

Environmental Sensitivity Index Maps

A Guide to Coastal Resources at Risk to Spilled Oil

New York/New Jersey Metro, Hudson River and South Long Island: Volume 3



Office of Response and Restoration

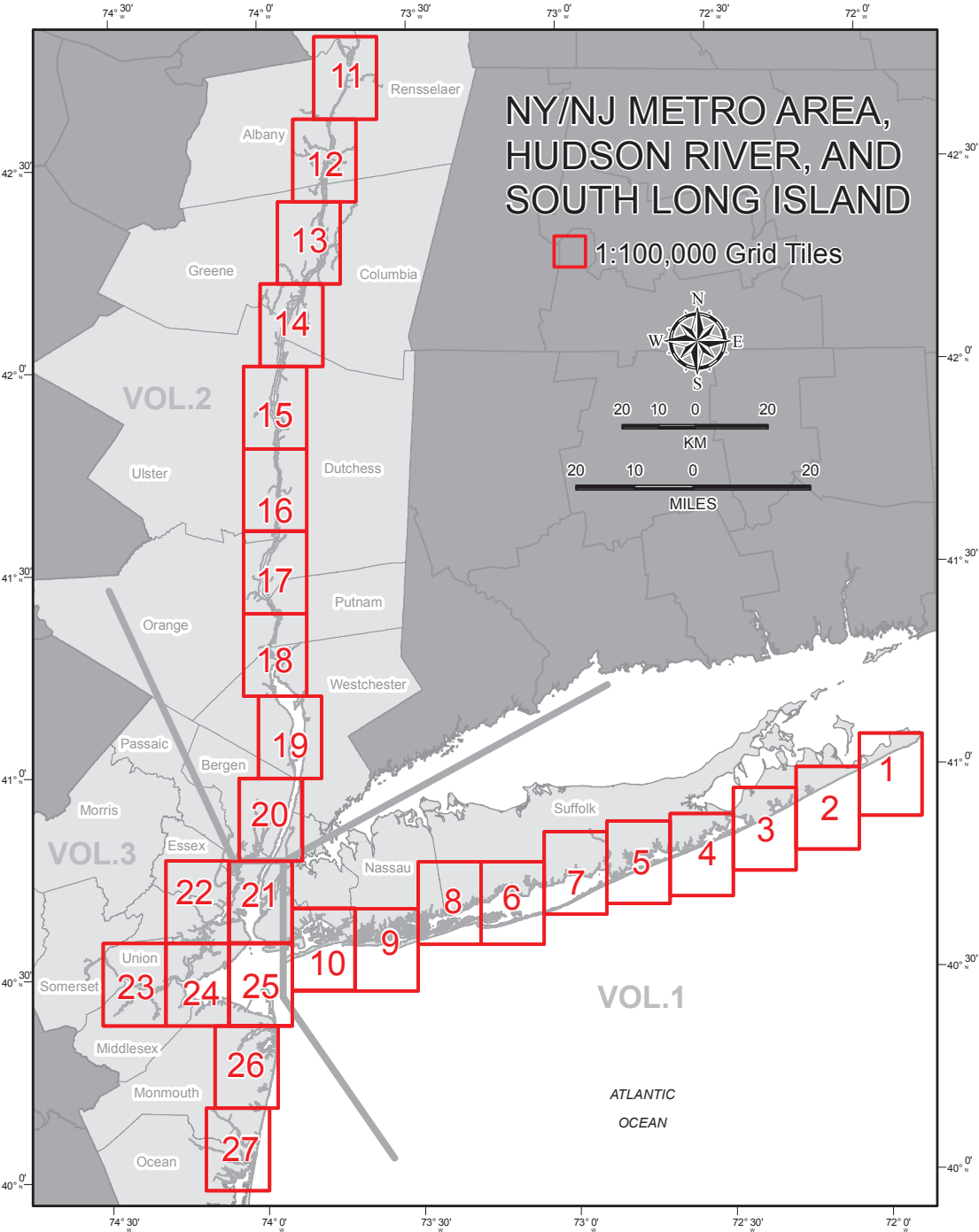
February 2016

NOAA Environmental Sensitivity Index Maps

A Guide to Coastal Resources at Risk to Spilled Oil

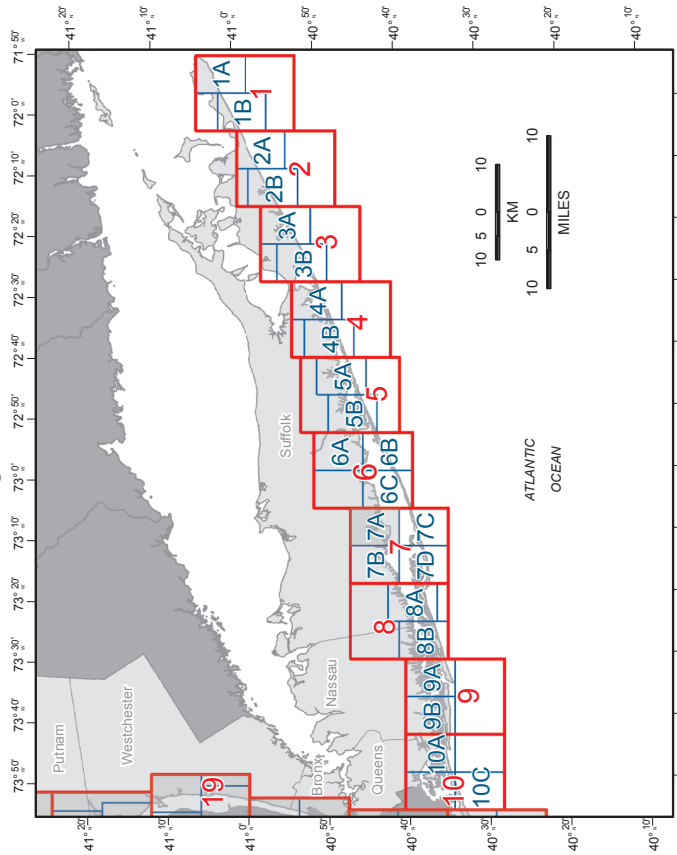
New York/New Jersey

1:100,000

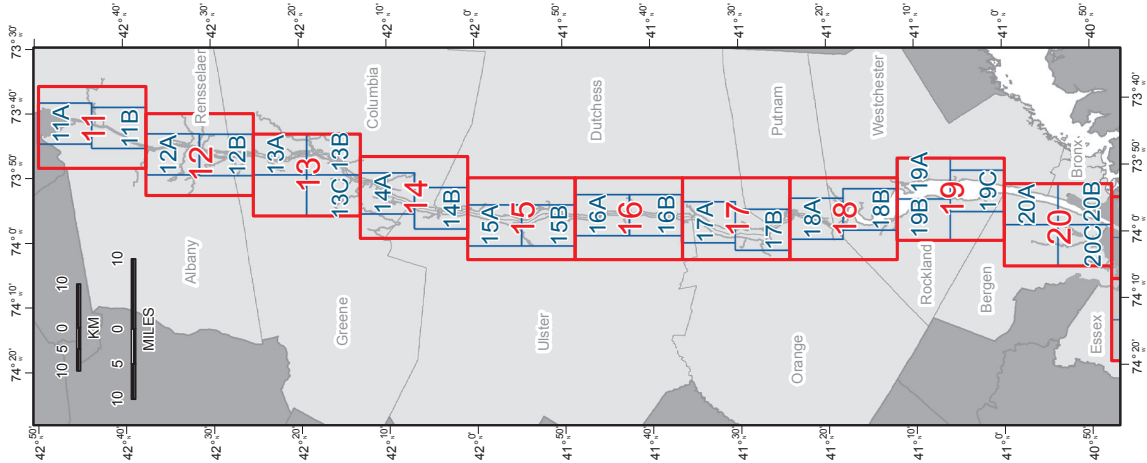


SOUTH LONG ISLAND, HUDSON RIVER, AND NY/NJ METRO AREA

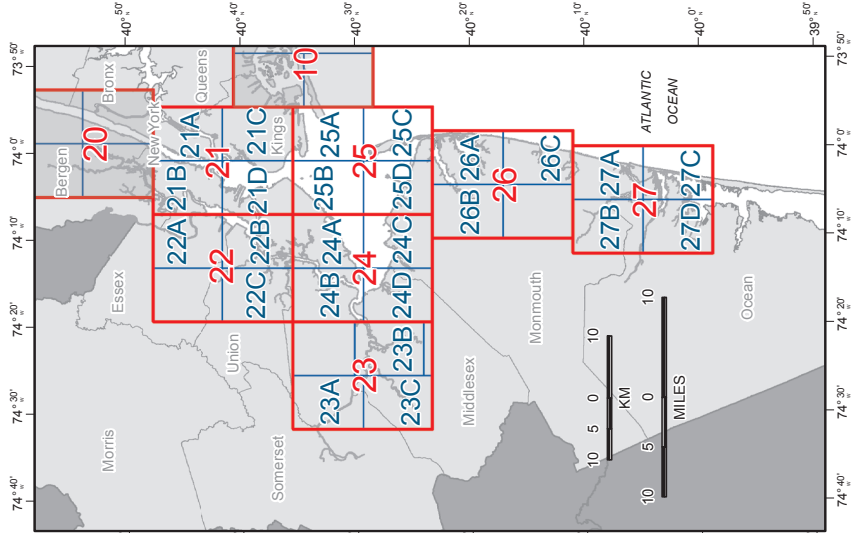
South Long Island: Volume 1



Hudson River: Volume 2



NY/NJ Metro Area: Volume 3



- 1:100,000 Grid Tiles
- 1:50,000 Grid Tiles

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ENVIRONMENTAL SENSITIVITY INDEX: NEW YORK/NEW JERSEY METRO, HUDSON RIVER, AND SOUTH LONG ISLAND

INTRODUCTION

This Environmental Sensitivity Index (ESI) atlas was developed for the Hudson River, New York/New Jersey Metro area and the southern Long Island, New York. The atlas covers the entire water body and surrounding riverine areas of the tidally influenced reach of the Hudson River, the New York/New Jersey Metro region, northern New Jersey as far south as Silver Bay, and the southern section of Long Island. The study area includes the sections of Metedeconk, Manasquan, Shark, Shrewsbury, Navesink, Raritan, Passiac and Hackensack Rivers in New Jersey as well as Sandy Hook Bay and the New Jersey side of the Hudson River. In addition to the Hudson River, major New York waterbodies captured in part within this study area include New York Harbor, Jamaica Bay, Jones Bay, South Oyster Bay, Great South Bay, Moriches Bay, Shinnecock Bay, and Mecox Bay. The inland extent of the study area includes lands and fresh waters to five nautical miles from the shoreline of tidal waters. The ESI atlas is a compilation of information from three main categories: shoreline habitats, sensitive biological resources, and human-use resources. Though the data will be useful for many shoreline applications, the goal of the ESI data is to present a concise summary of resources that may be particularly vulnerable to spilled oil. The intent of the data should caveat other uses. As an example, the ESI is not intended to present a catalog or comprehensive listing of species present in an area, rather the focus is on species particularly sensitive to oiling and life stages where vulnerability may increase.

SHORELINE HABITAT MAPPING

The shoreline and classifications were fully updated using the following sources and methods. The shoreline and intertidal habitats were delineated using a mapped sequence of Light Detection and Ranging (LiDAR) and high resolution digital orthophotography datasets. The LiDAR data was acquired in 2014 as part of a post-Super Storm Sandy contract for the United States Geological Survey (USGS). This task required the LiDAR data be collected at a nominal pulse spacing (NPS) of 0.7 meters. The window for tidally impacted waters within the area of interest was mean low water (MLW) +/- 2 hours exclusive of neap tide. Seven (7) missions were flown between April 3, 2014 and April 21, 2014, as part of the USGS project.

The base shoreline was compiled at Mean Higher High Water (MHHW) first by LiDAR extraction, then refined within a Geographic Information System (GIS) utilizing high resolution digital orthophotos. After the shoreline was delineated, digital orthoimagery from various sources was used to classify shoreline segments using the nationally standardized ESI scale (see below and next page). Imagery from the New York State Office of Information Technology Service (2013 and 2011), the New Jersey Office of Information Technology (2013), and various imagery sources for Google Earth and Bing Maps (2014) were used during the classification phase. Shoreline features of 10 meters (m) or greater in length were classified. In addition, wetland polygon datasets originally created by the United States Fish and Wildlife Service National Wetlands Inventory (NWI) were modified and updated to be used in conjunction with the ESI shoreline. Where necessary, multiple types were described for each shoreline segment.

The ESI shoreline classification and ranking scale has been used to assess vulnerability of shoreline to spilled oil since the mid-1970s. Rankings range from 1 – least vulnerable, to 10 – most vulnerable, with a variety of qualifiers unique to the geographic region. The scale incorporates the following considerations:

- | | |
|--|--|
| 1) Shoreline type (substrate, grain size, tidal elevation, origin) | 3) Biological productivity and sensitivity |
| 2) Exposure to wave and tidal energy | 4) Ease of cleanup |

Prediction of the behavior and persistence of oil in intertidal habitats is based on an understanding of the dynamics of the coastal environments, not just the substrate type and grain size. The intensity of energy expended upon a shoreline by wave action, tidal currents, and river currents directly affects the persistence of stranded oil. The need for shoreline cleanup activities is determined, in part, by the slowness of natural processes in removal of oil stranded on the shoreline. The potential for biological injury and ease of cleanup of spilled oil are also important factors in the ESI shoreline ranking. Thus, shorelines exposed to high levels of physical energy, such as wave action and tidal currents, and low biological activity rank low on the scale, whereas sheltered shorelines with associated high biological activity have the highest ranking. The shoreline types delineated for metropolitan New York/New Jersey, the Hudson River, and South Long Island presented in order of increasing sensitivity to spilled oil, are listed below.

- | | |
|--|--|
| 1A) Exposed Rocky Shores | 7) Exposed Tidal Flats |
| 1B) Exposed, Solid Man-made Structures | 8A) Sheltered Scarps in Clay, or Mud |
| 2A) Exposed, Wave-cut Platforms in Clay | 8B) Sheltered, Solid Man-made Structures |
| 2B) Exposed Scarps and Steep Slopes in Mud | 8C) Sheltered Riprap |
| 3A) Fine- to Medium-grained Sand Beaches | 9A) Sheltered Tidal Flats |
| 3B) Scarps and Steep Slopes in Sand | 10A) Salt- and Brackish-water Marshes |
| 4) Coarse-grained Sand Beaches | 9B) Vegetated Low Banks |
| 5) Mixed Sand and Gravel Beaches | 10B) Freshwater Marshes |
| 6A) Gravel Beaches | 10C) Swamps |
| 6B) Riprap | 10D) Scrub-Shrub Wetlands |

For each of these shoreline types, a photo and description of the physical attributes, predicted oil behavior, and response considerations are included at the end of the introductory pages.

