

NEW JERSEY'S AREA OF INTEREST - Wind Power on the OCS

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Office of Science, NJDEP**

**BOEMRE New Jersey Renewable Energy
Task Force Meeting
November 19, 2010**

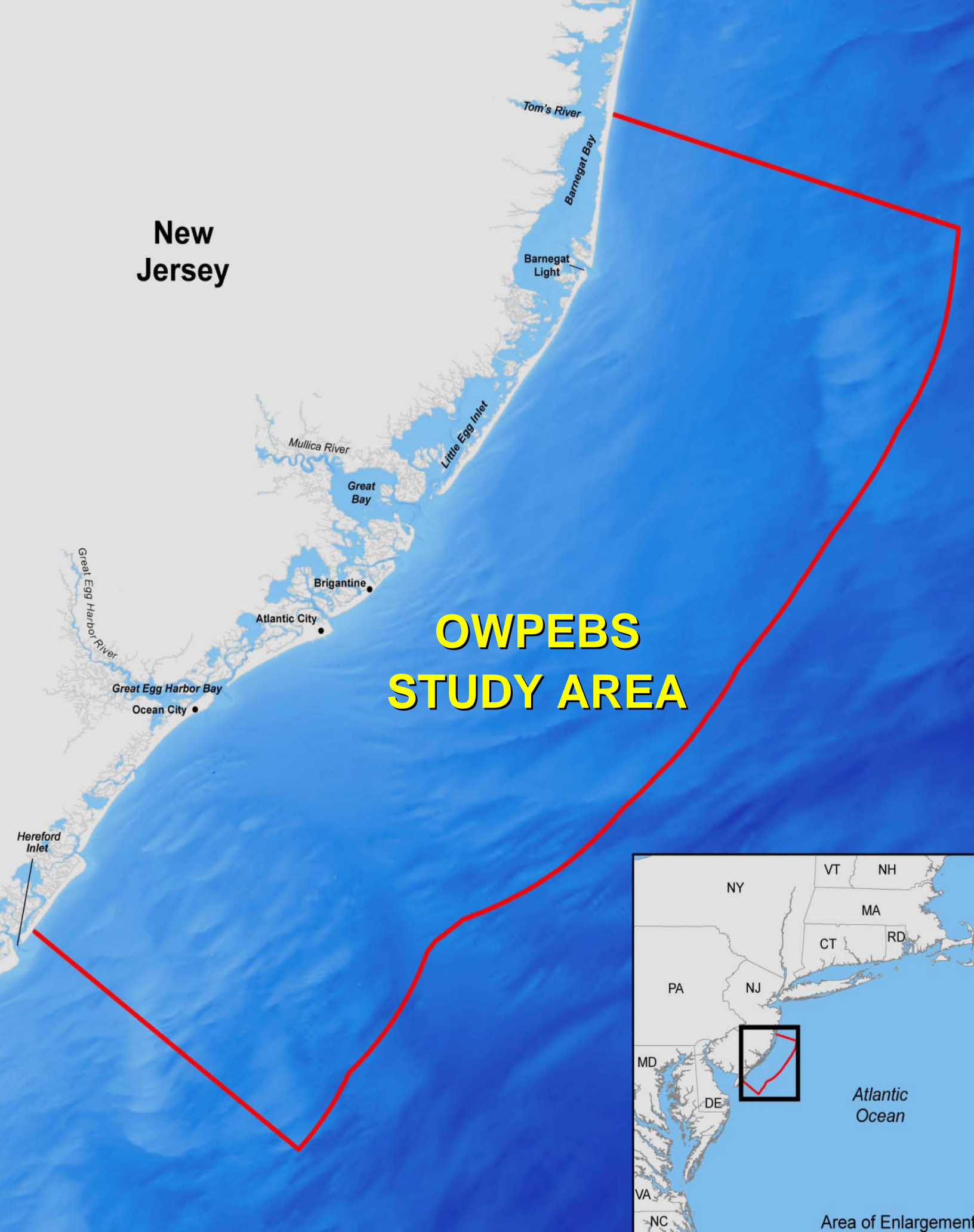
Goals and Objectives:

The 'Area of Interest' describes and delineates the area off the coast of New Jersey, on the Outer Continental Shelf (OCS), that will be eligible for offshore wind leases and possible development. The objectives in defining the area include the following:

- Establish an area off the coast of New Jersey, on the Outer Continental Shelf, adequate in size to meet the goals of 1,100 MW of offshore wind;
- Delineate an area large enough to attract investment in New Jersey's offshore wind resources;
- Encourage and maximize competition in the development of offshore wind resources to reduce costs and ensure a fair price for New Jersey ratepayers;
- Identify ecologically or environmentally sensitive areas based on the ecological baseline assessment data;
- Identify areas of potential conflict due to competing uses.

