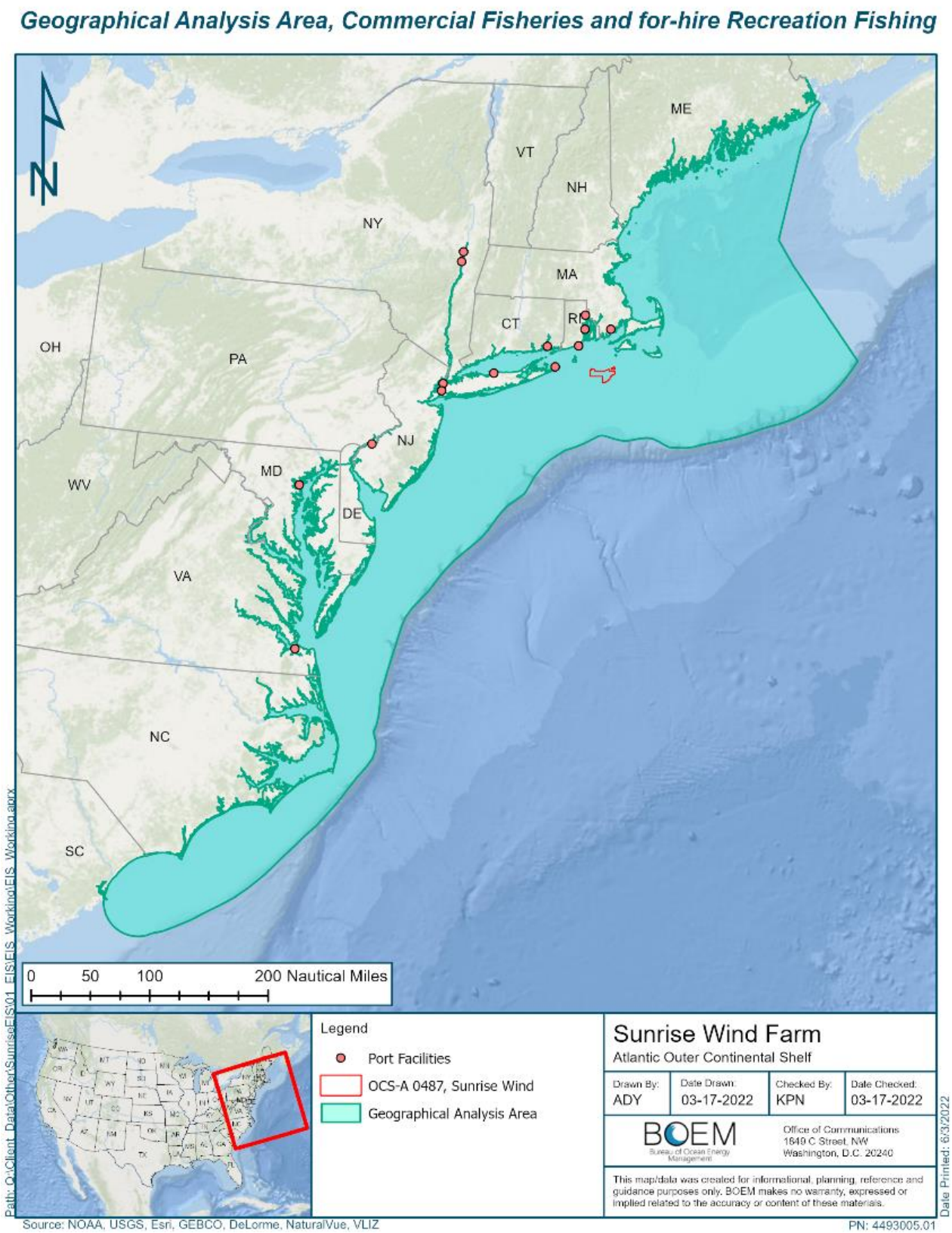

Figure D - 11 Geographic Analysis Area for Commercial Fisheries and For-Hire Recreation Fishing