SENSITIVE BIOLOGICAL RESOURCES

Biological information presented in this atlas was collected, compiled, and reviewed with the assistance of biologists and resource managers from the following agencies/organizations:

- New York State Department of Environmental Conservation (NYSDEC)
 - Division of Fish, Wildlife and Marine Resources (DFWMR)
 - Bureau of Fisheries
 - Bureau of Marine Resources
 - Bureau of Wildlife
 - New York Natural Heritage Program
 - Hudson River Estuary Program

- Hudson River National Estuarine Research Reserve (HRNEER)
- New York State Department of State (NYSDOS), Office of Planning and Development, Division of Coastal Resources
- New York Audubon Society
- New York City Audubon Society
- New Jersey Audubon Society
- U.S. Fish and Wildlife Service (USFWS)
 - Long Island National Wildlife Refuge Complex
 - Migratory Bird Program
- New Jersey Department of Environmental Protection (NJDEP)
 - Division of Fish and Wildlife (DFW)
 - Bureau of Freshwater Fisheries
 - Bureau of Shellfisheries
 - Bureau of Marine Fisheries
 - Endangered and Nongame Species Program
 - Waterfowl Ecology and Management Program
 - Division of Parks and Forestry
 - New Jersey Natural Heritage Program
- Coastal Research and Education Society of Long Island (CRESLI)
- Bayshore Regional Watershed Council
- Gotham Whale
- NatureServe
- Virginia Institute of Marine Science (VIMS) Multispecies Research Group
- National Park Service (NPS)
 - Fire Island National Seashore
 - Gateway National Recreation Area
 - Natural Resource Program Center
 - Cape Cod National Seashore – Robert Cook

The above agencies provided the majority of information included in the atlas. Other participating agencies will be cited throughout the atlas and in the metadata accompanying the digital product.

The biological resources shown in this atlas were extracted from the ESI GIS data compiled for this region. The extracted features were mapped at scale of 1:50,000 and appear on the maps referenced by a combination of number and letter. For example, Map 1B will show the biological features in conjunction with the ESI shoreline. The biology maps on these maps is “layered” in the PDF maps. This allows the user to turn off the biological features to more clearly see the underlying shoreline and habitat polygons.

The biological resources shown in this atlas were extracted from the ESI GIS data compiled for this region. The extracted features were mapped at scale of 1:50,000 and appear on the maps referenced by a combination of number and letter. For example, Map 1B will show the biological features in conjunction with the ESI shoreline. The biology maps on these maps is “layered” in the PDF maps. This allows the user to turn off the biological features to more clearly see the underlying shoreline and habitat polygons

The data published date appearing at the bottom of the maps and on the cover page reflect when the data collection and compilation was completed. This atlas represents those data and was published February 2016

KEY BIOLOGICAL FEATURES ON ESI MAPS

- 1) Occurrences of animal and plant species that are at risk to spilled oil or may be impacted during a spill response are represented in the database by polygons, points, and lines.
- 2) To avoid clutter, the front of the map features occurrences that cover less than 10 kilometers of the map extent. A Map ID is associated with each of these polygonal, linear or point features.
- 3) Each map includes a tabular report summarizing the species found in the area. Features that are shown on the map are referenced by their Map ID. Features that cover more than 10 kilometers are presented in the report as Widespread in Mapped Area. Species occurrences that appear in the database as General Distribution are listed in a third category, Also Present in Mapped Area. To fully understand the diversity of species present, ALL sections of the map report should be reviewed.
- 4) Associated with each species in the table is the state (S) and federal (F) protected status as threatened (T) or endangered (E), as well as concentration, seasonality, and life-history information. Federal listings were provided by USFWS. State listings were provided by NatureServe.
- 5) The table includes a Mapping Qualifier with each species record (see table of mapping qualifiers and guidelines below). The mapping qualifier should help users understand particular vulnerabilities associated with the map data.
- 6) Feature level source information is included in the GIS database used to create these maps. The GIS data also provides the extent polygons for all mapped features; it can be queried, filtered, and used with other GIS datasets.
- 7) Species have been divided into groups and subgroups based on their behavior, morphology, taxonomic classification, and spill vulnerability and sensitivity. The icons below reflect this grouping scheme.
- 8) Colors depicting monthly seasonality roughly reflect Winter/Spring/Summer/Fall, but are primarily intended to ease readability.

MARINE MAMMAL



Dolphin



Manatee



Whale

HERPETOFAUNA



Amphibian/Frog/
Snake/Lizard



Turtle

HABITAT



Upland/Wetland/Plant

BIRD



Alcid/Pelagic Bird



Diving Bird



Gull/Tern



Passerine Bird



Raptor



Shorebird



Wading Bird



Waterfowl

INVERTEBRATE



Bivalve



Cephalopod



Crab/Invertebrate/
Shellfish



Shrimp

FISH



Fish



Nursery

Mapping Qualifiers and Guidelines

| Element | Qualifier | Guidelines |
|--|-----------------------|---|
| All | Concentration Area | Areas where concentrations are considerably higher than other records of the same species in the area of interest. |
| All | General Distribution | Used for broad, general distributions of species that are often mapped to landscape- or habitat-scale features. |
| All | Vulnerable Occurrence | Intended for records of rare species with discrete occurrences, where the conservation value of the species should be highlighted for spill response. |
| Birds, Herpetofauna, Marine Mammals, Fish, Invertebrates | Migration | Used when an area is a known staging area of high importance to the species for birds; and/or areas are potential or known migration corridors in the marine environment for other elements. |
| Birds, Herpetofauna | Nesting | Applicable to all nesting birds and herps. Should represent known nesting areas rather than all potential nesting habitat. |
| Birds | Rafting | Similar to 'Concentration Area' qualifier, but specific to large on-water concentrations. |
| Birds | Wintering | Designates known areas of importance to wintering birds. |
| Benthic | High Ecological Value | For use in areas where benthic organisms provide high ecological services, high quality habitat, or known areas of high biodiversity. |
| Fish and Invertebrates | Harvest Area | May be used as a qualifier for distributions in special cases, where the general distribution was not mapped and/or widespread and the distribution of the harvested resources is used to depict important areas. |
| Fish and Invertebrates | Nursery Area | Refers to specific areas of known importance to early life history stages (e.g., larvae, juveniles) of a species. |
| Fish and Invertebrates | Spawning Area | Areas where animals are spawning. Spawning is loosely defined as the release of gametes or eggs from the adult. |

MARINE MAMMALS

Marine mammals depicted in this atlas include whales, dolphins, porpoises, and seals. While all of these species can be found in the marine waters of the New York Bight, bottlenose dolphins and seals are the only species likely to occur regularly in inshore areas and bays.

Pinnipeds – The most abundant pinniped in NY and NJ is the harbor seal, with grey seals regularly found in small but increasing numbers. Harbor and gray seals may occur from September to May, and their numbers peak from December through April. Juvenile gray seals may occur from January through May. Seals in the NY/NJ metro area may arrive slightly later and leave earlier than in Long Island (Biolsi pers. comm.). Harp, hooded, and ringed seals are Arctic species that are occasionally found in NY and NJ. Of these, only harp seals were mapped and this species may occur January through May. Hooded and ringed seals are very rarely observed.

Harbor seals may be found in the Hudson River as far north as Albany, but only their concentration areas were mapped. Seal concentration areas were mapped using digital data and expert knowledge. Haul-out sites were buffered by 100 m to increase the visibility of these locations on the map as well as to account for seals' sensitivity to human disturbance. Areas where seals aggregate adjacent to haul-outs, such as inlets, were mapped as high concentration areas. Concentration values for haul-outs are based on survey data and interviews with experts. These values reflect either the typical range or average number of seals present at a site during the peak season.

There are five major haul-outs on the south shore of Long Island: Montauk Point, Shinnecock Bay, Cupsogue Beach (Moriches Inlet), Democrat Point, and Haunts Creek (Jones Inlet). Seals also regularly haul out on Swinburne Island in Raritan Bay. Sandy Hook contains two major haul-outs; Skeleton Hill Island and Officer's Row. At the request of Gateway National Recreation Area, seals were mapped as occasionally hauled out on the eastern shore of Sandy Hook, but this is not a major site. Seals may also be present and/or hauling out in appropriate habitats throughout the south shore bays of Long Island, Raritan Bay, Sandy Hook Bay, and other NY and NJ bays and channels.

Cetaceans – Cetaceans (whales, dolphins, and porpoises) that may occur in NY and NJ waters that were mapped in this atlas include: bottlenose dolphin (NJ state special concern), harbor porpoise (state special concern), fin whale (state and federally endangered), humpback whale (state and federally endangered), and north Atlantic right whale (state and federally endangered). Sei, blue, and sperm whales (all state and federally endangered) are rarely known to occur within the mapped Area of Interest (AOI) and were not mapped. Marine mammals with no status listing (state or federally endangered, threatened, or of concern) were only mapped if there were known concentration areas. Common dolphins and minke whales may frequent NY/NJ waters, but because there were no known concentration areas for these species, they were not mapped. All marine mammals are protected under the Marine Mammal Protection Act of 1972.

Due to their wide-ranging habits and lack of known concentration areas, cetaceans were mapped using general distributions with the exception of two Biologically Important Areas identified by Duke University. These areas consist of a fin whale foraging concentration near Montauk Point and a right

whale migratory corridor. Humpback whales were added to the Montauk foraging concentration area using expert knowledge.

Cetaceans may be present year-round, but there are seasonal changes in their abundance and distribution. Fin whales are the most common large whale in the AOI and are present throughout the year. Humpback whales are found mainly in the spring, summer, and early winter, and are becoming more common along the coast. The North Atlantic right whale is infrequently but regularly found in the AOI throughout the year and appears to use the New York Bight as a migratory corridor between southern winter calving grounds and northern summer feeding grounds. Bottlenose dolphins are typically present from March through October, while harbor porpoise numbers peak in the winter months. Cetacean concentrations and seasonality were derived from NJDEP Ocean/Wind Power Baseline Studies Final Report (2010) and NYS NHP/DEC Baseline Monitoring of Large Whales in the New York Bight (2014), and reviewed by resource experts.

Expert contacts for NY/NJ Metro Area, Hudson River and South Long Island marine mammals*:

| Name | Agency | City | Phone | Species |
|------------------------|----------------------|----------------------|--------------|--------------------|
| Arthur Kopelman | CRESLI | West Sayville, NY | 631-244-3352 | Marine mammals |
| Jeanette Bowers-Altman | NJDEP | Trenton, NJ | 856-629-0261 | Marine mammals |
| Kristy Biolsi | St. Francis College | Brooklyn Heights, NY | 718-489-5415 | Seals |
| Lisa Bonacci | NYSDEC | East Setauket, NY | 631-444-0462 | T&E Marine mammals |
| Paul Sieswerda | Gotham Whale | Staten Island, NY | 718-938-2067 | Marine mammals |
| Robert DiGiovanni | Riverhead Foundation | Riverhead, NY | 631-369-9840 | Marine mammals |

***Note: this list is not meant to represent all marine mammal experts for the region.**

Major Data Sources Used: Marine Mammals

Conserve Wildlife Foundation of New Jersey. 2015. New Jersey Threatened and Endangered Species Field Guide. Available at <http://www.conservewildlifenj.org/species/fieldguide/>. Accessed July 2015.

DiGiovanni, R. 2015. Seal Haulout Sites around Long Island, NY and CT. Riverhead Foundation. Table and map.

Kopelman, A. 2014. Marine Mammal Sightings Data 1981 – 2013. Coastal Research and Education Society of Long Island (CRESLI). Spreadsheet.

LaBrecque, E., C. Curtice, J. Harrison, S.M. Van Parijs, and P.N. Halpin. 2015. Biologically important areas for cetaceans within U.S. Waters – East Coast Region. *Aquatic Mammals* 41: 30-38. Supporting vector digital data provided by the authors.

NatureServe 2014. NatureServe Central Databases. Arlington, VA. Vector digital data.

New Jersey Department of Environmental Protection, Office of Science. 2010. Ocean/wind power ecological baseline studies final report, volume III: Marine mammal and sea turtle studies. Prepared by Geo-marine, Inc. Document.

Schlesinger, M.D. and L.A. Bonacci. 2014. Baseline monitoring of large whales in the New York Bight. New York Natural Heritage Program and New York State Department of Environmental Conservation. Albany and East Setauket, NY. Document.

Sieswerda, P. 2014. Marine Mammal Sightings in the NY Bight 2008 – 2014. Gotham Whale. Spreadsheet.

BIRDS

Bird species are included in this atlas either because of their likelihood of direct or indirect impact by an oil spill or similar incident, their general rarity or imperilment, or their special protection status as threatened or endangered. Migratory or wintering concentration areas, nesting sites and colonies, and protected species are especially emphasized. Bird concentration areas depicted in this atlas are described for various groups of birds below.

Colonial waterbirds, shorebirds, and wading birds – Nesting locations for terns, gulls, cormorants, and herons along with breeding locations for piping plovers (state endangered and federally threatened) and other solitary nesting shorebird locations were mapped using digital polygon data obtained from NYSDEC, NY NHP, and NatureServe (NJ). Concentration values were generalized when presented for a range of dates (10-25, or 100s, 1000s, etc.) or left blank when not available. Migratory hotspot locations of terns and shorebirds were mapped using survey data provided by NY Audubon, NY NHP, and NatureServe (NJ). Concentration values, when presented, represent ranges or generalized values. Wading bird hotspot foraging locations and roost sites were mapped using survey data and expert knowledge provided by NJ Audubon and NY Audubon. Concentration values for wading bird foraging and roosting locations indicate high counts. In some instances, general distributions of sensitive species were mapped in association with habitat features using the NYSDOS Significant Coastal Fish and Wildlife Habitats narrative and accompanying digital polygon data.

Secretive marsh birds and marsh obligate passerines – Salt and freshwater marshes are ranked as highly sensitive to oiling due to their biological productivity and the tendency for oil to persist based on low relative exposure to wind/wave energy and the difficulties associated with human cleanup activities. Marshes are extremely valuable for a suite of bird species in the region including rails, bitterns, and marsh obligate passerines, and should be prioritized for protection wherever they exist. Due to the difficulties of surveying in these areas, and in an effort to highlight specific known nesting occurrences, we only mapped nesting locations from point count surveys (Hudson River region), NY NHP, NatureServe (NJ), and the NY DOS Significant Coastal Fish and Wildlife Habitats narrative and associated polygon data. General distributions based on habitat associations were not mapped as they have been in the past. Therefore, an absence of a polygon in a region does not mean a species will not be present in the event of a spill.

Waterfowl – The majority of the Atlantic flyway population of Atlantic Brant and a significant portion of American black ducks overwinter in the marshes fringing the large bays of New York and New Jersey. Particular consideration is given to these key species during region wide aerial surveys as is evident in the atlas data. Based on consultation with resource experts and due to the large geographic scale at which winter waterfowl surveys are conducted, we mapped winter waterfowl distributions to large waterbodies and adjacent marsh habitat. In an effort to reduce complexity and place an emphasis on the overall number of individuals utilizing a particular region, we chose to only map species that contained 100 or more individuals per survey area. Counts of species that did not meet this threshold within a surveyed area were aggregated together and displayed as wintering “waterfowl”. This method reduces clutter on the map while still placing an emphasis on the regions providing critical over-wintering waterfowl habitat. Smaller non-contiguous habitat within the survey area was noted as providing general distribution habitat to “waterfowl” during the winter season. Qualitative rather than quantitative terms were used to describe the concentration values of these areas. Additional areas providing critical foraging habitat and refuge areas for migrating waterfowl were mapped when data was available. The majority of the wintering and migratory occurrences were mapped using the USFWS Mid-winter Waterfowl Survey, data from NJ Audubon, and the NY DOS Significant Coastal Fish and Wildlife Habitats narrative and associated polygon data.