**New
Jersey**

**OWPEBS
STUDY AREA**



Area of Enlargement

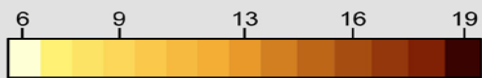
Description of the Area of Interest:

- Located off the coast of New Jersey beginning 7 NM from the shore and extending roughly 23 NM seaward
- Approximately 1,070 sq nm
- Extends ~72 NM along the Federal/State boundary from Seaside Park south to Stone Harbor.
- Excluded from this area are several avoidance zones considered to be ecologically sensitive and which should not be considered for development.
- Ecological sensitivity based on the data and results provided by the NJ OWPEBS.

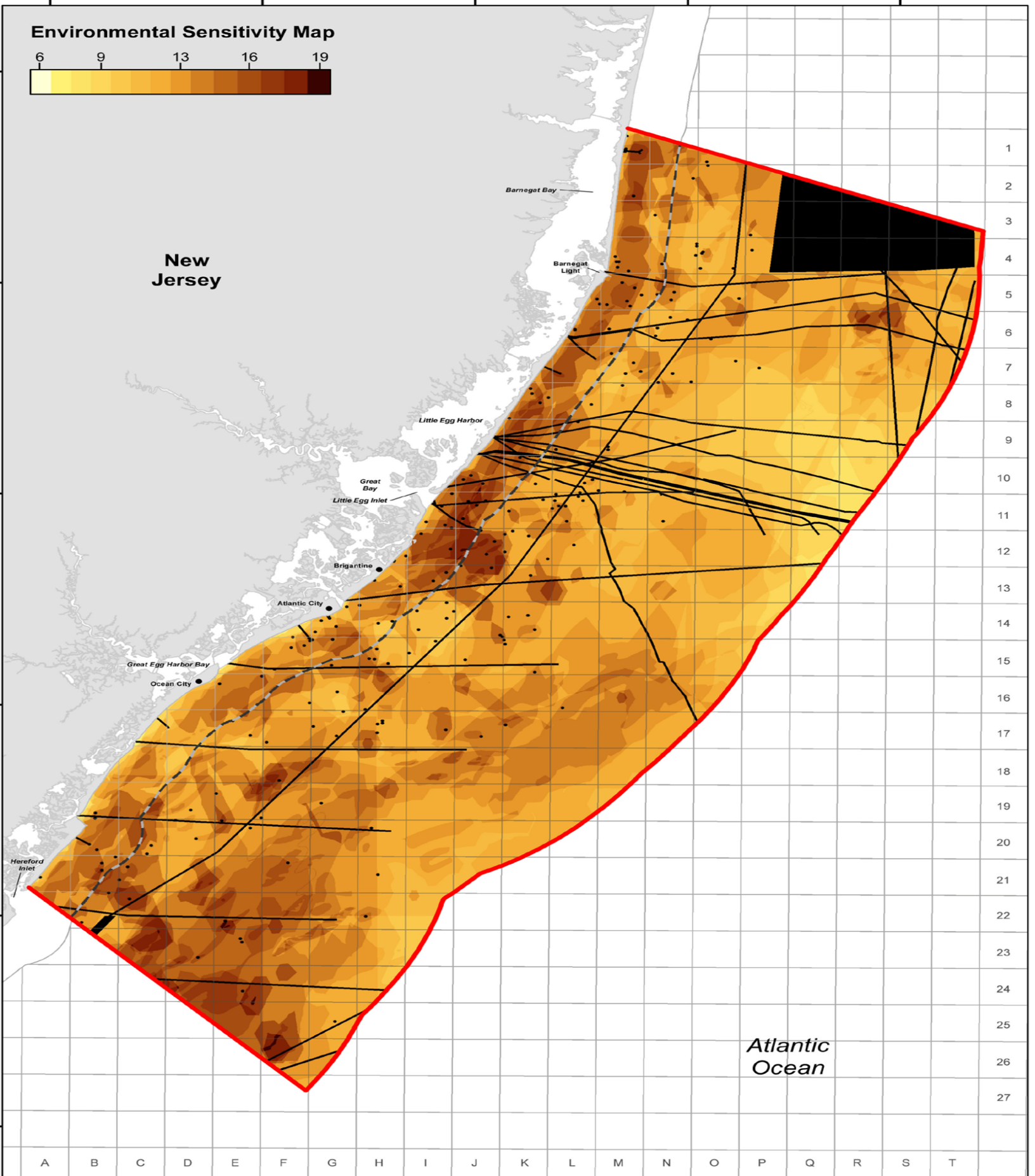
Environmental Sensitivity Map

- Simple weighting of GIS layers by natural & physical resources
- Layers include:
 - Birds (density)
 - Marine Mammals
 - Sea Turtles
 - Prohibited areas (e.g., shipping lanes)
 - Physical features (e.g., artificial reefs)
 - Essential fish habitat