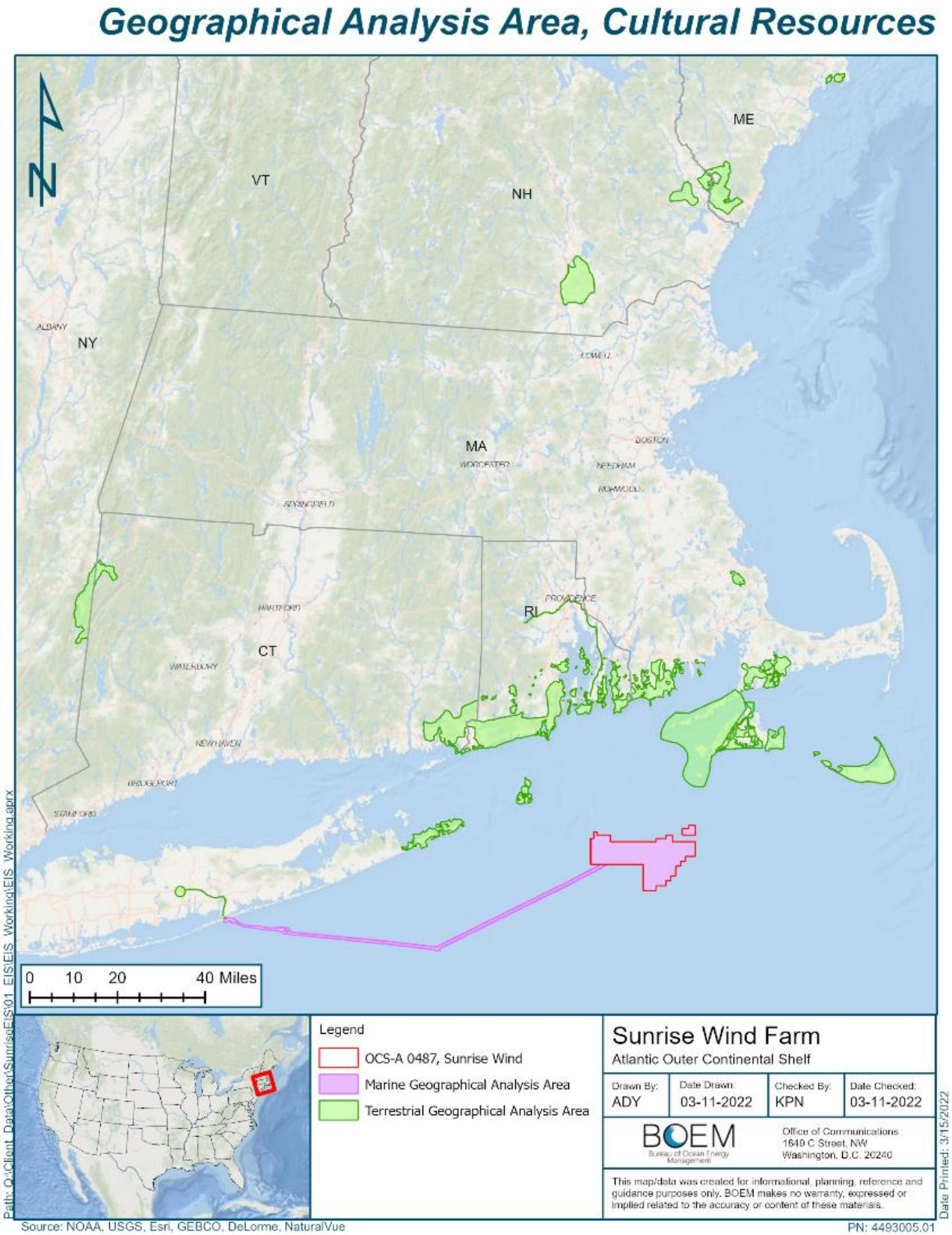

Figure D - 12 Geographic Analysis Area for Cultural Resources