Nesting locations for resident waterfowl species were obtained from the NYSDEC Breeding Waterfowl Survey, the NY DOS Significant Coastal Fish and Wildlife Habitats narrative and associated polygon data, and some found opportunistically during other regional surveys. Similar to other marsh obligate nesting birds, the difficult nature of surveying in marsh habitat resulted in nesting waterfowl distributions in the area to be underrepresented within the atlas. Resident populations of waterfowl depend heavily on salt and freshwater marshes for breeding and therefore could be present within this habitat during the spring and summer breeding months.

Raptors – Nesting locations for bald eagles (NJ state endangered, NY state threatened), peregrine falcons (state endangered), osprey (NJ state threatened, NY state special concern), and northern harriers (NJ state endangered, NY state threatened) were mapped as points in New Jersey and polygons in New York at the request of the data providers; NatureServe (NJ) and NY NHP. Additionally, breeding locations of the state endangered short-eared owl were mapped as polygons along the southern shore of Long Island, NY. Wintering locations and migratory stopover concentrations were mapped as polygons where appropriate using the NY NHP data and the NY DOS Significant Coastal Fish and Wildlife Habitats narrative and associated polygon data.

Seabirds – No pelagic seabirds nest within the AOI but certain species are predicted to use the offshore region depicted within the atlas. The general distributions of seabirds off of New York and New Jersey were mapped using models created by researchers at the National Centers for Coastal Ocean Science using the Compendium of Avian Information database. Predictive models of seasonal occurrence were evaluated for inclusion on the map. Distributions were shown on the atlas when abundance was predicted to be higher than one individual per one kilometer pixel. These raster pixels were then converted to vector data and incorporated into coastal (0 – 1 nautical miles), nearshore (1-2 nautical

miles), mid-shore (2-4) nautical miles) or offshore polygons (6-12 nautical miles from shore). Additional high concentration areas were added off of the coast of Long Island using information from the NY DOS Significant Coastal Fish and Wildlife Habitats narrative and associated polygon data and a study conducted by Loring and others 2014.

Rare, threatened and endangered passerines – Nesting location of rare, threatened or endangered passerines were included as polygons in this atlas even when hydrographically removed from large waterbodies in an effort to make this regional update more usable in an all hazards context. These data were obtained from the NY NHP and NatureServe (NJ) databases and concentration values were set to equal one pair unless otherwise noted in the original data.

Expert contacts for NY/NJ Metro Area, Hudson River and South Long Island birds*:

| Name | Agency | City | Phone | Species |
|------------------|--------------------|-------------------|--------------|---------------------|
| Angelika Beckman | NYSDEC | Albany, NY | 845-256-3098 | marsh nesting birds |
| Elizabeth Craig | Cornell University | Ithaca, NY | | harbor herons |
| Kerri Dikun | NY Audubon | Oyster Bay, NY | 516-922-3200 | shorebirds |
| Nellie Tsipoura | NJ Audubon | Bernardsville, NJ | 908-204-8998 | wading birds |
| Susan Elbin | NYC Audubon | New York, NY | 212-691-7483 | wading birds |
| Ted Nichols | NYDEP | Trenton, NJ | 609-292-6685 | waterfowl |

***Note: this list is not meant to represent all bird experts for the region.**

Major Data Sources Used: Birds

Beckmann, A. 2014. Hudson River Marsh Bird Monitoring Program, 2010-2014. Vector digital data and spreadsheet.

Dikun, K. 2014. Shorebird Migration Survey Data. Vector digital data, spreadsheet and expert Knowledge.

Dikun, K. 2014. Long Island Shorebird Hotspots; Selected Ebird Observations. Vector digital data and expert knowledge.

Kinlan, B.P., R. Rankin, A. Winship, and C. Caldow. 2013. Modeling At-Sea Occurrence and Abundance Marine Birds to Support Mid-Atlantic Marine Renewable Energy Planning. U.S. Department of the Interior, Bureau of Ocean Energy Management, Herndon, VA. OCS Study BOEM 2013-xxx. NOAA Technical Memorandum NOS NCCOS xxx. ###+### pp.

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HERPETOFAUNA

Sea Turtles – Green (state and federally threatened), Kemp’s ridley (state and federally endangered), leatherback (state and federally endangered), and loggerhead (NJ endangered, NY and federally threatened) sea turtles were included in this atlas. The Atlantic hawksbill sea turtle is listed as endangered federally and by the states of NY and NJ, but it was not mapped due to its rarity in this region.

Polygons represent potential in-water presence in bays and the Atlantic Ocean. The bays, particularly along the south shore of Long Island, are seasonal foraging grounds for green, Kemp’s ridley, and loggerhead sea turtles. Sea turtles typically do not arrive in NY/NJ waters until May or June and migrate south by mid-November. Sea turtles are not known to nest in this AOI. The loggerhead sea turtle is the most common sea turtle in these waters. Leatherback sea turtles are also common, but tend to be farther offshore in deeper water than the other species. However, leatherback sea turtles will sometimes utilize eastern Long Island bays near the inlets (Kopelman pers. comm.). Kemp’s ridley sea turtles are

uncommon but regular in this area as juveniles. Green sea turtles are least common of the mapped sea turtles in this atlas. Sea turtle general distributions were mapped largely based on expert knowledge and the New Jersey Threatened and Endangered Species Field Guide.

Northern Diamondback Terrapin – Terrapins rely exclusively on coastal salt marshes, back bays, tidal creeks and associated habitat making them extremely susceptible to a marine oil spill. Although once widespread in the region, terrapins have declined in recent years owing to high predation rates in historically productive areas. The locations depicted in this atlas indicate known current nesting locations but suitable habitat is widespread in this atlas region and there is potential for terrapins to be present in most bays and estuaries in New York and New Jersey. Breeding locations included in this atlas for terrapins were obtained from survey data collected by Russel Burke, Hofstra University, Michael Farina, Marine Nature Study Area; Oceanside, NY and Robert Cook, National Park Service. Additional nesting locations and some general distribution locations were obtained from NY NHP, NatureServe (NJ), and the NY DOS Significant Coastal Fish and Wildlife Habitats narrative and associated polygon data. These locations were further refined during data review sessions with local resource experts.

Threatened, endangered and other rare reptiles and amphibians – Other reptile and amphibian species were added to the atlas based on their conservation status, their dependence on the aquatic environment during sensitive life stages (breeding in particular), their rarity in the region, or based on expert input. At the request of data providers, some species locations were buffered and species names masked to prevent illegal collection. The bulk of the data was obtained from NY NHP, NatureServe (NJ), NY DOS Significant Coastal Fish and Wildlife Habitats narrative and associated polygon data, and from interviews with resource experts.

Expert contacts for NY/NJ Metro Area, Hudson River and South Long Island herpetofauna*:

| Name | Agency | City | Phone | Species |
|------------------------|--------------------------|-------------------|--------------|-----------------------------|
| Arthur Kopelman | CRESLI | West Sayville, NY | 631-244-3352 | Sea turtles |
| Erik Kiviat | Hudsonia | Annandale, NY | 845-758-7053 | Atlantic coast leopard frog |
| Jeanette Bowers-Altman | NJDEP | Trenton, NJ | 856-629-0261 | Sea turtles |
| Mike Farina | Marine Nature Study Area | Oceanside, NY | 516-766-1580 | diamondback terrapins |
| Nick Conrad | NY NHP | Albany, NY | 518-402-8944 | Rare, T&E herps |
| Robert Cook | NPS | Wellfleet, MA | 508-487-3262 | Reptiles and Amphibians |
| Robert DiGiovanni | Riverhead Foundation | Riverhead, NY | 631-369-9840 | Sea turtles |
| Russell Burke | Hofstra University | Hempstead, NY | 516-463-5521 | diamondback terrapins |

***Note: this list is not meant to represent all herpetofauna experts for the region.**

Major Data Sources Used: Herpetofauna

- Burke, R. 2015. Nesting Locations of Northern Diamondback Terrapins. Hofstra University. Spreadsheet and expert knowledge.
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- Cook, R.P., in prep. Amphibians and Reptiles of Gateway NRA: Impacts of Urbanization and Restoration. Report and expert knowledge.
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- Cook, R.P., D.K. Brotherton and J.L. Behler. 2010. Inventory of Amphibians and Reptiles at the William Floyd Estate, Fire Island National Seashore. Natural Resource Report NPS/NCBN/NRTR-2010/380
- Farina, M. 2015. Nesting Locations of Northern Diamondback Terrapins. Marine Nature Study Area; Oceanside, NY. Spreadsheet and expert knowledge. Report and expert knowledge.
- NatureServe 2014. NatureServe Central Databases. Arlington, VA. Vector digital data.
- New York Natural Heritage Program, SUNY College of Environmental Science and Forestry and New York State Department of Environmental Conservation. October, 2015. Biodiversity Databases, Element Occurrence Digital Data Set. Albany, NY. Vector digital data.
- New York State Department of State, Division of Coastal Resources. 2012. Significant Coastal Fish and Wildlife Habitats Narratives 1987 – 2012. Albany, NY. Documents.
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TERRESTRIAL MAMMALS

The terrestrial mammals depicted in this atlas are limited to special status species. These are: Alleghany woodrat (NY/NJ endangered), New England cottontail (NY special concern), Indiana bat (NY and federally endangered), Eastern small-footed myotis (NY special concern), and northern myotis (NY and federally threatened). The only listed terrestrial mammal occurring within the NJ portion of the AOI is the Alleghany woodrat. Digital polygon data from NatureServe (NJ) and the NYS NHP were used to map terrestrial mammal locations. Bat colonies, after being offset, were buffered by 1,000-m due to their sensitivity to human disturbance.

Semi-aquatic furbearing mammals such as beaver, muskrat, mink, and river otters occur throughout the NY/NJ AOI but were not mapped due to their relatively wide distribution and a lack of information regarding particular concentration areas. Muskrats are common in a variety of wetland habitat including brackish and freshwater marshes, ponds, and streams. Mink are less numerous than muskrats, but are

also widely distributed in a variety of wetland habitats. Beavers are widespread in the Hudson River corridor, but populations tend to be low in areas of dense human population such as the NY/NJ metro area. Beaver rarely occur on Long Island. River otters are gradually re-colonizing Long Island following extirpation, but established territories have not been documented around the south shore bays, including the Carmans River, the Connetquot River, and other suitable habitat (Bottini pers. comm.).

Expert contacts for NY/NJ Metro Area, Hudson River and South Long Island terrestrial mammals*:

| Name | Agency | City | Phone | Species |
|------------------------|---------|------------------|--------------|-------------------|
| Andrew Burnett | NJDEP | Trenton, NJ | 609-748-2058 | Furbearers |
| Jeanette Bowers-Altman | NJDEP | Trenton, NJ | 856-629-0261 | Rare, T&E mammals |
| Josh Stiller | NYSDEC | Stonybrook, NY | 631-444-0311 | Furbearers |
| Mike Bottini | Private | East Hampton, NY | 631-267-5228 | River Otter |
| Nick Conrad | NY NHP | Albany, NY | 518-402-8944 | Rare, T&E mammals |
| Sean Madden | NYSDEC | Albany, NY | 518-402-8977 | Mink |

***Note: this list is not meant to represent all terrestrial mammal experts for the region.**

Major Data Sources Used: Terrestrial Mammals

NatureServe 2014. NatureServe Central Databases. Arlington, VA. Vector digital data.

New York Natural Heritage Program, SUNY College of Environmental Science and Forestry and New York State Department of Environmental Conservation. October, 2015. Biodiversity Databases, Element Occurrence Digital Data Set. Albany, NY. Vector digital data.

FISH

Finfish depicted in this atlas include selected marine, estuarine, and freshwater species. Species of conservation interest, commercial or recreational importance, or ecological importance are emphasized. Fish polygons were created based on survey information, digital data, and expert opinion provided primarily by resource experts at NJDEP and NYSDEC. Concentrations used for survey data include "LOW", "MEDIUM", "HIGH", and "ABUNDANT" or in the case of mid-Atlantic Estuarine Living Marine Resources (ELMR) "RARE", "COMMON", "ABUNDANT", AND "HIGHLY ABUNDANT." In the absence of concentration information, a concentration of "PRESENT" was assigned. In special cases, other concentrations are used.

Atlantic and shortnose sturgeon – Atlantic (NJ state endangered, federally endangered) and shortnose sturgeon (federally and state endangered) were mapped to areas where they are known to occur. Polygons were based on data provided by NYSDEC staff, Dr. Keith Dunton of Delaware State University, published literature, and expert knowledge from Kathy Hattala and Kim McKown of NYSDEC. Important spawning, nursery, and wintering areas on the Hudson River were identified by Kathy Hattala. Coastal aggregation areas of subadult Atlantic sturgeon near the Rockaways and Sandy Hook

were based on Dunton and others 2010. An Atlantic sturgeon migratory route along the NY/NJ coast to the 20 m isobath was mapped using Dunton and others 2015.

River herring and American shad - Alewife and blueback herring, collectively known as river herring, and American shad are anadromous fish that once supported the largest commercial and recreational fisheries on the Atlantic Coast but have become severely depleted due to blockages of spawning runs, habitat loss, and overfishing. Spawning runs were mapped using information provided by NJDEP and NYSDEC as well as knowledge from agency biologists and local experts. River herring runs were mapped to the first known barrier such as a dam or impassable gradient. If the run went beyond the water features in the ESI hydrographic layer, then it was mapped using stream line features and buffered by 5 m to convert to a polygon feature. These areas are designated with "Spawning Area" and "Nursery Area" mapping qualifiers to emphasize these important life history stages. The concentration "KNOWN" was used to indicate runs with recently confirmed spawning activity, and "POTENTIAL" was used for runs with fish passage improvement projects. Embayments on the Hudson River are important to early life stages of river herring and were included as nursery areas. River herring pre-spawning concentrations at the mouths of certain rivers were mapped as migration areas. Timing of migration and spawning was provided by resource experts. Additional anadromous fish concentration areas on the Hudson River were mapped using NY NHP data, and an anadromous fish migration corridor on the lower Hudson River was mapped using expert knowledge.

FISH - HUDSON RIVER

In addition to sturgeon, river herring, and American shad, special attention was given to mapping the following commercially or recreationally important species on the Hudson River: American eel, striped bass, Atlantic tomcod, largemouth bass, smallmouth bass, and walleye. The Lower Hudson River and its tributaries provides extensive spawning and nursery habitat for these species. Resource experts from NYSDEC provided most of the information used to map general distributions and critical spawning, nursery, and wintering areas, and seasonalities. The 2002-2007 Hudson fish distribution data (AKRF 2010) were used to delineate spawning and nursery areas for Atlantic tomcod. Mid-Atlantic ELMR data were used map the general distribution, concentration values, and seasonality for other species in the Hudson River estuary based on salinity zones. In some cases, distributions were further refined with additional salinity data from The Nature Conservancy. Important multi-species concentration areas such as Haverstraw Bay were identified using NYSDOS Significant Coastal Fish and Wildlife Habitat digital data and narratives.