Environmental Sensitivity Map



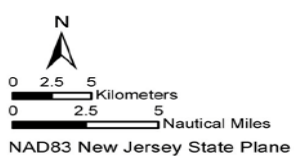
New Jersey



Atlantic Ocean

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Categories/Ranking:

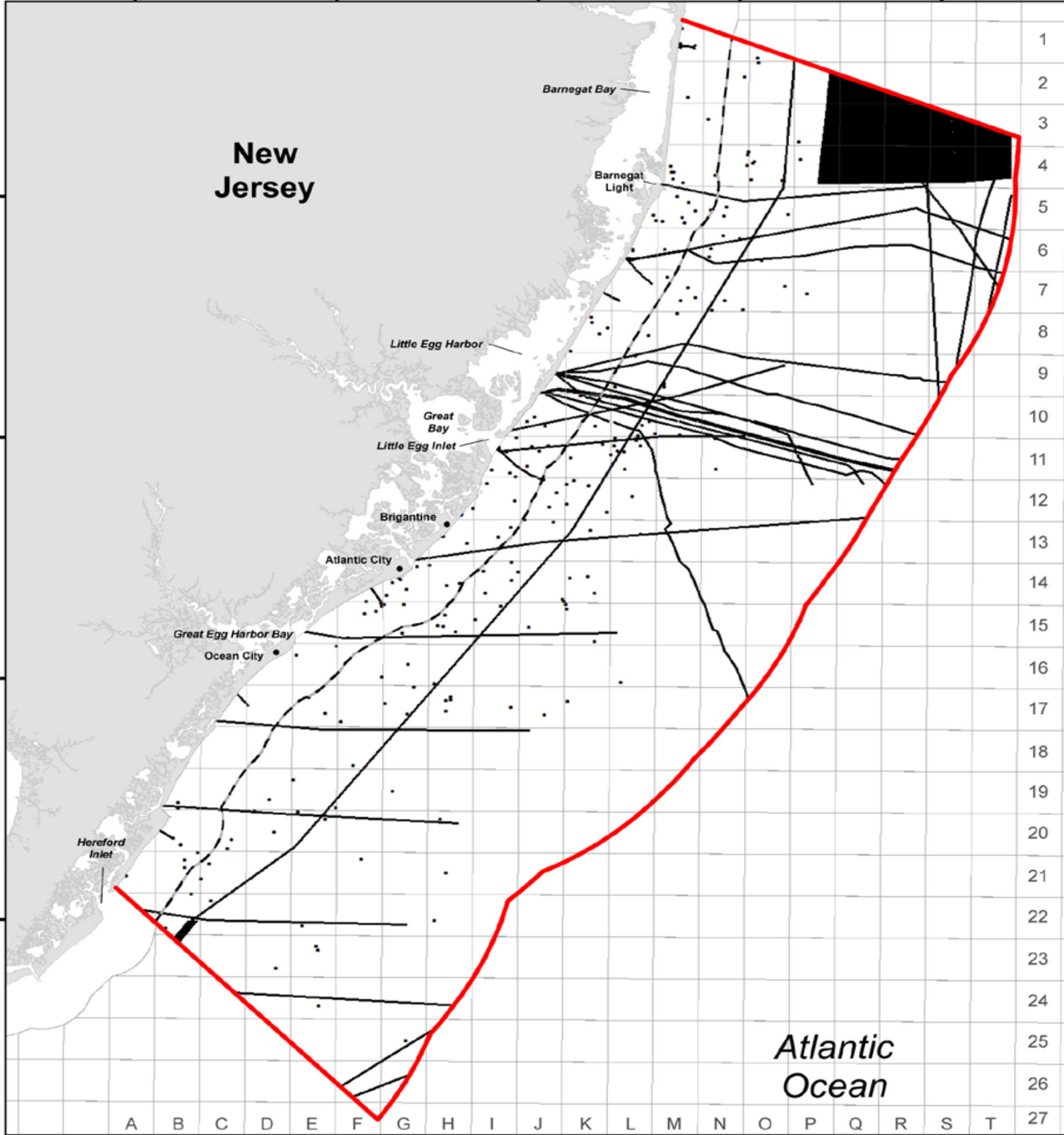
- Artificial Reef Areas = 1
- Commercial Fisheries = 1
- Marine Protected Areas (MPA) = 1
- Recreational Fishing Hotspots/Grounds = 1
- Shoals = 1
- Marine Mammal Density (All Species)**
- 0.00000001 - 0.0162 #/km² = 1
- 0.0163 - 0.1342 #/km² = 2
- 0.1343 - 0.9871 #/km² = 3