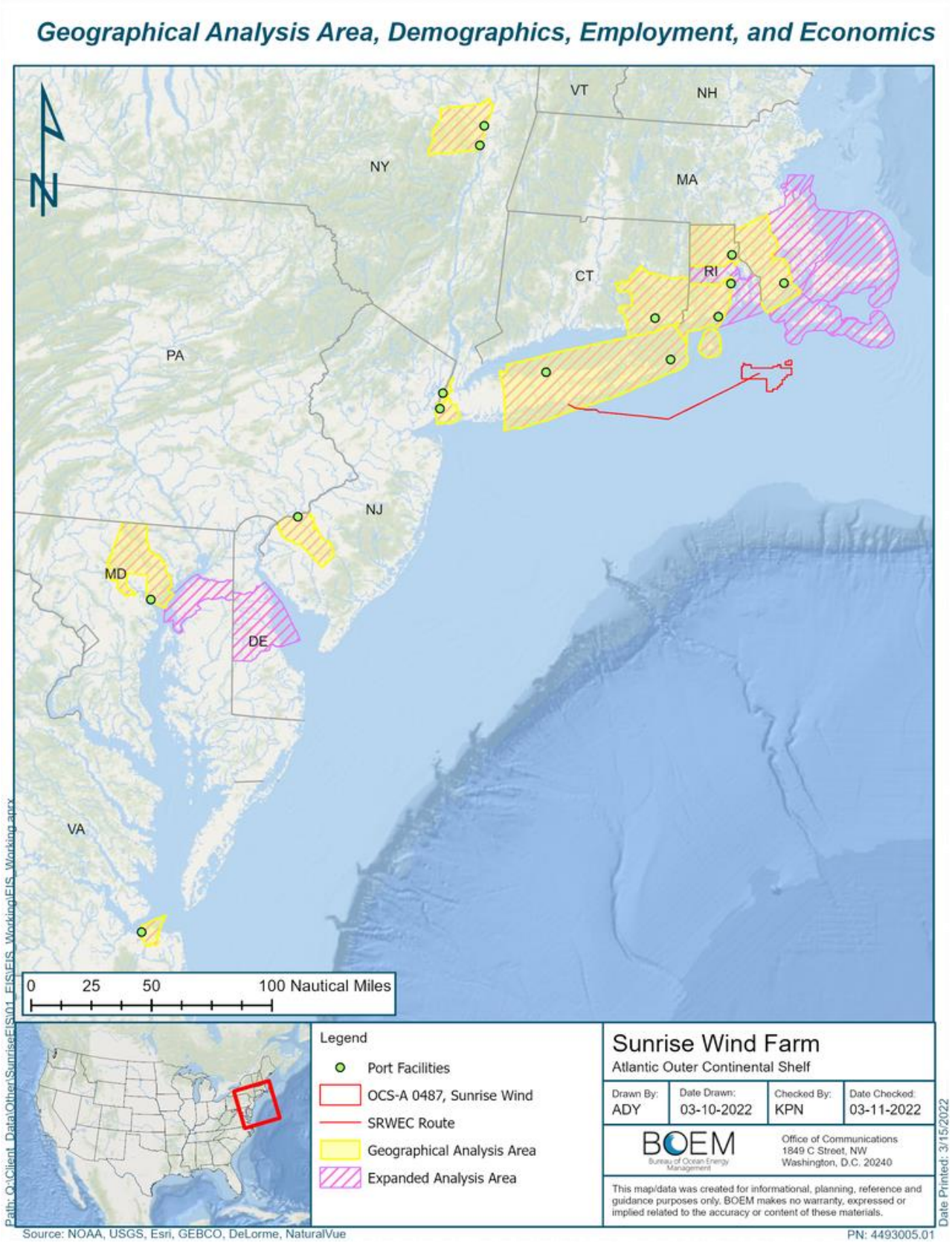

Figure D - 13 Geographic Analysis Area for Demographics, Employment, and Economics