FISH – BAYS AND ESTUARIES

Long Island- NYSDEC staff provided Western Long Island (WLI) beach seine data for 1984 – 2013 that was used to develop initial species lists and concentrations for individual bays. The WLI surveys occur May – October and sampling stations are fixed locations based on accessibility. Of the south shore bays, Jamaica Bay has been sampled the longest and most consistently, with limited sampling on the south shore of central Long Island due to lack of accessibility.

On the south shore, the WLI sampling stations are divided into 6 bays: Jamaica Bay, South Oyster Bay, Great South Bay, Bellport Bay, Moriches Bay, and Shinnecock Bay. Species occurrence rates based on how often a species was encountered in each bay were used to determine concentration values of “LOW”, “MEDIUM”, and “HIGH” based on the first, second and third, and fourth quartiles respectively. Only the five most recent years of survey data were summarized for Jamaica Bay due to its consistent coverage throughout all years of the WLI survey; for less surveyed bays all years of available data were included.

NYSDOS Significant Coastal Fish and Wildlife Habitat narratives were reviewed for additional species information for the south shore bays and rivers including Carls River, Carmens River, and Connetquot River. One listed species, the banded sunfish (NY state threatened), occurs in the Peconic River system on Long Island and was mapped using NYS NHP data. Major inlets were mapped as concentration areas for species such as bluefish and striped bass, as well as for eggs and larvae of tautog and black sea bass that can drift in from nearshore spawning areas. Winter migrants, Atlantic cod and Atlantic mackerel, were mapped using NYSDEC expert knowledge. The resulting species lists and concentrations for each bay were reviewed and modified through discussions with NYSDEC resource experts. Seasonality was determined using Mid-Atlantic ELMR, NYSDEC expert knowledge, and published literature.

Raritan Bay and NJ Bays and Estuaries – Mid-Atlantic ELMR data were used to fill in species information within NJ waters and Raritan Bay. Primarily, mid-Atlantic ELMR data were used in Barnegat Bay and other smaller inland bays along the NJ coast. Concentrations and seasonality were adopted as is. NOAA’s Essential Fish Habitat (EFH) vector digital data were used for mapping Highly Migratory Species.

FISH – ATLANTIC OCEAN

The ocean distribution of fish was mapped using three fisheries independent trawl survey datasets; NJ Ocean Trawl Survey (OTS), VIMS Northeast Area Monitoring and Assessment Program (NEAMAP), and NMFS Northeast Fisheries Science Center Bottom Trawl survey. EFH vector digital data were used for mapping Highly Migratory Species. A concentration area at Montauk Point Shoals was mapped using NYSDOS Significant Coastal Fish and Wildlife Habitat. Seasonality was determined using NJ OTS data (described below), EFH source documents, Able and Fahay 2010, Castro 2011, and expert knowledge.

Independent sampling data from NJ OTS and NEAMAP were provided as catch per unit effort (CPUE) by station. Polygons used to aggregate sampling stations were based on the depth strata used by NJ OTS and correspond to generalized 10-m and 20-m isobaths. These polygons were further divided into along the south shore of Long Island from west to east using divisions at the Fire Island and Moriches inlets.

NJ ocean fish – The NJ OTS was the primary dataset used to determine concentration values and seasonality for NJ ocean fish distribution. This is a multispecies survey that occurs five times a year (January, April, June, August, and October). Survey strata are assigned to 3 different depth regimes; inshore (3-5 fathoms), midshore (5-10 fathoms), and offshore (10-15 fathoms). The most recent 10 years of available data (2004 – 2013) were used for this effort.

The presence of a species for a given month, in a given depth strata, was based on the occurrence rates. Species caught more than one tenth of the time at sampling stations within a polygon and across the ten-year sampling window were marked as present for that month. Species with similar life history, behavior, and habitat requirements were grouped into ELMR guilds for comparison. Within these guilds, average CPUE for all months was used to assign “LOW”, “MEDIUM”, and “HIGH” concentrations, corresponding to the first, second and third, and fourth quartiles of averaged CPUE respectively. Concentration and seasonality information was sometimes adjusted based on review by NJDEP BMF staff or to be consistent with published information.

NY ocean fish – Data from NEAMAP were used to map the inshore and midshore fish distributions in NY. Sampling for this program occurs in the spring and fall (typically May and October) and data used for this effort were collected from 2007 to 2013. NEAMAP data were supplemented with NMFS data (1979-2008) for the offshore polygons and for species not included in the NEAMAP data. Concentrations were assigned using the same method as with NJ OTS. The NMFS data that was downloaded from the U.S. Ocean Biogeographic Information System did not include catch numbers; therefore, species were mapped as “PRESENT” if they appeared in the NMFS bottom trawl survey for a given polygon.

FISH – LAKES AND PONDS

Recreationally important freshwater fish were mapped in NY using the Recommended Public Fishing Areas vector data and interviews with NYSDEC fisheries biologists on Long Island and in the NYC metro area. These areas were given the mapping qualifier “HARVEST AREA” to emphasize the recreational/economic value of the species mapped within them. NYSDEC biologists provided seasonality and concentrations.

Expert contacts for NY/NJ Metro Area, Hudson River and South Long Island fish*:

| Name | Agency | City | Phone | Species |
|------------------------|------------------|----------------------|--------------|-----------------|
| Byron Young | NYSDEC (retired) | East Quogue, NY | 631-294-9612 | Alewife |
| Charles Guthrie | NYSDEC | Stonybrook, NY | 518-402-8924 | Freshwater fish |
| Chris Bowser | NYSDEC | New Paltz, NY | 845-889-4745 | American eel |
| Heather Corbett | NJDEP | Port Republic, NJ | 609-748-2020 | Marine fish |
| Jeanette Bowers-Altman | NJDEP | Trenton, NJ | 856-629-0261 | Sturgeon |
| Kathy Hattala | NYSDEC | New Paltz, NY | 845-256-3071 | Anadromous Fish |
| Kim McKown | NYSDEC | East Setauket, NY | 631-444-0454 | Marine fish |
| Melissa Cohan | NYSDEC | Long Island City, NY | 718-482-4022 | Freshwater fish |
| Mike Boriek | NJDEP | Lebanon, NJ | 908-236-2118 | River Herring |
| Mike Flaherty | NYSDEC | New Paltz, NY | 845-256-3066 | Freshwater fish |

***Note: this list is not meant to represent all fish experts for the region.**

Major Data Sources Used: Fish

- Able, K.W. and M.P. Fahay. 2010. Ecology of Estuarine Fishes: Temperate Waters of the Western North Atlantic. The Johns Hopkins University Press, Baltimore, MD.
- AKRF, Inc. 2010. Distribution patterns of selected fish species of the Hudson River 2002-2007. Prepared for the New York State Department of Environmental Conservation. Document and database.
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- Castro, J.I. 2011. The Sharks of North America. Oxford University Press, New York, NY.
- Dunton, K.J., A. Jordaan, K.A. McKown, D.O. Conover, and M.G. Frisk. 2010. Abundance and distribution of Atlantic sturgeon (*Acipenser oxyrinchus*) within the northwest Atlantic Ocean, determined from five fishery-independent surveys. Fishery Bulletin 108: 450-465.
- Dunton, K.J., A. Jordaan, D.O. Conover, K.A. McKown, L.A. Bonacci, and M.G. Frisk. 2015. Marine distribution and habitat use of Atlantic Sturgeon in New York lead to fisheries interactions and bycatch. Marine and Coastal Fisheries: Dynamics, Management, and Ecosystem Science 7: 18-32.
- Hattala, K. 2015. Hudson River species and river use. New York State Department of Environmental Conservation, Hudson River Fisheries Unit. New Paltz, NY. Spreadsheet.
- Hattala, K. 2015. List of Hudson River tributaries and embayments potentially used by river herring. New York State Department of Environmental Conservation, Hudson River Fisheries Unit. New Paltz, NY. Document.
- National Oceanic and Atmospheric Administration, National Marine Fisheries Service. 2009. Northeast Fisheries Science Center Bottom Trawl Survey Data 1979 – 2008. Woods Hole, MA. Downloaded March 31, 2015 from <http://www.usgs.gov/obis-usa/search/?datasetid=NEFSC#>. Spreadsheet.
- National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Office of Sustainable Fisheries. 2009. Essential Fish Habitat for Atlantic Highly Migratory Species. Silver Springs, MD. Vector digital data.
- New Jersey Department of Environmental Protection, Division of Fish and Wildlife, Bureau of Marine Fisheries. 2014. New Jersey BMF Ocean Trawl Survey (OTS) Data 2004 – 2013. Spreadsheet.
- New York Natural Heritage Program, SUNY College of Environmental Science and Forestry and New York State Department of Environmental Conservation. October 2015. Biodiversity Databases, Element Occurrence Digital Data Set. Albany, NY. Vector digital data.

- New York State Department of Environmental Conservation, Division of Fish, Wildlife, and Marine Resources, Bureau of Fisheries. 2011. Public Fishing Recommended Sites. Albany, NY. Vector digital data.
- New York State Department of Environmental Conservation, Division of Fish, Wildlife, and Marine Resources, Bureau of Marine Resources. 2014. Western Long Island Beach Seine Survey 1984 – 2013. East Setauket, NY. Access database.
- New York State Department of State, Division of Coastal Resources. 2012. Significant Coastal Fish and Wildlife Habitats Narratives 1987 – 2012. Albany, NY. Documents.
- New York State Department of State, Division of Coastal Resources. 1998. Significant Coastal Fish and Wildlife Habitats 2.0. Albany, NY. Vector digital data.
- Smith, C. 2012. Inventory and status of anadromous clupeid spawning migrations in New Jersey freshwaters (2002-2007). New Jersey Department of Environmental Protection, Division of Fish and Wildlife, Bureau of Freshwater Fisheries. Document.
- Stone, S.L., T.A. Lowery, J.D. Field, C.D. Williams, D.M. Nelson, S.H. Jury, M.E. Monaco, and L. Andreasen. 1994. Distribution and abundance of fishes and invertebrates in Mid-Atlantic estuaries. ELMR Rep. No. 12. NOAA/NOS Strategic Environmental Assessments Division. Silver Spring, MD. Document and spreadsheet.
- Young, B. 2014. Known and suspected alewife spawning streams on Long Island. Vector digital data.
- Virginia Institute of Marine Science Multispecies Research Group. January 2015. Northeast Area Monitoring and Assessment Program (NEAMAP) selected bottom trawl data for NY/NJ. Gloucester Pt., VA. Spreadsheet.

INVERTEBRATES

Invertebrates depicted in this atlas include selected marine and estuarine species of commercial, recreational, ecological, and/or conservation interest. Several known invertebrate concentrations, as well as larger, more general areas where invertebrate habitat exists, were mapped.

INVERTEBRATES – HUDSON RIVER

The invertebrates mapped in the Hudson River estuary are blue crab, freshwater mussels, and rare insect species. Blue crab can potentially occur throughout the Hudson River below river mile 74, but only the probable mating and nursery distribution was mapped. Mating and nursery areas are typically shallow (3 m or less) water and salt marsh habitat from river mile 0 to 74 (Kenney pers. comm.). Important concentration areas are Haverstraw Bay, Tappan Zee Bay, and Newburgh Bay.

Based on freshwater mussel sampling by the Cary Institute, the section of the tidal Hudson River from river mile 132 to 154 supports a relatively large freshwater mussel population. The species that occur there are the tidewater mucket, alewife floater, and eastern elliptio. Eastern elliptio is the most common

of these species. While these species are unlisted, their numbers have been greatly reduced by the invasive zebra mussel, and the alewife floater and tidewater mucket are both state ranked as critically imperiled. Gravid females, larvae, and juveniles are particularly sensitive to environmental stress. Densities (number of mussels per m²) were provided by the Cary Institute and used in the concentration field. Additional locations of the alewife floater and eastern elliptio, as well as rare insect species, were mapped using NYS NHP data.

INVERTEBRATES – BAYS AND ESTUARIES

Shellfish – Shellfish landings data provided by NYSDEC were the primary data source for mapping shellfish distribution and concentrations in the Long Island south shore bays. For concentration, the average number of bushels landed in each bay from 2009 – 2013 was summarized for each species except for whelk. There is no mandatory reporting of harvest for whelk species, resulting in severe underestimates (McKown pers. comm.). Shellfish areas mapped with landings data were assigned the mapping qualifier “HARVEST AREA.” NYS Significant Coastal Fish and Wildlife Habitat narratives were used to complete the south shore distribution of shellfish. Raritan Bay shellfish distributions were mapped using the mid-Atlantic ELMR report. For bays in NJ, hardcopy shellfish maps were used to map shellfish concentrations. These maps date as far back as 1983 and are updated as resources allow, with northern quahog in Barnegat Bay the only recently mapped area/species (done in 2012). Pre-2012 data are identified with a concentration value of “HISTORIC.” Information from resource experts at the NYSDEC, NYS Significant Coastal Fish and Wildlife Habitat narratives, and mid-Atlantic ELMR data were used to fill data gaps.

Horseshoe crab - Known horseshoe crab spawning areas were mapped using reports from surveyed sites. The actual spawning distribution is more widespread than is depicted on these maps, as any sandy, bayside beach could be potential habitat. High priority spawning beaches (as determined by the data provider) are indicated with “HIGH” in the concentration field. Spawning areas were mapped by buffering the shoreline by 50 m. Spawning areas were reviewed by resource experts and Fire Island National Seashore staff.

Blue crab - Blue crabs were mapped using WLI Beach Seine data, ELMR data, and expert knowledge. A large adult wintering concentration occurs November – March in the western part of New York Harbor (Kenney pers. comm.). A concentration of spawning females was mapped in Raritan Bay with information provided by NYSDEC (McKown pers. comm.).

Rare and Endangered Invertebrates - Rare and endangered invertebrates were mapped using NYSDEC NHP and NatureServe data with additional locations were provided by Fire Island National Seashore staff. Some species names were generalized as “Rare Insect” or “Rare Invertebrate” to protect sensitive species, as requested by the data provider. A large number of monarch butterflies move through Fire Island and Sandy Hook from August-October during their annual migration and these were included as migration areas. The monarch butterfly is a candidate species for federal listing.

INVERTEBRATES – ATLANTIC OCEAN

Atlantic surfclam – Atlantic surfclam distributions in NY were mapped using survey data for NY. NYSDEC conducts routine population surveys using stratified random sampling. The survey takes place along the south shore of Long Island in that Atlantic Ocean from just east of Rockaway Inlet to Montauk Point, extending 3 nautical miles offshore. The study area is divided into 10 strata, with each stratum extending one mile in width and divided from west to east by Jones, Fire Island, and Moriches inlets. There is only one stratum from Moriches Inlet to Montauk Point, extending one mile from shore. Concentration values were determined by calculating the average clam density (clams/m²) in each stratum from 2005-2012 (total of 4 surveys). Concentrations are described as “LOW”, “MEDIUM”, and “HIGH” corresponding to the first, second and third, and fourth quartiles of density.

The NJ surf clam resource is severely depleted with no recent landings except for a bait fishery off of Sandy Hook in prohibited waters. This area was given a concentration of “Baitfishery Area.” In approved waters the NJ surf clam harvest is virtually nonexistent, and this area was mapped as “historically productive” at the recommendation of NJDEP BS.