- Marine Mammal Density (T and E Species)**
- 0.000001 - 0.000008 #/km² = 1
- 0.000009 - 0.0004 #/km² = 2
- 0.0005 - 0.0165 #/km² = 3
- Sea Turtle (Sightings per km)**
- 0.0039 - 0.0059 #/km = 1
- 0.0060 - 0.0073 #/km = 2
- 0.0074 - 0.0261 #/km = 3

- Avian Kernel Density Total Birds (All Behavior)**
- 0.01-50 #/km² = 2
- 51-100 #/km² = 4
- 101+ #/km² = 6
- # of Essential Fish Habitat Designations (All Species/Lifestages)**
- 1-12 = 1
- 13-24 = 2
- 25-38 = 3

Prohibited Development Areas

- Obstructions/Shipwrecks
- Pipelines/Shipping Lanes/ Tug Barge Transit Route/ Utility Cables
- Traffic Separation Zone
- Study Area
- Federal/State Boundary
- MMS Lease Blocks
- State Water Blocks



**New
Jersey**

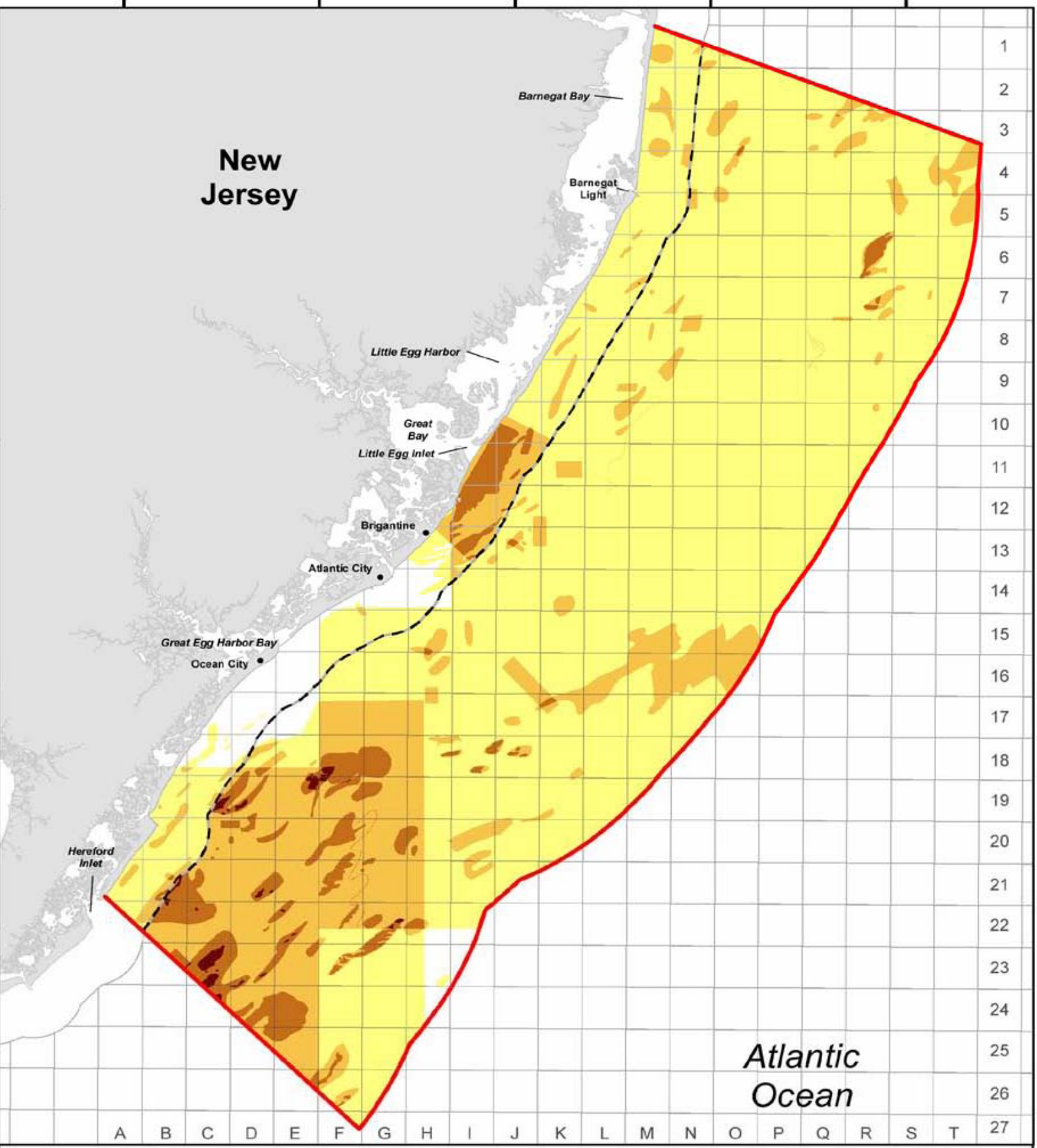
*Atlantic
Ocean*



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New Jersey

Barnegat Bay

Barnegat Light

Little Egg Harbor

Great Bay

Little Egg Inlet

Brigantine

Atlantic City

Great Egg Harbor Bay

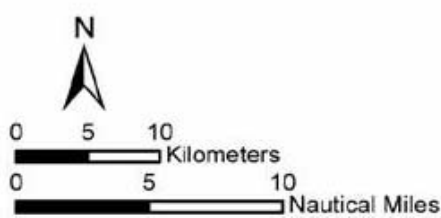
Ocean City

Hereford Inlet

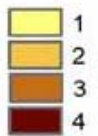
Atlantic Ocean

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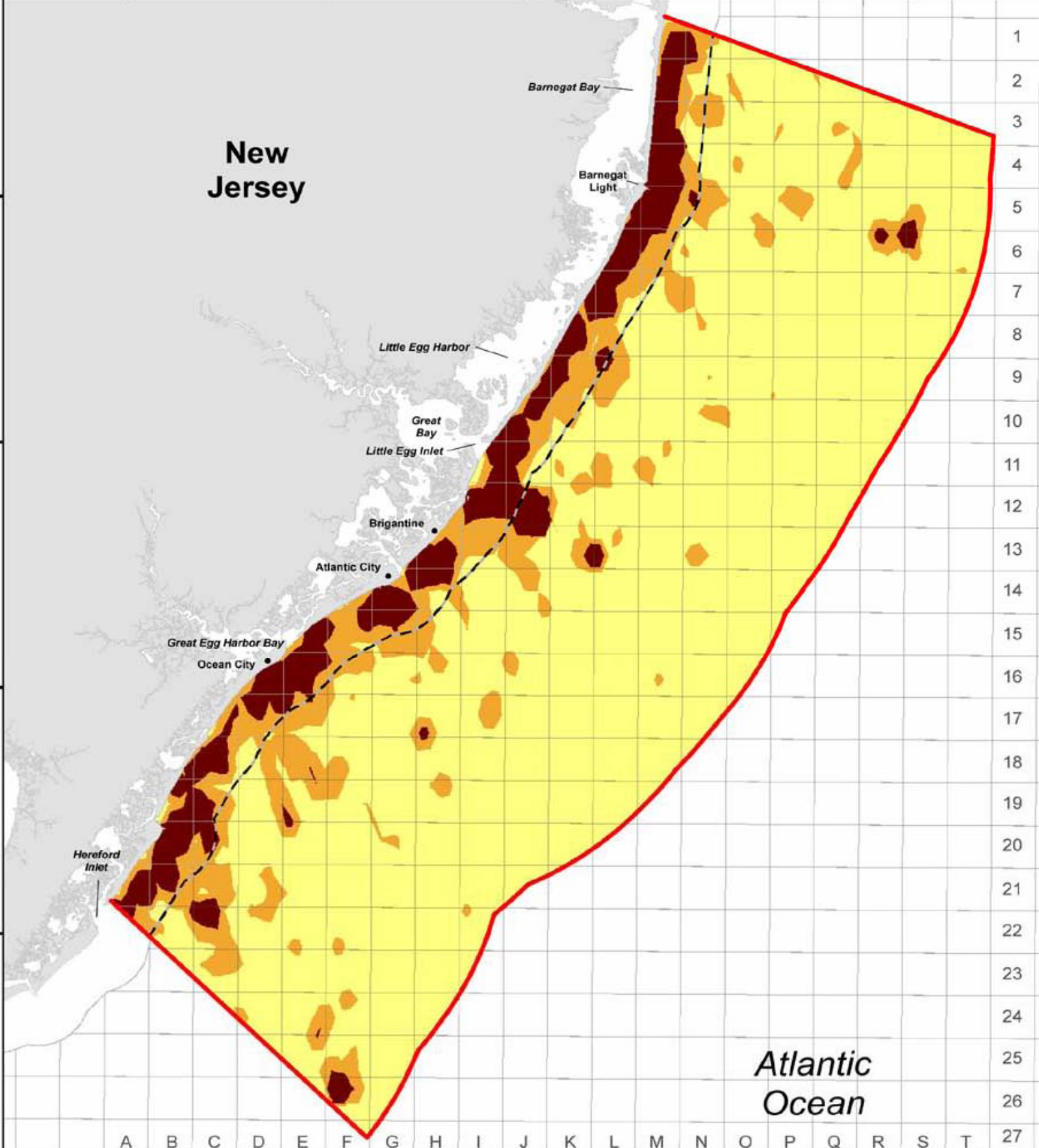
Environmental Sensitivity