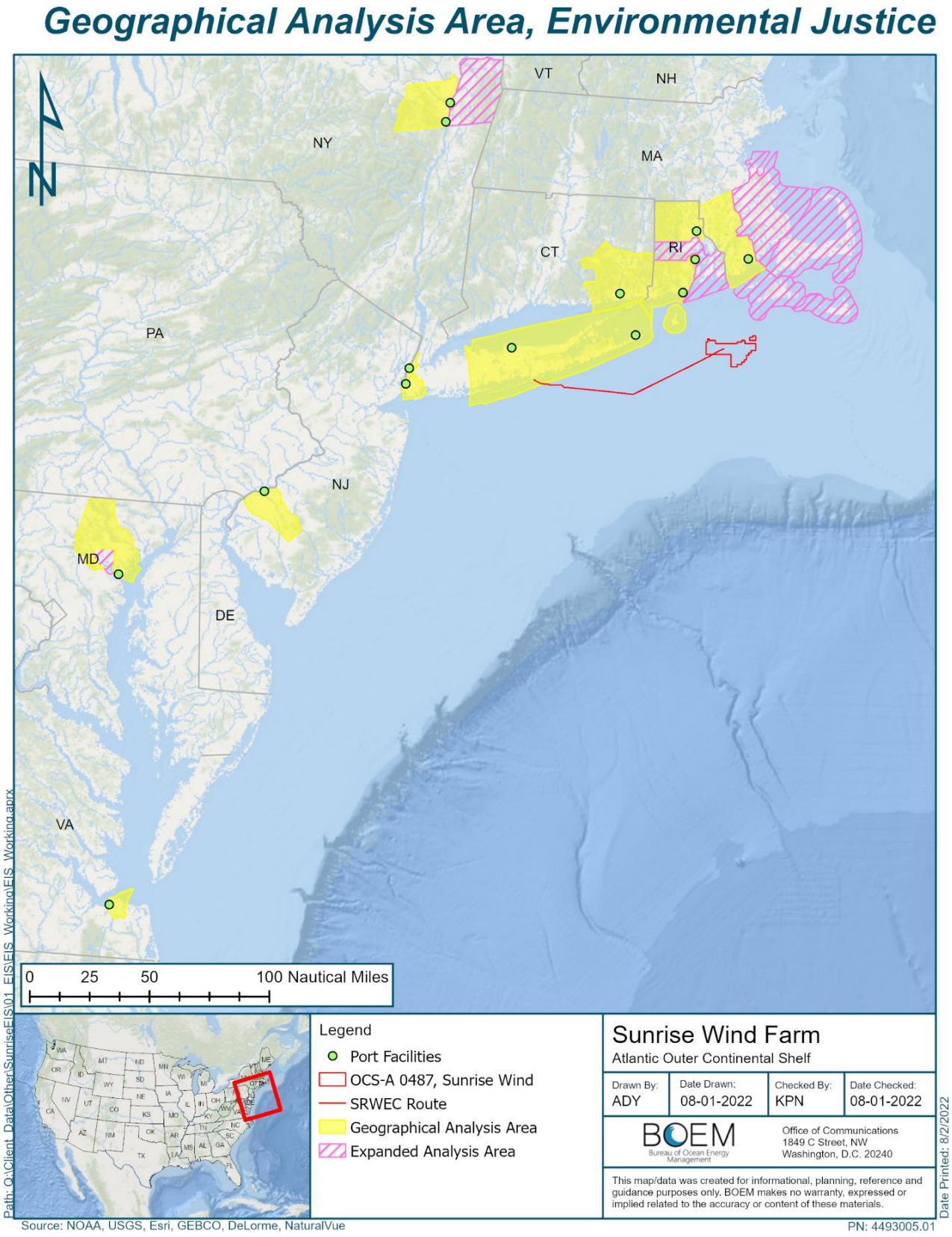

Figure D - 14 Geographic Analysis Area for Environmental Justice

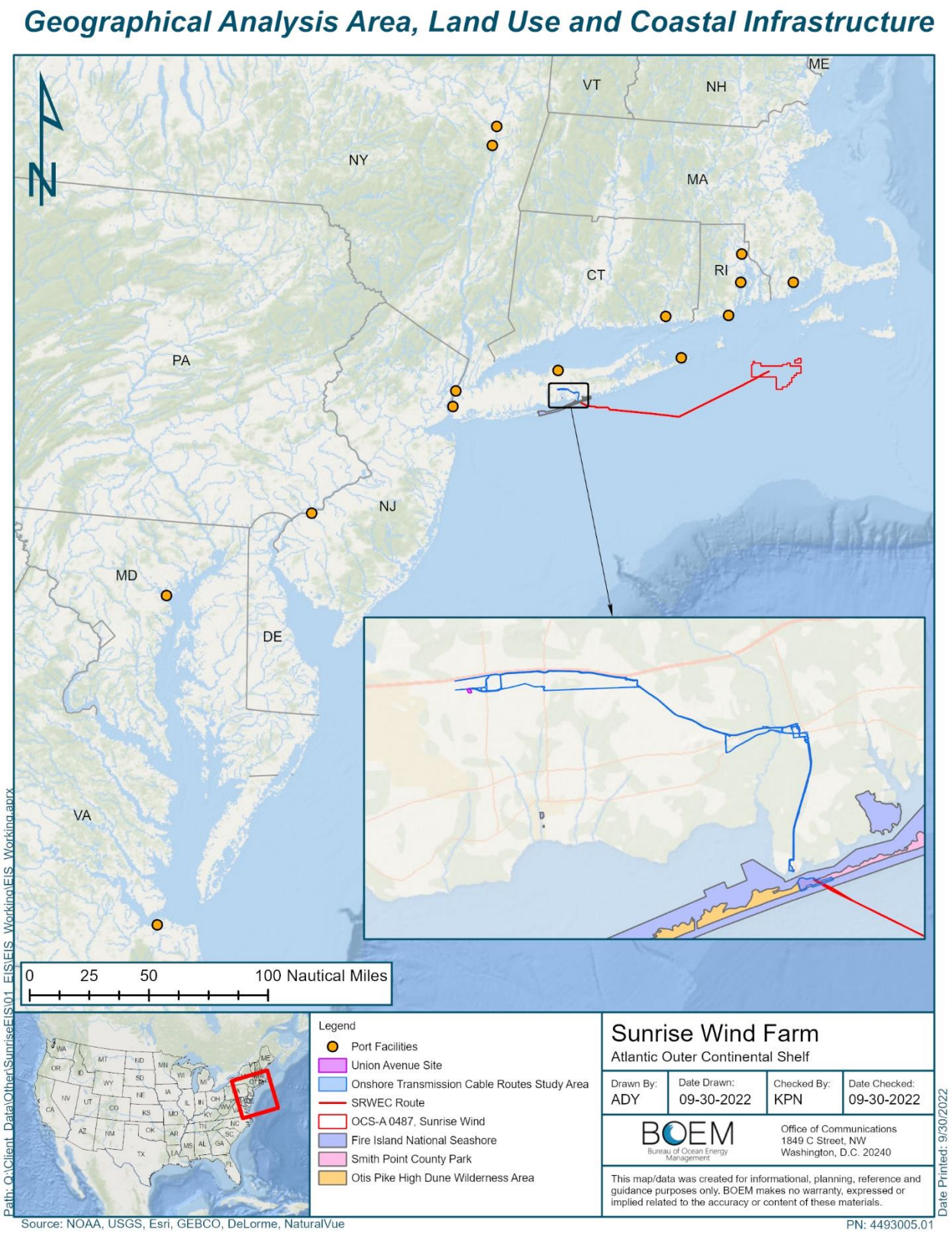