Ocean quahog – Ocean quahogs were mapped using the Essential Fish Habitat source document, which states that most adults are found at depths between 25 to 61 m with juveniles at depths of 45-75 m in the middle Atlantic Bight. Based on this information, the ocean quahog distribution was mapped from the 20 m isobath to the offshore extent of the AOI.

Other invertebrates – The ocean distributions of blue crab, horseshoe crab, American lobster, and longfin squid were mapped using fisheries independent datasets: NJ Ocean Trawl, NEAMAP, and NMFS Bottom Trawl, using the same methods as with marine finfish as described above. For NJ OTS and NEAMAP data, the CPUE was calculated for each species by strata, and concentrations were described as “HIGH”, “MEDIUM”, “LOW” corresponding to the first, second and third, and fourth quartiles. Longfin squid concentrations were described as “ABUNDANT” or “HIGHLY ABUNDANT” due to their abundance in all depth strata. NEAMAP was used to map horseshoe crab and American lobster distributions in NY (except for the offshore strata) and NMFS was used to map blue crab in NY and all invertebrates in the NY offshore strata. A horseshoe crab concentration off the west end of Long Island was identified using the NYSDEC Atlantic surfclam survey data from 1999 – 2012 (6 years). The CPUE of horseshoe crab for each stratum was averaged across all years and concentrations were described as “HIGH”, “MEDIUM”, “LOW” corresponding to the first, second and third, and fourth quartiles. Only the high concentration strata were mapped as a concentration area. The primary sources for invertebrate seasonality were mid-Atlantic ELMR, NJ OTS, EFH source documents, and resource experts from NYSDEC.

Expert contacts for NY/NJ Metro Area, Hudson River and South Long Island invertebrates*:

| Name | Agency | City | Phone | Species |
|------------------|--|----------------------|-----------------------|-------------------------|
| Dave Strayer | Cary Institute | Millbrook, NY | 845-677-7600 | Freshwater mussels |
| Gregg Kenney | NYSDEC | New Paltz, NY | 845-256-3199 | Blue Crab |
| Jeff Normant | NJDEP | Port Republic, NJ | 609-748-2040 | Marine bivalves |
| Jennifer O'Dwyer | NYSDEC | East Setauket, NY | 631-444-0489 | Marine invertebrates |
| Joe Reynolds | Bayshore | Navesink, NJ | 732-872-2834 | Horseshoe crabs |
| John Tanacredi | Molloy College | Rockville Centre, NY | 516-323-3591 | Horseshoe crabs |
| Kim McKown | NYSDEC | East Setauket, NY | 631-444-0454 | Marine invertebrates |
| Matt Sclafani | Cornell University Cooperative Extension | Riverhead, NY | 631-727-7850 ext. 377 | Horseshoe crabs |
| Nick Conrad | NY NHP | Albany, NY | 518-402-8944 | Rare, T&E invertebrates |

***Note: this list is not meant to represent all invertebrate experts for the region.**

Major Data Sources Used: Invertebrates

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- New York State Department of Environmental Conservation, Division of Fish, Wildlife, and Marine Resources, Bureau of Marine Resources. 2014. NY Shellfish Landings History 1946 – 2013. East Setauket, NY. Spreadsheet.
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- Stone, S.L., T.A. Lowery, J.D. Field, C.D. Williams, D.M. Nelson, S.H. Jury, M.E. Monaco, and L. Andreasen. 1994. Distribution and abundance of fishes and invertebrates in Mid-Atlantic estuaries. ELMR Rep. No. 12. NOAA/NOS Strategic Environmental Assessments Division. Silver Spring, MD. Document and spreadsheet.
- Tanacredi, J.T. 2014. Long Island Horseshoe Crab Network Annual Inventory Report. Center for Environmental Research and Coastal Oceans Monitoring (CERCOM), Molloy College. West Sayville, NY. Document and spreadsheet.
- Virginia Institute of Marine Science Multispecies Research Group. January 2015. Northeast Area Monitoring and Assessment Program (NEAMAP) selected bottom trawl data for NY/NJ. Gloucester Pt., VA. Spreadsheet.

BENTHIC HABITATS

Benthic habitats mapped in this atlas consist of submerged aquatic vegetation (SAV) and bivalve reefs. Benthic habitat was given the mapping qualifier of “High Ecological Value” as it provides spawning, nursery, and foraging habitat for fish and shellfish, habitat for macroinvertebrates, and food for waterfowl, fish, and mammals. The Hudson River estuary and Barnegat Bay have data sets for SAV inventories conducted in multiple years. In these cases, SAV in the most recent year for each area was

mapped with a concentration value of “Present” while SAV from prior years was given the concentration value of “Potential.” SAV may eventually recover or be restored in areas where it has been lost, and it was recommended by the data providers that these areas be included in the atlas.

Hudson River SAV was mapped using the combined Hudson River NERR/NYSDEC vector digital data from 1997, 2002, and 2007 (Cornell IRIS 2011). The most recently mapped year (2007) was used to differentiate SAV classified as “Present” from the past or “Potential” distribution. The dominant species in the Hudson River estuary SAV community is water celery (*Vallisneria americana*). The dominant seagrass in Barnegat Bay and the South Shore estuary is eelgrass (*Zostera marina*), with widgeon grass (*Ruppia maritima*) occurring in shallower areas with lower salinity. Barnegat Bay SAV was mapped with 1979, 2003, and 2009 data, with 2009 SAV mapped as “Present.” Long Island’s South Shore estuary benthic habitats were mapped using the 2002 NYSDOS benthic habitat data set and supplemented with Fire Island SAV data (Wang 2004). Fire Island SAV data was included only in areas where it did not overlap with the NYSDOS data. The only bivalve reefs mapped in this AOI were in South Oyster Bay. In addition to seagrass and reefs, areas with macroalgae (seaweed) are shown in the South Shore estuary.

Expert contacts for NY/NJ Metro Area, Hudson River and South Long Island benthic*:

| Name | Agency | City | Phone | Species |
|--------------|---------|-------------------|--------------|---------|
| Jeff Herter | NYSDOS | Albany, NY | 518-486-7942 | SAV |
| Rick Lathrop | Rutgers | New Brunswick, NJ | 848-932-1580 | SAV |
| Sara Fernald | NYSDEC | Staatsburg, NY | 845-889-4745 | SAV |

***Note: this list is not meant to represent all invertebrate experts for the region.**

Major Data Sources Used: Benthic

Cornell Institute for Resource Information Science (Cornell IRIS). 2011. Hudson River Estuary – Submerged Aquatic Vegetation (SAV). Hudson River national Estuarine Research Reserve (HRNERR) and New York State Department of Environmental Conservation (NYSDEC). Albany, NY. Vector digital data.

Cornell Institute for Resource Information Science (Cornell IRIS). 2011. Hudson River Submerged Aquatic Vegetation 2007.). Hudson River national Estuarine Research Reserve (HRNERR) and New York State Department of Environmental Conservation (NYSDEC). Albany, NY. Vector digital data.

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Lathrop, R. G. and S.M. Haag. 2011. Submerged aquatic vegetation (SAV) CRSSA image classification of the Barnegat Bay – Little Egg Harbor estuary, New Jersey: 2009. Grant F. Walton Center for Remote Sensing and Spatial Analysis (CRSSA), Rutgers University. New Brunswick, NJ. Vector digital data.

Lathrop, R. G., P. Montesano, and S. Haag. 2011. Submerged aquatic vegetation (SAV) CRSSA image classification of the Barnegat Bay – Little Egg Harbor estuary, New Jersey: 2003; revision published 20110511. Grant F. Walton Center for Remote Sensing and Spatial Analysis (CRSSA), Rutgers University. New Brunswick, NJ. Vector digital data.

Wang, Y.Q. and M. Traber. 2004. Classification of Submerged Aquatic Vegetation (SAV) from Quickbird-2 Satellite imagery for the Fire Island National Seashore. Kingston, RI. Raster Dataset.

HABITATS

Threatened, endangered, and rare plants and rare plant communities were mapped primarily with data from NY NHP and NJ NHP and were given the mapping qualifier of “Vulnerable Occurrence.” NJ NHP grid map contains cells that vary from 358-372 acres in size with a table of rare plant species and ecological communities that occur within each cell. Maritime holly forest, a globally rare forest type, was mapped on Fire Island and Sandy Hook using vegetation data provided by Fire Island National Seashore and Gateway National Recreation Area, respectively. The distribution of seabeach amaranth (NJ endangered, NY state and federally threatened) on Sandy Hook was mapped using information provided by Gateway National Recreation Area. Non-federally listed, state protected plant names were generalized to “Endangered Plant”, “Threatened Plant”, and “Rare Plant.” Although they do not have a listing status in NY, rare mosses were included as “Rare Plant” locations since they occur in wetlands and are vulnerable to oil spills. Small polygons (< 123 m²) representing plant locations in the NY NHP database were converted to points so that they would be visible on the ESI atlas maps. Critically imperiled, imperiled, and vulnerable wetland and upland plant community types were generalized as “Rare Upland Community” or “Rare Wetland Community” except for the maritime holly forest, vernal pool, and coastal dune woodland community types.

There was a high degree of overlap of certain wetland community types in the NY NHP Communities data with ESI wetland polygons (see shoreline habitat section). NY NHP wetland types that were already represented in the ESI wetland polygon data were not included in the habitat feature class. Rocky summit, cliff, and talus upland community types were not mapped due to their low vulnerability to oil spills. Vernal pools provide important amphibian breeding habitat and these were mapped with NY NHP Communities data, NJ DEP Vernal Habitat data, and Scenic Hudson’s Vernal Pools data. NJ vernal habitat areas have been field verified by the NJ DOS and provide documented habitat for amphibians.

Expert contacts for habitats and rare plants*:

| Name | Agency | City | Phone | Species |
|-----------------|--------|-------------------|--------------|-------------------------------|
| Jordan Raphael | NPS | Ocean Beach, NY | 631-687-4769 | Vegetation |
| Mark Christiano | NPS | Staten Island, NY | 718-354-4525 | Vegetation |
| Mark Wong | NJDEP | Trenton, NJ | 609-292-2797 | Rare plants |
| Nick Conrad | NY NHP | Albany, NY | 518-402-8944 | Rare plants |
| Wendy Walsh | USFWS | Pleasantville, NJ | 609-383-3938 | Seabeach amaranth, swamp pink |

***Note: this list is not meant to represent all habitat and rare plant experts for the region.**

Major Data Sources Used: Habitats

New Jersey Department of Environmental Protection, Division of Fish and Wildlife, Endangered Nongame Species Program. 2012. NJDEP Species Based Habitat, Vernal Habitat (Version 3.1, 20120221). Trenton, NJ. Vector digital data.

New Jersey Department of Environmental Protection, Office of Natural Lands Management. 2012. NJDEP Natural Heritage Grid Map, Version 200911. Trenton, NJ. Vector digital data.

New York Natural Heritage Program, SUNY College of Environmental Science and Forestry and New York State Department of Environmental Conservation. October, 2015. Biodiversity Databases, Element Occurrence Digital Data Set. Albany, NY. Vector digital data.

Scenic Hudson. 2014. Woodland Pools 2014 Updated. Vector digital data.

INVASIVE SPECIES

The spread of invasive or non-native species can degrade habitat, increase the potential for crop damage and diseases in humans, livestock and natural resources, reduce biodiversity through competition and limit recreational opportunities. Invasive species often opportunistically spread after disturbance events alter the natural landscape. Oil spill response and clean up often alters the landscape in a manner conducive to the spread of invasive species as crews often mobilize from all over the U.S. in response to large scale spill events. Boats, trailers, waders and clean up equipment can spread invasive species from waterbody to waterbody unless properly cleaned after use. Invasive species that were mapped are shown on the HUMAN-USE RESOURCE maps.

Regulations prohibit boats from launching from or leaving DEC launch sites without first draining the boat and cleaning the boat, trailer and equipment of visible plant and animal material. Many New York counties, towns and villages also have laws in place that prohibit the transport of aquatic invasive species on boats, trailers and equipment.

Asiatic sand sedge and water chestnut are invasive species of particular concern to land managers in this AOI. Asiatic sand sedge is an exotic plant that threatens beaches and the rare species that rely on them such as seabeach amaranth and piping plover. It was recently discovered in New York on Staten Island and Long Island following Hurricane Sandy and a large effort is underway to eradicate it. Invasive plants can also form dense monocultures that could impede oil spill response. Water chestnut, an invasive floating aquatic plant found on the Hudson River, forms thick, impenetrable mats in June and July. Invasive species were not included in the maps as they are not priority resources for protection, but planners and responders should be aware of their presence and coordinate response activities with the appropriate invasive species coordinator and/or land manager to prevent the spread of these species.

Invasive Species Contacts:

New Jersey Invasive Species Strike Team: <http://www.njisst.org/>

New York Invasive Species Information: <http://www.nyis.info/index.php>

WILDLIFE REHABILITATION

The following contact provides veterinary care and/or retrieval of wildlife adversely affected by an event:



















Tri-State Bird Rescue & Research. 170 Possum Hollow Road, Newark, DE 19711. (302)-737-9543.

HUMAN-USE RESOURCES

The human-use resources shown in this atlas were extracted from the ESI GIS data compiled for this region. The extracted features were mapped at scale of 1:100,000 and appear on the maps referenced by a number. For example, Map 1 will show the human-use features in conjunction with the ESI shoreline.

Management areas such as wildlife refuges and state parks are mapped as polygons. Where the feature is a known point location (e.g., marinas, airports, water intakes), the specific location is displayed.

Map IDs can be found in the accompanying data tables for point and polygon features mapped. The Map ID may provide more information (i.e., name, contact) for that particular resource. The types of human use resources mapped in this atlas are depicted below.

| | | | |
|---|-------------------------|---|-------------------------------------|
|  | Abandoned Vessel |  | Historical Site |
|  | Access |  | Landfill |
|  | Airport |  | Lock and Dam |
|  | Anchorage |  | Marina |
|  | Aquaculture |  | Military Installation |
|  | Archaeological Sites |  | National Estuarine Research Reserve |
|  | Army Corps of Engineers |  | National Park |
|  | Artificial Reef |  | Nature Conservancy |
|  | Beach |  | Oil Facility |
|  | Boat Ramp |  | Port |
|  | Campground |  | Recreational Fishing |
|  | Coast Guard |  | Renewable Energy |
|  | Critical Habitat |  | Repeated Measurement Site |
|  | Diving Site |  | Surfing |
|  | EPA Facility |  | Tribal Land |
|  | EPA Region |  | Washover |
|  | Essential Habitat |  | Waste Disposal |
|  | FEMA Region |  | Water Intake |
|  | Ferry |  | Wildlife Refuge |

Abandoned Vessels: These areas depict sunken or derelict vessels that may be a hazard to response activities. These locations were obtained from the NOAA.

Access Sites: Access sites were mapped using data from NYSDEC and indicate beach access sites.

Airports: Information on the location of airports was downloaded from the National Transportation Atlas Databases maintained by the FAA.

Aquaculture Locations: Locations of aquaculture sites were obtained from NYSDEC and NJDEP.

Archaeological Site: Archaeological sites in New Jersey were provided by NJDEP and a few other sites were carried over from previous versions of the ESI atlases.