Categories:

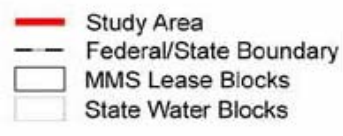
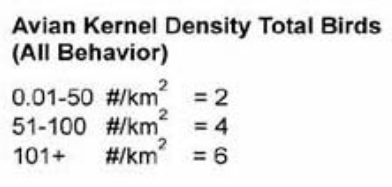
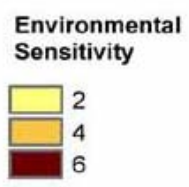
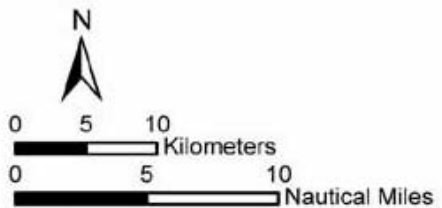
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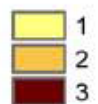
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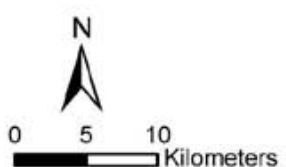
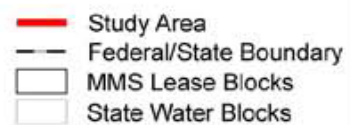
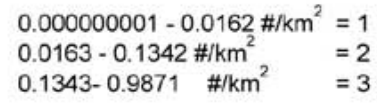
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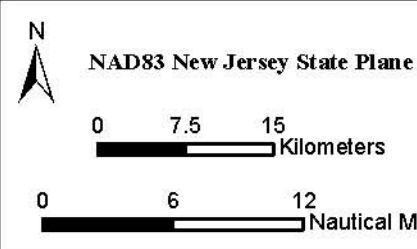
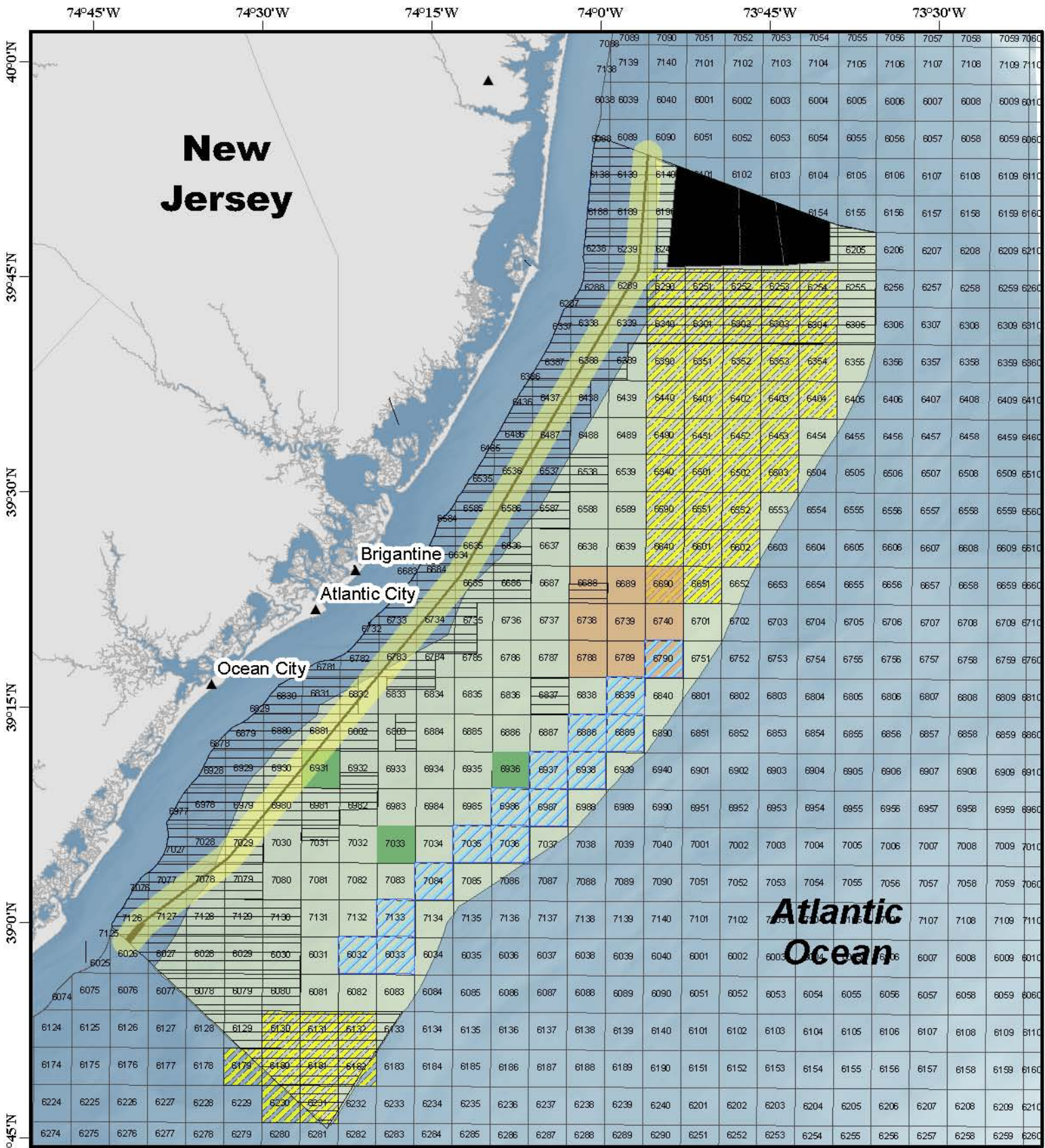