Figure D - 15 Geographic Analysis Area for Land Use and Coastal Infrastructure

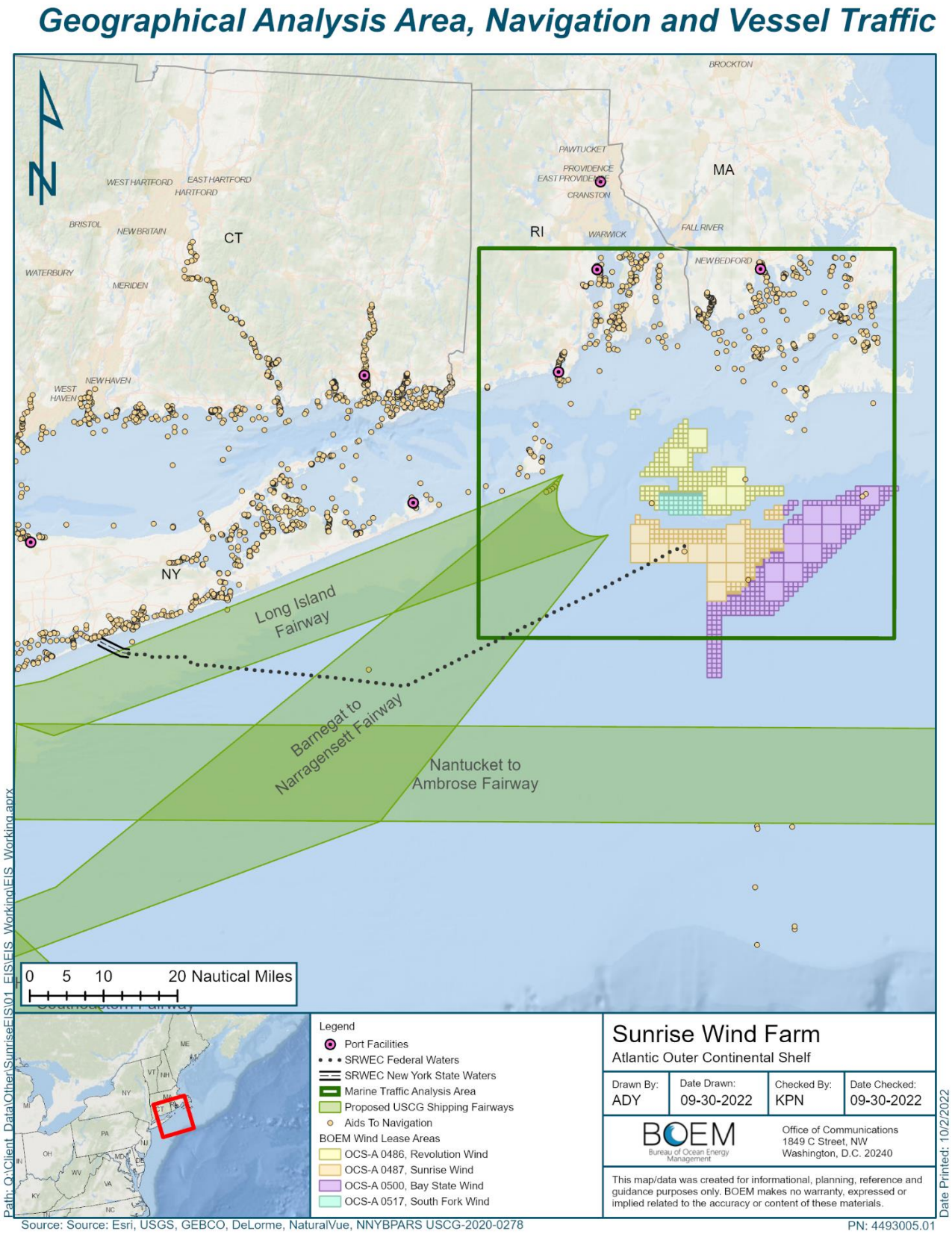

Figure D - 16 Geographic Analysis Area for Navigation and Vessel Traffic