Army Corps of Engineers: Jurisdictional boundaries were obtained from the Army Corps of Engineers.

Artificial Reef: Locations were mapped using data from NOAA.

Beaches: Were mapped using the USGS and US Board of Geographic Names

Boat Ramps: Were mapped using information from NYSDEC and the National Park Service.

Campgrounds: Were mapped using information from the state of New York

Coast Guard Stations and Districts: USCG jurisdictional boundaries and stations were mapped using information from the USCG.

Diving Sites: Diving sites were mapped using the Mid-Atlantic Coastal and Recreation study.

Environmental Protection Agency Facility: Represents facilities required to file a Risk Management Plan (RMP) due to the presence of extremely hazardous substances that may result in a chemical accident. The data comes from the USEPA.

Essential Habitat: Essential Habitat was mapped using NOAA NMFS Essential Fish Habitat, NYSDEC Significant Coastal Fish and Wildlife Habitat, and New York and New Jersey Audubon Important Bird Area data.

FEMA Regions: Were mapped using data from the Federal Emergency Management Agency (FEMA)

Ferry Terminals: Ferry terminals were mapped using New York City facilities data and New Jersey ferry terminal embarkation points.

Fishery Areas: Shellfish management areas in New York and New Jersey were mapped using data from NJDEP and SeaPlan.

Historic Sites: Data for historic sites came from NYS Office of Parks, Recreation, & Historic Preservation, NYS Office of Cyber Security, NJDEP Green Acres, and NJ Department of State

Landfills: Data for landfills came from the New York State Department of Environmental Conservation.

Locks and Dams: Selected locks and dams were mapped using NYSDEC dam inventory data.

Marinas and Anchorages: Marina locations were provided by the Mohawk Council of Yacht Clubs, the Hudson River Boat and Yacht Club Association, expert knowledge, and digitized using aerial imagery.

Military: Military installation data were provided by the U.S. Census Bureau's MAF/TIGER geographic database.

National Estuarine Research Reserve: Locations were provided from the NOAA NERRS Centralized Data Management Office

National Park: National park boundaries were provided by NPS.

Nature Conservancy: Boundaries of The Nature Conservancy (TNC) properties were obtained from TNC Lands database.

Oil Facilities: Oil facilities were mapped using data from NYSDEC and the USEPA.

Port: Major port location data were compiled from ACE National Transportation Atlas databases.

Recreational Fishing Areas: These areas include NYSDEC public fishing recommended sites, NJDEP sport ocean fishing grounds, and SeaPlan's recreational boater activity locations.

Renewable Energy Sites: Tidal, solar, and nuclear energy sites were mapped using NOAA's coastal energy facilities and offshore tidal hydrokinetic projects data.

Repeated Measurement Sites: These include Mussel Watch Sites, data buoys, and tide gauge stations and were mapped using data from NOAA, USGS, and NY/NJ Baykeeper.

Surfing: provided using data from the Surfrider foundation.

Tribal Land: Tribal land were downloaded from the U.S. Census Bureau's Census MAF/TIGER database.

Washover: A washover, or washover fan, is a relatively flat surface on the top of a barrier spit complex that slopes gently landward. It is usually created when water, forced landward by breaking waves, flows across the top of the barrier spit during high spring tides or storms. This process creates a flattened-off surface along which sand is transported across the top of the spit into the standing water (lagoon) or marsh landward of the spit. The resulting deposit usually has a fan-like shape. Washover locations are represented by points that were digitized from ESRI World Imagery by Research Planning, Inc. at a scale of 1:8,000.

Water Intakes: Water intakes were obscured for security reasons; otherwise they were mapped as provided by NJDEP, NYS DOW, and expert knowledge.

Wildlife Refuge: Locations of NWRs were provided by the USFWS.

GEOGRAPHIC INFORMATION SYSTEM

The entire atlas product is stored in digital form in a Geographic Information System (GIS) as spatial data layers and associated databases. The format for the data varies depending on the type of information or features for which the data are being stored.

Under separate cover is a metadata document that details the data dictionary, processing techniques, data lineage, and other descriptive information for the digital datasets and maps that were used to create this atlas. Below is a brief synopsis of the information contained in the digital version. Refer to the metadata file for a full explanation of the data and its structure.

MAJOR ROADS

The major roads polyline layer represents major thoroughfares within the United States (ArcGIS Content Team (ESRI) and Tele Atlas North America Inc., U.S. Major Roads, ed. 10, published June 30, 2010, ESRI® Data & Maps series, Redlands, CA, USA). These roads are shown on the maps, but are not part of the underlying ESI GIS data.

SHORELINE CLASSIFICATIONS

The ESI shoreline habitat classification is stored as lines and polygons with associated attributes. In many cases, a shoreline may have two or three different classifications or colored lines on the shoreline. These multiple classifications are represented in the database by ESI#1/ESI#2, where ESI#1 is the landward-most classification and ESI#2 is the seaward-most classification. In addition to the line features, marshes (ESI=10A, ESI=10B), swamps (ESI=10C), and scrub-shrub wetlands (ESI=10D) are also stored as polygons.

SENSITIVE BIOLOGICAL RESOURCES

Biological resources are stored as points and polygons. Associated with each feature is a unique identification number that is linked to a series of data tables that further identify the resources. The main biological resource table consists of a list of species identification numbers for each site, the concentration of each species at each site, a mapping qualifier, and identification codes for seasonality and source information. This data table is linked to other tables that describe the seasonality and life-history time periods for each species (at month resolution) for the specified map feature. Other data tables linked to the first table include: the species identification table, which includes common and scientific names; the species status table, which gives information for state and/or federal threatened or endangered listings; and the source database, which provides source metadata at the feature-species level (specific sources are listed for each species occurring at each mapped feature in the biology feature classes).

HUMAN-USE FEATURES

Human-use features are represented as polygons, points or lines. Management areas such as wildlife refuges, national parks and state parks are mapped as polygons. Known locations such as marinas, high use beaches, airports and water intakes are displayed as points when security risks allow. Bridges and railroads are mapped as line features.

ACKNOWLEDGMENTS

This project was supported by the NOAA Office of Response and Restoration, Hazardous Materials Response Division, under the direction of Jill Petersen, NOAA's ESI Program Manager. The development of this atlas was part of a larger effort to update much of the Atlantic coast after the destruction caused by Hurricane Sandy in October 2012. Funding was provided by the Disaster Relief Appropriations Act of 2013. Additional support was provided by Scientific Support Coordinators (SSC) Frank Csulak and Ed Levine.

The biological and human-use data included on the maps were provided by numerous individuals and agencies. Staff at the New York State Department of Environmental Conservation, New York State Natural Heritage Program, and Audubon of New York contributed a vast amount of information to this effort, including first-hand expertise, publications, maps, and digital data. Other agencies and organizations contributing to data development and review included: New Jersey Department of Environmental Protection, U.S. Fish and Wildlife Service, New York Office of Parks, Recreation and Historic Preservation, and the New York Department of State. Cover photo courtesy of Frank Csulak, NOAA.

At Quantum Spatial (QSI), numerous scientific, GIS, and graphic staff were involved with different phases of the project. Jennifer Halleran was Project Manager. The biological and human-use data were collected, compiled, and produced into the geodatabase by Jennifer Bohannon, Tim Marcella, and Mark Yoders. Jennifer Bohannon, Tim Marcella, and Mark Yoders prepared the final text documents and metadata. The basemap, shoreline and wetland habitat collection and classification was completed by Woolpert Inc.

APPROPRIATE USE OF ATLAS AND DATA

This atlas and the associated database were developed to provide summary information on sensitive natural and human-use resources for the purposes of oil and chemical spill planning and response. Although the atlas and database should be very useful for other environmental and natural resource planning purposes, it should not be used in place of data held by New York State Department of Environmental Conservation, New Jersey Department of Environmental Protection, Audubon of New York, New Jersey Audubon, the New York State Natural Heritage Program, the U.S. Fish and Wildlife Service, or other agencies. Likewise, information contained in the atlas and database cannot be used in place of consultations with natural and cultural resource agencies, or in place of field surveys. This atlas should not be used for navigation.

SPECIES LIST

| Common Name* | Scientific Name* | Common Name* | Scientific Name* |
|------------------------------|-----------------------------------|-----------------------------|--|
| BENTHIC | | BIRDS, cont. | |
| ALGAE | | PELAGIC | |
| Macroalgae | - | Black-legged kittiwake | <i>Rissa tridactyla</i> |
| BIVALVE | | Cory's shearwater | <i>Calonectris diomedea</i> |
| Oyster reef | - | Great shearwater | <i>Puffinus gravis</i> |
| SAV | | Northern gannet | <i>Morus bassanus</i> |
| Submersed aquatic vegetation | - | Wilson's storm-petrel | <i>Oceanites oceanicus</i> |
| Water celery | <i>Vallisneria americana</i> | RAPTOR | |
| BIRDS | | <u>Bald eagle</u> | <u><i>Haliaeetus leucocephalus</i></u> |
| ALCID | | <u>Endangered raptor 1</u> | - |
| Razorbill | <i>Alca torda</i> | <u>Endangered raptor 2</u> | - |
| BIRD | | <u>Northern harrier</u> | <u><i>Circus cyaneus</i></u> |
| Colonial waterbirds | - | Osprey | <i>Pandion haliaetus</i> |
| DIVING | | <u>Peregrine falcon</u> | <u><i>Falco peregrinus</i></u> |
| Double-crested cormorant | <i>Phalacrocorax auritus</i> | Raptors | - |
| Great cormorant | <i>Phalacrocorax carbo</i> | <u>Short-eared owl</u> | <u><i>Asio flammeus</i></u> |
| Horned grebe | <i>Podiceps auritus</i> | <u>Threatened raptor</u> | - |
| <u>Pied-billed grebe</u> | <u><i>Podilymbus podiceps</i></u> | SHOREBIRD | |
| Red-throated loon | <i>Gavia stellata</i> | American oystercatcher | <i>Haematopus palliatus</i> |
| GULL/TERN | | Black-bellied plover | <i>Pluvialis squatarola</i> |
| <u>Black skimmer</u> | <u><i>Rynchops niger</i></u> | Common snipe | <i>Gallinago gallinago</i> |
| Bonaparte's gull | <i>Larus philadelphia</i> | Dunlin | <i>Calidris alpina</i> |
| <u>Common tern</u> | <u><i>Sterna hirundo</i></u> | Greater yellowlegs | <i>Tringa melanoleuca</i> |
| Forster's tern | <i>Sterna forsteri</i> | <u>Piping plover</u> | <u><i>Charadrius melodus</i></u> |
| Great black-backed gull | <i>Larus marinus</i> | Plovers | <i>Charadrius spp.</i> |
| Gull-billed tern | <i>Gelochelidon nilotica</i> | <u>Red knot</u> | <u><i>Calidris canutus</i></u> |
| Herring gull | <i>Larus argentatus</i> | Ruddy turnstone | <i>Arenaria interpres</i> |
| Laughing gull | <i>Larus atricilla</i> | Sanderling | <i>Calidris alba</i> |
| <u>Least tern</u> | <u><i>Sternula antillarum</i></u> | Semipalmated plover | <i>Charadrius semipalmatus</i> |
| <u>Roseate tern</u> | <u><i>Sterna dougallii</i></u> | Semipalmated sandpiper | <i>Calidris pusilla</i> |
| PASSERINE | | Shorebirds | - |
| Belted kingfisher | <i>Ceryle alcyon</i> | Short-billed dowitcher | <i>Limnodromus griseus</i> |
| Kentucky warbler | <i>Oporornis formosus</i> | Spotted sandpiper | <i>Actitis macularia</i> |
| Marsh wren | <i>Cistothorus palustris</i> | <u>Threatened shorebird</u> | - |
| Nelson's sparrow | <i>Ammodramus nelsoni</i> | <u>Upland sandpiper</u> | <u><i>Bartramia longicauda</i></u> |
| Prothonotary warbler | <i>Protonotaria citrea</i> | Willet | <i>Tringa semipalmata</i> |
| Seaside sparrow | <i>Ammodramus maritimus</i> | Wilson's snipe | <i>Gallinago delicata</i> |
| Swamp sparrow | <i>Melospiza georgiana</i> | WADING | |
| Willow flycatcher | <i>Empidonax traillii</i> | <u>American bittern</u> | <u><i>Botaurus lentiginosus</i></u> |
| | | American woodcock | <i>Scolopax minor</i> |
| | | <u>Black rail</u> | <u><i>Laterallus jamaicensis</i></u> |

SPECIES LIST

| Common Name* | Scientific Name* | Common Name* | Scientific Name* |
|-----------------------------------|-------------------------------------|---------------------------|--------------------------------------|
| BIRDS, cont. | | BIRDS, cont. | |
| <u>Black-crowned night-heron</u> | <u><i>Nycticorax nycticorax</i></u> | Waterfowl | - |
| Cattle egret | <u><i>Bubulcus ibis</i></u> | White-winged scoter | <i>Melanitta fusca</i> |
| Clapper rail | <i>Rallus longirostris</i> | Wood duck | <i>Aix sponsa</i> |
| Glossy ibis | <i>Plegadis falcinellus</i> | FISH | |
| Great blue heron | <i>Ardea herodias</i> | DIADROMOUS | |
| Great egret | <i>Ardea alba</i> | Alewife | <i>Alosa pseudoharengus</i> |
| Green heron | <i>Butorides virescens</i> | American eel | <i>Anguilla rostrata</i> |
| Hérons | - | American shad | <i>Alosa sapidissima</i> |
| <u>King rail</u> | <u><i>Rallus elegans</i></u> | Anadromous fish | - |
| <u>Least bittern</u> | <u><i>Ixobrychus exilis</i></u> | <u>Atlantic sturgeon</u> | <u><i>Acipenser oxyrinchus</i></u> |
| Little blue heron | <i>Egretta caerulea</i> | Blueback herring | <i>Alosa aestivalis</i> |
| Snowy egret | <i>Egretta thula</i> | Brown trout | <i>Salmo trutta</i> |
| Sora | <i>Porzana carolina</i> | Rainbow trout | <i>Oncorhynchus mykiss</i> |
| Tricolored heron | <i>Egretta tricolor</i> | <u>Shortnose sturgeon</u> | <u><i>Acipenser brevirostrum</i></u> |
| Virginia rail | <i>Rallus limicola</i> | Striped bass | <i>Morone saxatilis</i> |
| Wading birds | - | ESTUARINE NURSERY | |
| <u>Yellow-crowned night-heron</u> | <u><i>Nyctanassa violacea</i></u> | Atlantic croaker | <i>Micropogonias undulatus</i> |
| WATERFOWL | | Atlantic herring | <i>Clupea harengus</i> |
| American black duck | <i>Anas rubripes</i> | Atlantic menhaden | <i>Brevoortia tyrannus</i> |
| American wigeon | <i>Anas americana</i> | Bay anchovy | <i>Anchoa mitchilli</i> |
| Black scoter | <i>Melanitta americana</i> | Black drum | <i>Pogonias cromis</i> |
| Brant | <i>Branta bernicla</i> | Black sea bass | <i>Centropristis striata</i> |
| Bufflehead | <i>Bucephala albeola</i> | Bluefish | <i>Pomatomus saltatrix</i> |
| Canada goose | <i>Branta canadensis</i> | Northern kingfish | <i>Menticirrhus saxatilis</i> |
| Canvasback | <i>Aythya valisineria</i> | Northern puffer | <i>Spherooides maculatus</i> |
| Common eider | <i>Somateria mollissima</i> | Nursery fish | - |
| Common merganser | <i>Mergus merganser</i> | Scup | <i>Stenotomus chrysops</i> |
| Common moorhen | <i>Gallinula chloropus</i> | Spot | <i>Leiostomus xanthurus</i> |
| Gadwall | <i>Anas strepera</i> | Summer flounder | <i>Paralichthys dentatus</i> |
| Green-winged teal | <i>Anas crecca</i> | Weakfish | <i>Cynoscion regalis</i> |
| Hooded merganser | <i>Lophodytes cucullatus</i> | White perch | <i>Morone americana</i> |
| Long-tailed duck | <i>Clangula hyemalis</i> | Windowpane | <i>Scophthalmus aquosus</i> |
| Mallard | <i>Anas platyrhynchos</i> | Winter flounder | <i>Pleuronectes americanus</i> |
| Mergansers | - | ESTUARINE RESIDENT | |
| Red-breasted merganser | <i>Mergus serrator</i> | Atlantic silverside | <i>Menidia menidia</i> |
| Ring-necked duck | <i>Aythya collaris</i> | Killifish | <i>Fundulus spp.</i> |
| Ruddy duck | <i>Oxyura jamaicensis</i> | Northern pipefish | <i>Syngnathus fuscus</i> |
| Scaup | <i>Aythya spp.</i> | Silversides | - |
| Snow goose | <i>Chen caerulescens</i> | | |
| Surf scoter | <i>Melanitta perspicillata</i> | | |