Marine Mammal Density (All Species)



NJ OSW Area of Interest – Avoidance Zones

- **Avoidance Zones**
 - = Environmentally Sensitive Areas;**
 - = Not listed in RFI as available blocks.**
- **Northern portion of the study area** which includes a major shipping lane, telecommunications cables, high bird densities (number of shoals).
- **Southernmost section of the study area** where a large number of shoals and biological resources are concentrated (e.g. birds, marine mammals, sea turtles), including MPAs and Essential Fish Habitat (EFH).
- **State Boundary to 7 NM Line** - avian density markedly decreased moving from inshore to offshore, with a steep decline observed at approximately 7 NM. As well as numerous shipwrecks, reefs, and shoals.



- Legend**
- DoD_CAT3
 - Buffer_of_Tug_Barge_Transit_Route
 - Avoidance Zones
 - Offshore MW LLC Lease Request Area
 - USCG_Recommended_Exclusions
 - Federal State Boundary
 - Tug Barge Transit Route
 - Interim Policy Leases
 - USCG Traffic Separation Scheme
 - NJ Proposed RFI Area

Categories and Description of Environmentally Sensitive Areas:

- **No Build Areas** - Shipping lanes, traffic separation zones, pipelines and cables, artificial reefs, and shipwrecks.
- **Shoals** – Function as feeding grounds and nurseries for various pelagic and bottom-dwelling species, as well as serve as fishing/feeding hotspots for recreational and commercial fishermen, birds, sea turtles and marine mammals.
- **High Avian Densities** – Mostly concentrated within state waters along the coast, however some hotspots found offshore, usually associated with shoals or other unique bottom features, etc.
- **Distance from Shore** – Results of the OWPEBS found that birds, certain marine mammals and other resources were found in higher densities closer to shore. As previously stated, bird activity begins to decrease beyond 7 NM from the coast.

Categories and Description of Environmentally Sensitive Areas:

- **Fishing Hotspots** – Although usually associated with shoals, other natural and artificial bottom features can contribute to their productivity.
- **Marine Mammals and Sea Turtles** – As shown in the OWPEBS, densities are roughly evenly distributed throughout the study area, and low in number (with the exception of dolphins). However, marine mammal and sea turtle densities are often found to be higher near underwater features such as shoals and ridges.
- **Essential Fish Habitat (EFH)** – Occur for numerous fish species, known to use the area during all or some life stages. In some cases, EFHs in the Study Area overlap (especially in the South).