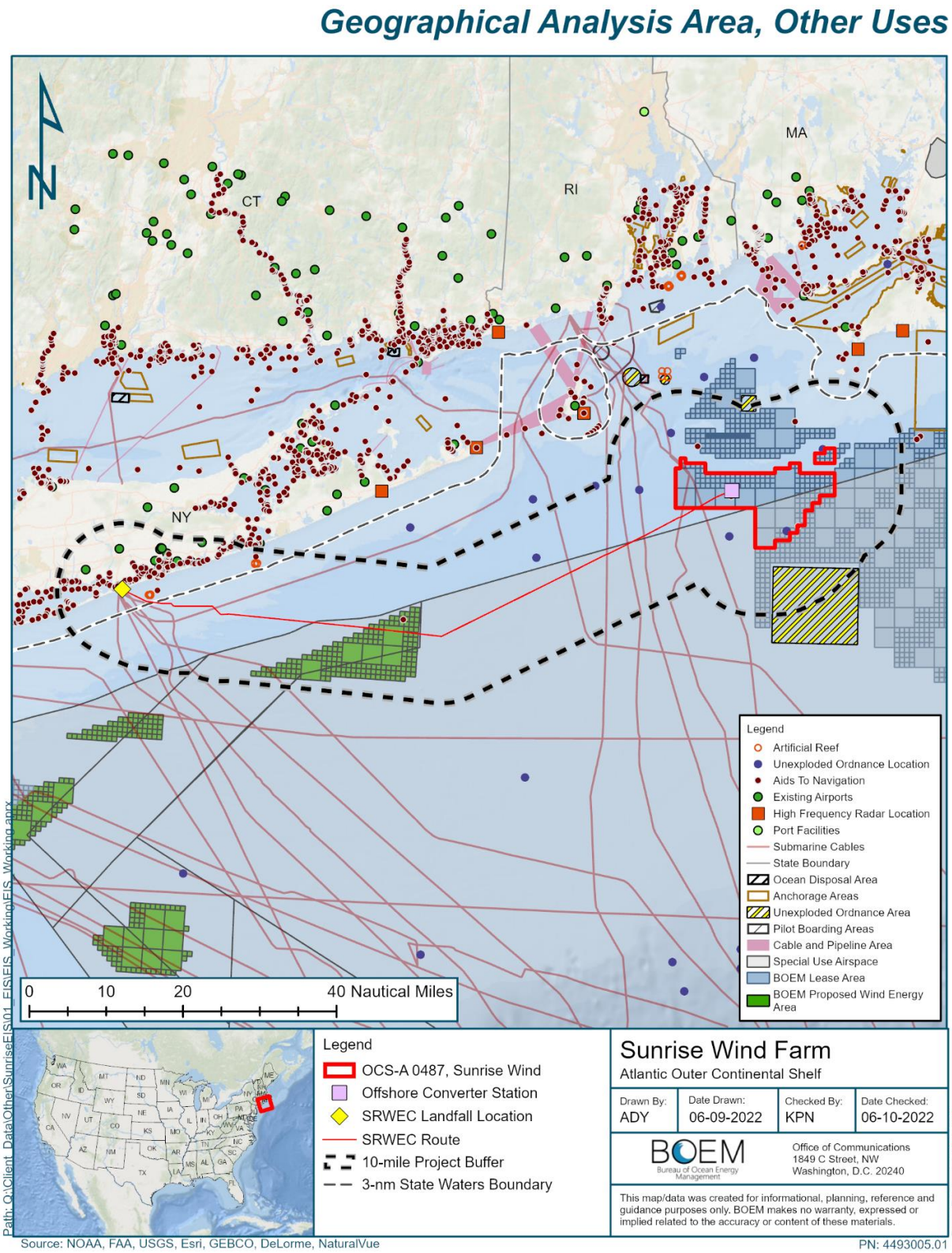

Figure D - 17 Geographic Analysis Area for Other Uses (marine, military use, aviation, offshore energy)