SPECIES LIST

| Common Name* | Scientific Name* | Common Name* | Scientific Name* |
|-----------------------|-------------------------------------|-----------------------------------|-----------------------------------|
| FISH, cont. | | FISH, cont. | |
| FRESHWATER | | Spiny dogfish | <i>Squalus acanthias</i> |
| Banded sunfish | <i>Enneacanthus obesus</i> | Thresher shark | <i>Alopias vulpinus</i> |
| Black crappie | <i>Pomoxis nigromaculatus</i> | Tiger shark | <i>Galeocerdo cuvier</i> |
| Bluegill | <i>Lepomis macrochirus</i> | White shark | <i>Carcharodon carcharias</i> |
| Brook trout | <i>Salvelinus fontinalis</i> | Yellowfin tuna | <i>Thunnus albacares</i> |
| Brown bullhead | <i>Ameiurus nebulosus</i> | | |
| Chain pickerel | <i>Esox niger</i> | HABITATS | |
| Common carp | <i>Cyprinus carpio</i> | PLANT | |
| Fathead minnow | <i>Pimephales promelas</i> | <u>Endangered plant</u> | - |
| Golden shiner | <i>Notemigonus crysoleucas</i> | <u>Federally endangered plant</u> | - |
| Largemouth bass | <i>Micropterus salmoides</i> | Rare plant | |
| Pumpkinseed | <i>Lepomis gibbosus</i> | <u>Threatened plant</u> | - |
| Smallmouth bass | <i>Micropterus dolomieu</i> | UPLAND | |
| Walleye | <i>Stizostedion vitreum vitreum</i> | Coastal dune woodland | - |
| White sucker | <i>Catostomus commersoni</i> | Rare upland community | - |
| Yellow perch | <i>Perca flavescens</i> | <u>Sandplain gerardia</u> | <i>Agalinis acuta</i> |
| MARINE BENTHIC | | WETLAND | |
| American sand lance | <i>Ammodytes americanus</i> | <u>Knieskern's beaked rush</u> | <i>Rhynchospora knieskernii</i> |
| Atlantic cod | <i>Gadus morhua</i> | Maritime holly forest | - |
| Atlantic tomcod | <i>Microgadus tomcod</i> | Rare wetland community | - |
| Clearnose skate | <i>Raja eglanteria</i> | <u>Seabeach amaranth</u> | <i>Amaranthus pumilus</i> |
| Goosefish | <i>Lophius americanus</i> | <u>Swamp-pink</u> | <i>Helonias bullata</i> |
| Little skate | <i>Leucoraja erinacea</i> | Vernal pool | - |
| Ocean pout | <i>Macrozoarces americanus</i> | | |
| Pollock | <i>Pollachius virens</i> | HERPETOFAUNA | |
| Red hake | <i>Urophycis chuss</i> | AMPHIBIAN | |
| Silver hake | <i>Merluccius bilinearis</i> | <u>Blue-spotted salamander</u> | <i>Ambystoma laterale</i> |
| Smooth dogfish | <i>Mustelus canis</i> | Eastern spadefoot | <i>Scaphiopus holbrookii</i> |
| Tautog | <i>Tautoga onitis</i> | <u>Eastern tiger salamander</u> | <i>Ambystoma tigrinum</i> |
| Winter skate | <i>Leucoraja ocellata</i> | <u>Endangered amphibian</u> | - |
| MARINE PELAGIC | | Fowler's toad | <i>Anaxyrus fowleri</i> |
| Albacore | <i>Thunnus alalunga</i> | <u>Pine Barrens treefrog</u> | <i>Hyla andersonii</i> |
| Atlantic mackerel | <i>Scomber scombrus</i> | Rare amphibian | - |
| Bluefin tuna | <i>Thunnus thynnus</i> | Rare frog | - |
| Butterfish | <i>Peprilus triacanthus</i> | Rare salamander | - |
| Dusky shark | <i>Carcharhinus obscurus</i> | Southern leopard frog | <i>Lithobates sphenoccephalus</i> |
| Sand tiger | <i>Carcharias taurus</i> | REPTILE | |
| Sandbar shark | <i>Carcharhinus plumbeus</i> | <u>Endangered reptile 1</u> | - |
| Shortfin mako | <i>Isurus oxyrinchus</i> | <u>Threatened reptile 1</u> | - |
| Skipjack tuna | <i>Katsuwonus pelamis</i> | <u>Threatened reptile 2</u> | - |

SPECIES LIST

| Common Name* | Scientific Name* | Common Name* | Scientific Name* |
|---------------------------------|--|--|---|
| HERPETOFAUNA , cont. | | INVERTEBRATES , cont. | |
| <u>Threatened reptile 3</u> | - | CRAB | |
| SNAKE | | Blue crab | <i>Callinectes sapidus</i> |
| Common wormsake | <i>Carphophis amoenus</i> | Horseshoe crab | <i>Limulus polyphemus</i> |
| Eastern milk snake | <i>Lampropeltis triangulum triangulum</i> | GASTROPOD | |
| Northern black racer | <i>Coluber constrictor constrictor</i> | Channeled whelk | <i>Busycon canaliculatum</i> |
| Northern pinesnake | <i>Pituophis melanoleucus melanoleucus</i> | Whelk | - |
| Rare snake | - | INSECT | |
| <u>Timber rattlesnake</u> | <u><i>Crotalus horridus</i></u> | Checkered white | <i>Pontia protodice</i> |
| TURTLE | | Coastal barrens buckmoth | <i>Hemileuca maia ssp. 5</i> |
| <u>Bog turtle</u> | <u><i>Glyptemys muhlenbergii</i></u> | Eastern buckmoth | <i>Hemileuca maia maia</i> |
| Common map turtle | <i>Graptemys geographica</i> | <u>Frosted elfin</u> | <u><i>Callophrys irus</i></u> |
| Common snapping turtle | <i>Chelydra serpentina serpentina</i> | Gray petaltail | <i>Tachopteryx thoreyi</i> |
| Eastern box turtle | <i>Terrapene carolina carolina</i> | Hairy-necked tiger beetle | <i>Cicindela hirticollis</i> |
| <u>Eastern mud turtle</u> | <u><i>Kinosternon subrubrum</i></u> | <u>Hessel's hairstreak</u> | <u><i>Callophrys hesseli</i></u> |
| <u>Green sea turtle</u> | <u><i>Chelonia mydas</i></u> | Jersey jair underwing | <i>Catocala jair ssp. 2</i> |
| <u>Kemp's ridley sea turtle</u> | <u><i>Lepidochelys kempii</i></u> | Leonard's skipper | <i>Hesperia leonardus</i> |
| <u>Leatherback sea turtle</u> | <u><i>Dermochelys coriacea</i></u> | <u>Little bluet</u> | <u><i>Enallagma minusculum</i></u> |
| <u>Loggerhead sea turtle</u> | <u><i>Caretta caretta</i></u> | Monarch butterfly | <i>Danaus plexippus</i> |
| Northern diamondback terrapin | <i>Malaclemys terrapin terrapin</i> | <u>Myrina Fritillary</u> | <u><i>Boloria selene myrina</i></u> |
| Painted turtle | <i>Chrysemys picta</i> | <u>Northeastern beach tiger beetle</u> | <u><i>Cicindela dorsalis dorsalis</i></u> |
| Spotted turtle | <i>Clemmys guttata</i> | <u>Pine Barrens bluet</u> | <u><i>Enallagma recurvatum</i></u> |
| <u>Wood turtle</u> | <u><i>Glyptemys insculpta</i></u> | Pine Barrens underwing | <i>Catocala herodias gerhardi</i> |
| INVERTEBRATES | | Rare insect | - |
| BIVALVE | | Sandplain heterocampa | <i>Heterocampa varia</i> |
| Alewife floater | <i>Anodonta implicata</i> | <u>Scarlet bluet</u> | <u><i>Enallagma pictum</i></u> |
| Atlantic razor | <i>Siliqua costata</i> | INVERTEBRATES | |
| Atlantic surfclam | <i>Spisula solidissima</i> | Rare, LT, or LE invertebrate | - |
| Bay scallop | <i>Argopecten irradians</i> | LOBSTER | |
| Blue mussel | <i>Mytilus edulis</i> | American lobster | <i>Homarus americanus</i> |
| Eastern elliptio | <i>Elliptio complanata</i> | MARINE MAMMALS | |
| Eastern oyster | <i>Crassostrea virginica</i> | DOLPHIN | |
| Northern quahog | <i>Mercenaria mercenaria</i> | Bottlenose dolphin | <i>Tursiops truncatus</i> |
| Ocean quahog | <i>Arctica islandica</i> | Harbor porpoise | <i>Phocoena phocoena</i> |
| Softshell clam | <i>Mya arenaria</i> | PINNIPED | |
| Tidewater mucket | <i>Leptodea ochracea</i> | Gray seal | <i>Halichoerus grypus</i> |
| CEPHALOPOD | | Harbor seal | <i>Phoca vitulina</i> |
| Longfin squid | <i>Loligo pealeii</i> | Harp seal | <i>Pagophilus groenlandicus</i> |
| | | Seals | - |

SPECIES LIST

| Common Name* | Scientific Name* |
|--------------|------------------|
|--------------|------------------|

MARINE MAMMALS, cont.

WHALE

| | |
|-----------------------------------|--------------------------------------|
| <u>Fin whale</u> | <u><i>Balaenoptera physalus</i></u> |
| <u>Humpback whale</u> | <u><i>Megaptera novaeangliae</i></u> |
| <u>North Atlantic right whale</u> | <u><i>Eubalaena glacialis</i></u> |

TERRESTRIAL MAMMALS

BAT

| | |
|------------------------------------|--------------------------------------|
| <u>Eastern small-footed myotis</u> | <u><i>Myotis leibii</i></u> |
| <u>Indiana myotis</u> | <u><i>Myotis sodalis</i></u> |
| <u>Northern myotis</u> | <u><i>Myotis septentrionalis</i></u> |

SMALL MAMMAL

| | |
|-------------------------------|---|
| <u>Allegheny woodrat</u> | <u><i>Neotoma magister</i></u> |
| <u>New England cottontail</u> | <u><i>Sylvilagus transitionalis</i></u> |

* Underlined species are listed as either threatened or endangered under the federal ESA, and/or are listed as threatened, endangered, or special concern by New York and/or New Jersey

SHORELINE DESCRIPTIONS

EXPOSED, ROCKY SHORES

ESI = 1A

DESCRIPTION

- The intertidal zone is steep (greater than 30° slope), with very little width; solid and composed of bedrock
- Sediment accumulations are uncommon because waves and currents remove debris slumped from the eroding cliffs
- There is strong vertical zonation of intertidal biological communities in the estuarine parts of the river
- This shoreline type is regularly exposed to wave action and strong currents
- Wave reflection is a common phenomenon along the outer coast
- Species density and diversity vary greatly depending on exposure and salinity, but barnacles, snails, mussels, amphipods, and macroalgae can be abundant

PREDICTED OIL BEHAVIOR

- In the lower estuary and outer coast, oil is held offshore by waves reflecting off the steep, hard surfaces; Any oil that is deposited is rapidly removed from exposed faces
- Along the river, oil can form a band at the high water line
- The most resistant oil would remain as a patchy band at or above the high-water line



- Impacts to intertidal communities are expected to be short-term in duration; An exception would be where heavy concentrations of a light refined product comes ashore very quickly

RESPONSE CONSIDERATIONS

- Cleanup is usually not required
- Access can be difficult and dangerous

SHORELINE DESCRIPTIONS

EXPOSED, SOLID MAN-MADE STRUCTURES

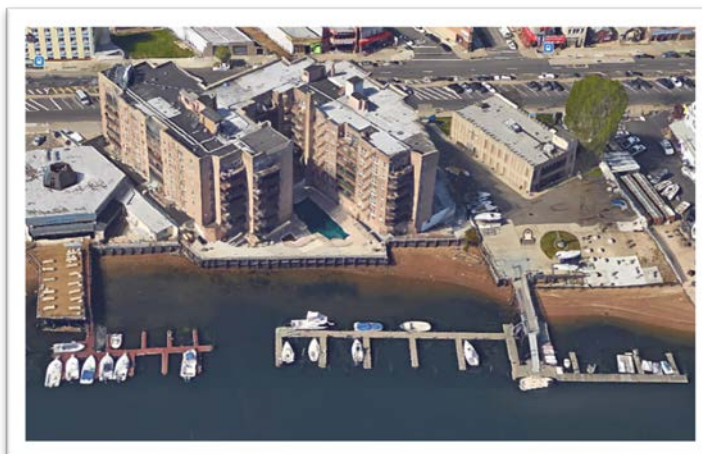
ESI = 1B

DESCRIPTION

- These structures are solid, man-made structures such as seawalls, jetties, breakwaters, groins, revetments, piers, and port facilities
- Many structures are constructed of concrete, wood, or metal
- Often there is no exposed substrate at low tide, but multiple habitats are indicated if present
- They are built to protect the shore from erosion by waves, boat wakes, and currents, and thus are exposed to relatively high-energy processes
- Attached animals and plants are variable in cover, with sparse biota in fresh/brackish areas and higher biota in salt water areas
- Common in highly developed industrial and port areas, as well as commercial zones

PREDICTED OIL BEHAVIOR

- Oil is held offshore by waves reflecting off the steep, hard surface in exposed settings
- Oil readily adheres to the dry, rough surfaces, but it does not adhere to wet substrates