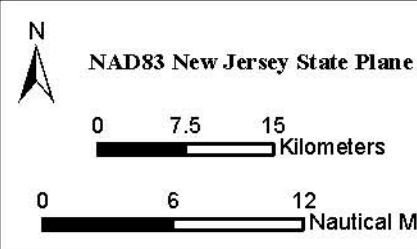
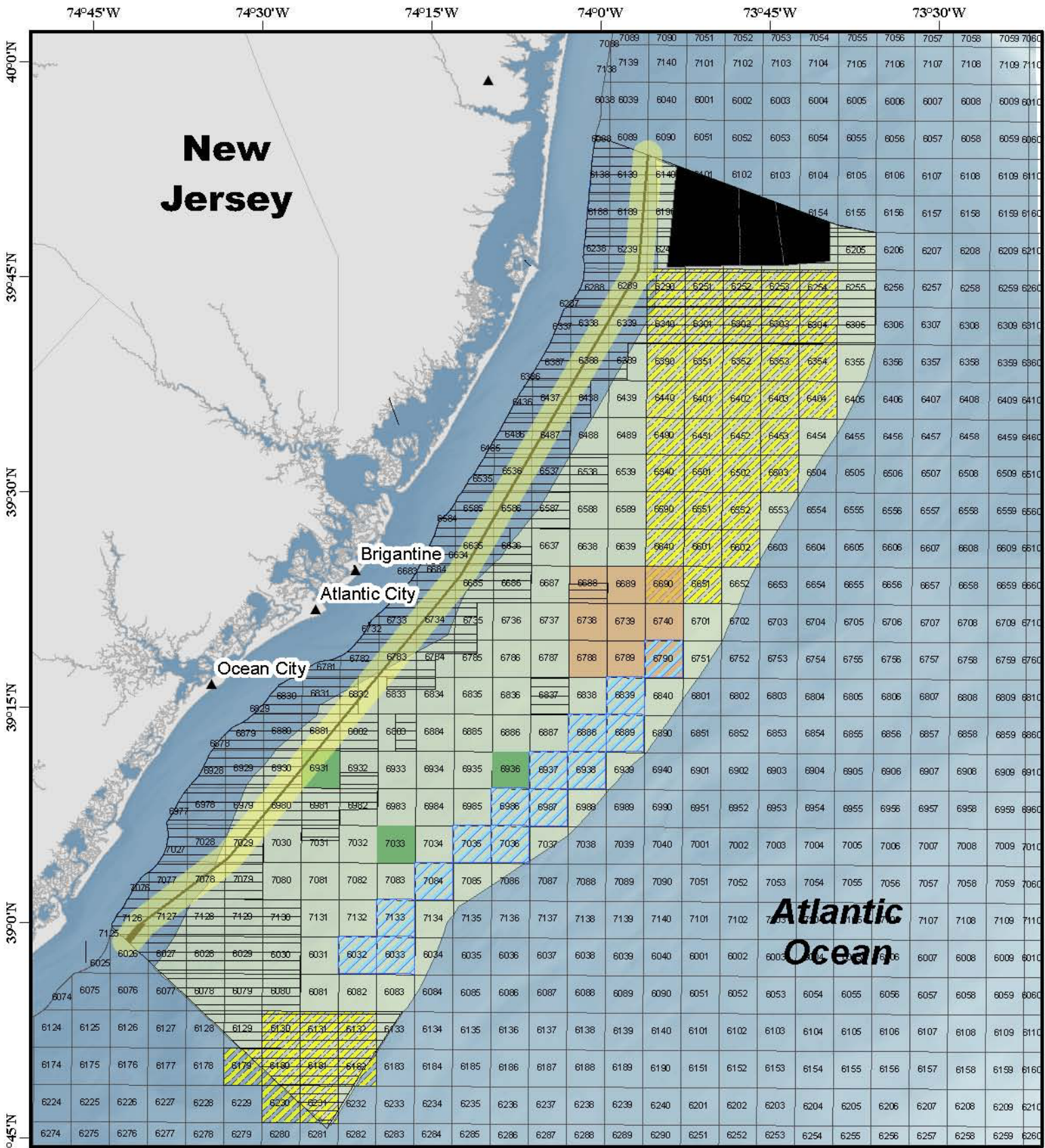
NJ Draft List of Lease Blocks within the RFI available for Development

6389 (partial), 6355, 6438 (partial), 6439, 6405, 6488, 6489, 6539, 6504, 6588, 6589, 6553, 6636 (partial), 6637, 6638, 6639, 6603, 6687, 6688, 6689, 6652, 6653, 6735 (partial), 6736, 6737, 6738, 6739, 6740, 6701, 6702, 6784, 6785, 6786, 6787, 6788 (partial), 6789, 6751, 6832 (partial), 6833 (partial), 6834 (partial), 6835, 6836, 6838, 6840, 6801, 6883 (partial), 6884, 6885, 6886, 6887, 6890, 6931, 6932 (partial), 6933, 6934, 6935, 6936, 6939, 6982 (partial), 6983, 6984, 6985, 6988, 7030, 7031 (partial), 7032, 7033, 7034, 7037, 7038, 7080, 7081, 7082, 7083, 7085, 7086, 7131, 7132, 7134, 7135, 6031, 6034, 6081, 6082, 6083, 6084

Areas included by New Jersey but excluded by others:

DOD – 6790, 6839, 6937, 6938, 6888, 6889, 6937, 6938, 6986, 6987, 7035, 7036, 7084, 7133, 6032, 6033

U. S. Coast Guard – 6390, 6351, 6352, 6353, 6354, 6440, 6401, 6402, 6403, 6404, 6490, 6451, 6452, 6453, 6540, 6501, 6502, 6503, 6590, 6551, 6552, 6640, 6601, 6602, 6690, 6651



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