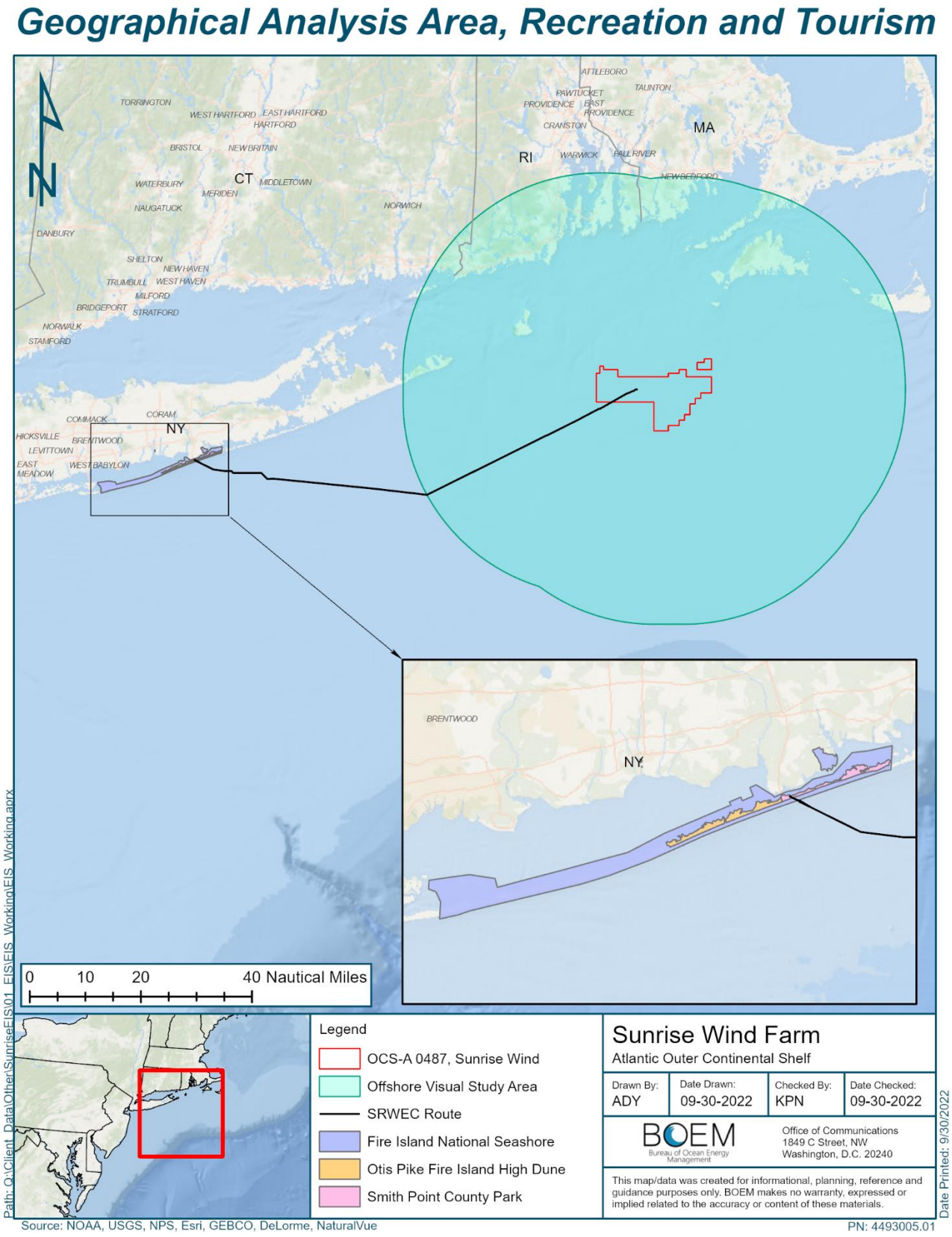

Figure D - 18 Geographic Analysis Area for Recreation and Tourism

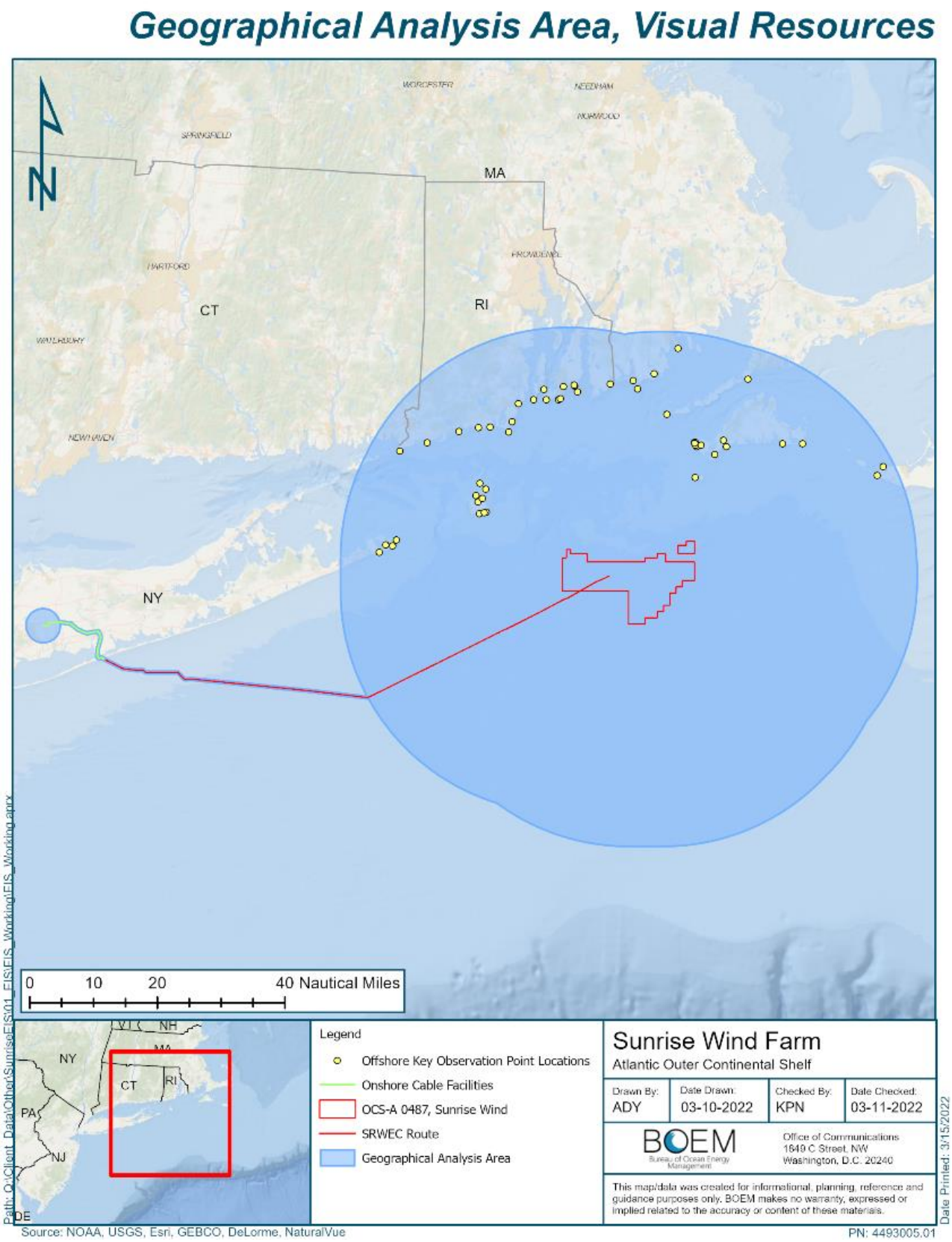

Figure D - 19 Geographic Analysis Area for Scenic and Visual Resources

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