- The most resistant oil would remain as a band at or above the high-tide line

RESPONSE CONSIDERATIONS

- Cleanup is usually not required
- High-pressure water spraying may be conducted to:
 - remove persistent oil in crevices;
 - minimize aesthetic damage; and
 - prevent chronic leaching of oil from the structure

SHORELINE DESCRIPTIONS

EXPOSED, WAVE-CUT PLATFORMS IN MUD

ESI = 2A

DESCRIPTION

- This habitat occurs where the shoreline is eroding across a wetland, leaving behind a wave-cut platform on the old marsh soils; there is often a thin sand/shell washover beach on top of the marsh
- The platform is usually composed of a hard compact peat-rich clay with numerous holes from old root cavities
- The platform width can vary from a few feet to tens of feet
- Species density and diversity are low because they are highly eroding

PREDICTED OIL BEHAVIOR

- Oil will not adhere to the wet muddy surface, but could penetrate root cavities if present
- Persistence of any stranded oil is usually short-term, except where trapped in slump blocks eroded from the marsh scarp



RESPONSE CONSIDERATIONS

- Cleanup is usually not required except for areas of high biological use and under heavy oil accumulations
- Where the high-tide area is accessible, it may be feasible to manually remove heavy oil accumulations and oiled debris

SHORELINE DESCRIPTIONS

EXPOSED SCARPS AND STEEP SLOPES IN MUD OR CLAY

ESI = 2B

DESCRIPTION

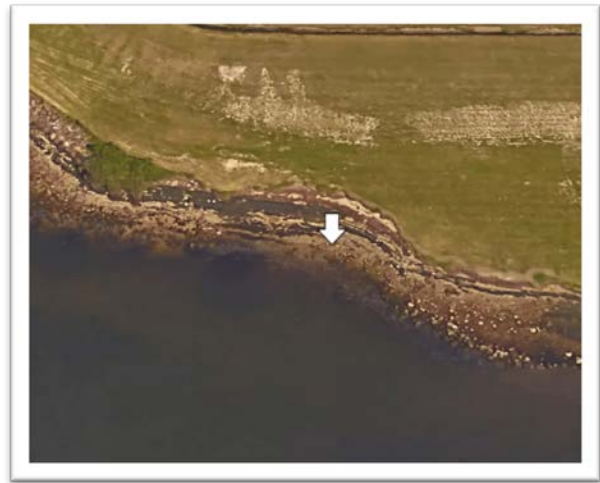
- These habitats generally occur along tidal channels and major river tributaries in the marsh where the currents cut a steep bank into the marsh soils
- Scarp heights vary from about 1 to 3 feet and usually consist of a heavily rooted, peaty soil
- May be fronted by a narrow beach of fine- to medium-grained sand
- Generally low biological utilization due to strong currents
- Typically backed by wetland vegetation
- Uncommon, occurring mostly along the outer exposed margins of marsh areas.

PREDICTED OIL BEHAVIOR

- Oil is not expected to adhere to the wet, impermeable clay surface
- There may be a thin band of oil left at or above the high water line

RESPONSE CONSIDERATIONS

- Cleanup is usually not required, because any stranded oil is quickly removed by wave action



- Access may be difficult and dangerous
- Where the high-tide area is accessible, it may be feasible to remove the heavy oil accumulations and oiled debris in order to protect a near shore marine resource, such as marine birds

SHORELINE DESCRIPTIONS

FINE- TO MEDIUM-GRAINED SAND BEACHES

ESI = 3A

DESCRIPTION

- These beaches are flat to moderately sloping and relatively hard packed
- They are composed of quartz sand
- Beachface sediments are subject to regular reworking by waves
- There can be heavy accumulations of wrack present
- They are utilized by birds for nesting, foraging, and loafing, and by turtles for nesting
- They are generally areas of heavy recreational use

PREDICTED OIL BEHAVIOR

- Light oil accumulations will be deposited as oily swashes or bands along the upper intertidal zone
- Heavy oil accumulations will cover the entire beach surface; oil will be lifted off the lower beach with the rising tide
- Maximum penetration of oil into fine- to medium-grained sand is about 10-15 cm
- Burial of oiled layers by clean sand within the first week after a spill typically will be less than 30 cm along the upper beach face
- Organisms living in the beach sediment may be killed by smothering or lethal oil concentrations in the interstitial water
- Biological impacts include temporary declines in infauna, which can affect important shorebird foraging areas

RESPONSE CONSIDERATIONS

- These beaches are among the easiest shoreline types to clean
- Cleanup should concentrate on removing oil and oily debris from the upper swash zone once oil has come ashore



- Traffic through dune areas should be limited to prevent contamination of clean areas and disturbance of habitat and birds
- Manual cleanup is advised to minimize the volume of sand removed from the shore and requiring disposal, particularly for non-amenity beaches
- Mechanical sand sifters may be effective on oil in the form of tarballs and patties
- All efforts should focus on preventing the mixing of oil deeper into the sediments by vehicular and foot traffic
- Mechanical reworking of the sediment into the surf zone may be used as a final polishing step for stained sand treatment without sediment removal

SHORELINE DESCRIPTIONS

SCARPS AND STEEP SLOPES IN SAND

ESI = 3B

DESCRIPTION

- This shoreline type occurs where sandy bluffs are undercut by waves or currents and slump
- The scarps show evidence of active erosion, and beaches in front of the scarps are narrow or absent
- Trees growing at the top of these slopes are eventually undercut and woody debris can accumulate at the base of the scarp
- Biological utilization by birds and infauna is low

PREDICTED OIL BEHAVIOR

- Any stranded oil will concentrate at the high-water line and may penetrate sandy sediments if a beach is present
- Oil will also adhere to the dry surfaces of any woody debris that has accumulated at the base of the scarp
- Burial risk is low except when slumping of the bluff occurs
- Active erosion of the scarp will remove the oil



RESPONSE CONSIDERATIONS

- The need for removal of oiled sediments and debris should be carefully evaluated because of the potential for increased erosion
- Closely supervised manual labor should be used so that the minimal amount of material is removed during cleanup
- Large woody debris may be wiped down with sorbents to reduce contact hazards by wildlife; smaller debris can be cut into smaller pieces for removal

SHORELINE DESCRIPTIONS

COARSE-GRAINED SAND BEACHES

ESI = 4

DESCRIPTION

- These beaches are moderate-to-steeply sloping, are of variable width, and have soft sediments. These characteristics combine to lower their trafficability
- Species density and diversity is generally lower than on fine-grained sand beaches

PREDICTED OIL BEHAVIOR

- During small spills, oil will be deposited primarily as a band along the high-tide line
- Under very heavy accumulations, oil may spread across the entire beach face, though the oil will be lifted off the lower part of the beach with the rising tide
- Penetration of oil into coarse-grained sand can reach 25 cm
- Burial of oiled layers by clean sand can be as rapid as one tidal cycle and to depths of 60 cm or more
- Burial to depths of over one meter is possible if the oil comes ashore at the start of a depositional period
- Biological impacts include temporary declines in infaunal populations, which can also affect important shorebird foraging areas
- Organisms living in the beaches may be killed by smothering or lethal oil concentrations in interstitial water

RESPONSE CONSIDERATIONS

- Removed oil primarily from the upper swash lines



- Removal of sediment should be limited to avoid erosion problems
- Mechanical reworking of the sediment into the surf zone may be used as a final polishing step to treat stained sand without sediment removal
- Activity in the oiled sand should be limited to prevent mixing oil deeper into the beach
- Use of heavy equipment for oil/sand removal may result in the removal of excessive amounts of sand; manual cleanup may be more effective

SHORELINE DESCRIPTIONS

MIXED SAND AND GRAVEL BEACHES

ESI = 5

DESCRIPTION

- Moderately sloping beaches composed of a mixture of sand and gravel (gravel component should comprise between 20 to 80 percent of total sediments)
- Because of the mixed sediment sizes, there may be some areas on the beach of pure sand, pebble, or cobbles
- Sediment desiccation and mobility on exposed beaches can cause low densities of attached animals and plants
- There can be large-scale changes in the sediment distribution patterns depending on the season, due to the transport of the sand fraction offshore during storm events
- Substrate had medium-to-high permeability
- Very common throughout the study area



PREDICTED OIL BEHAVIOR

- During small spills, oil will be deposited along and above the high-tide swash
- Large spills will spread across the entire intertidal area
- Oil penetration into the beach sediments may be up to 50 cm; however, the sand fraction can be quite mobile, and oil behavior is much like on a sand beach if the sand fraction exceeds about 40 percent
- Burial of oil may be deep at and above the high-tide line, where oil tends to persist, particularly where beaches are only intermittently exposed to waves
- In sheltered pockets on the beach, pavements of asphalted sediments can form if there is no removal of heavy oil accumulations because most of the oil remains on the surface
- Once formed, these asphalt pavements can persist for years

RESPONSE CONSIDERATIONS

- Remove heavy accumulations of pooled oil as soon as possible
- All oiled debris should be removed
- Sediment removal should be limited as much as possible
- Low-pressure flushing can be used to float liquid oil away from the sediments for recovery by skimmers or sorbents. High-pressure spraying should be avoided because of potential for transporting contaminated finer sediments (sand) to the lower intertidal or subtidal zones
- Mechanical reworking of lightly oiled sediments from the high-tide zone to the middle intertidal zone can be effective in areas regularly exposed to wave activity (as evidenced by storm berms)
- In-place tilling/excavation may be used to reach deeply buried oil in layers in the middle zone on exposed beaches

SHORELINE DESCRIPTIONS

GRAVEL BEACHES

ESI = 6A

DESCRIPTION

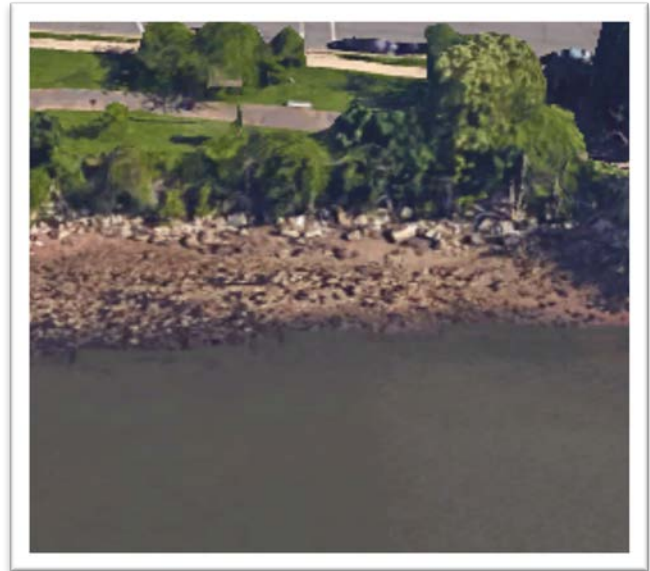
- Gravel beaches can be very steep, with multiple wave-built berms forming the upper beach. Gravel beaches have the lowest trafficability of all beach types and may contain shell and woody debris
- Because of the high mobility of sediments on exposed gravel beaches, there are low densities of animals and plants.
- There are low densities of infauna because the coarse sediments dry out during low tide
- Most permeable of all beach types

PREDICTED OIL BEHAVIOR

- Deep penetration of stranded oil is likely because of their high permeability
- On exposed beaches, oil can be pushed over the high-tide and storm berms, pooling and persisting above the normal zone of wave wash
- Long-term persistence will be controlled by the depth of routine reworking by the waves
- Along sheltered portions of the shorelines, chronic sheening and the formation of asphalt pavements is likely where accumulations are heavy

RESPONSE CONSIDERATIONS

- Heavy accumulations of pooled oil should be removed quickly from the upper beach
- All oiled debris should be removed
- Sediment removal should be limited as much as possible



- High-pressure spraying should be avoided because of the potential for transporting contaminated finer sediments (sand) to the lower intertidal or subtidal zones
- Low-pressure flushing can be used to float fresh oil away from the sediments for recovery by skimmers or sorbents
- Mechanical reworking of oiled sediments from the high-tide line to the lower beachface can be effective in areas regularly exposed to wave activity; the presence of multiple storm berms is evidence of wave activity
- In-place tilling may be used to reach deeply buried oil layers along the mid-intertidal zone on exposed beaches

SHORELINE DESCRIPTIONS

RIPRAP

ESI = 6B

DESCRIPTION

- Riprap structures are composed of cobble- to boulder-sized blocks of granite, limestone, bedrock or concrete
- Riprap structures are common along shorelines exposed to wave action and are used for shoreline protection and tidal inlet stabilization (jetties)
- Attached biota are sparse to moderate on exposed riprap

PREDICTED OIL BEHAVIOR

- Oil adheres readily to the rough surfaces of the blocks
- Deep penetration of oil between the blocks is likely
- Uncleaned oil can cause chronic leaching until the oil hardens

RESPONSE CONSIDERATIONS

- When the oil is fresh and liquid, high-pressure spraying and/or water flooding may be effective, making sure to recover all mobilized oil



- Heavy and weathered oils are more difficult to remove, requiring scraping and/or hot-water spraying
- It may be necessary to remove and replace heavily oiled blocks in high-use areas

SHORELINE DESCRIPTIONS

EXPOSED TIDAL FLATS

ESI = 7

DESCRIPTION

- Exposed tidal flats are broad, flat, intertidal areas composed primarily of sand and minor amounts of gravel
- The presence of sand and gravel indicates that tidal currents and waves are strong enough to mobilize the sediments
- They are often associated with another shoreline type on the landward side of the flat, though they can occur as separate shoals; they are commonly associated with tidal inlets
- Biological utilization can be very high, with large numbers of infauna, heavy use by birds for roosting and foraging, and by foraging fish



PREDICTED OIL BEHAVIOR

- Oil does not usually adhere to the surface of exposed tidal flats, but rather moves across the flat and accumulates at the high-tide line
- Deposition of oil on the flat may occur on a falling tide if concentrations are heavy
- Oil does not penetrate water-saturated sediments, but can penetrate into the tops of the bars and burrows when they dry out at low tide

- Biological damage may be severe, primarily to infauna, thereby reducing food sources for birds and other predators

RESPONSE CONSIDERATIONS

- Currents and waves can be very effective in natural removal of the oil
- Cleanup is very difficult (and possible only during low tides)
- The use of machinery should be restricted to prevent mixing of oil into the sediments

SHORELINE DESCRIPTIONS

SHELTERED, IMPERMEABLE ROCKY SHORES

ESI = 8A

DESCRIPTION

- The substrate is solid and composed of bedrock
- This shoreline type is sheltered from large waves and strong currents
- Sediments (rock, debris, etc.) may accumulate at the base of this shoreline type
- The slope of the intertidal zone is generally moderate to steep (greater than 15°) with little width

PREDICTED OIL BEHAVIOR

- Heavy oils tend to coat the dry, irregular surface
- Stranded oil will persist because of low energy setting

RESPONSE CONSIDERATIONS

- Low-pressure flushing at ambient temperatures is most effective when the oil is fresh and still liquid



- Care must be taken during flushing operations to prevent oily effluents from affecting biologically rich, lower intertidal levels
- Where the high-tide area is accessible, it may be feasible to remove heavy oil accumulations and oiled debris

SHORELINE DESCRIPTIONS

SHELTERED, SOLID MAN-MADE STRUCTURES

ESI = 8B

DESCRIPTION

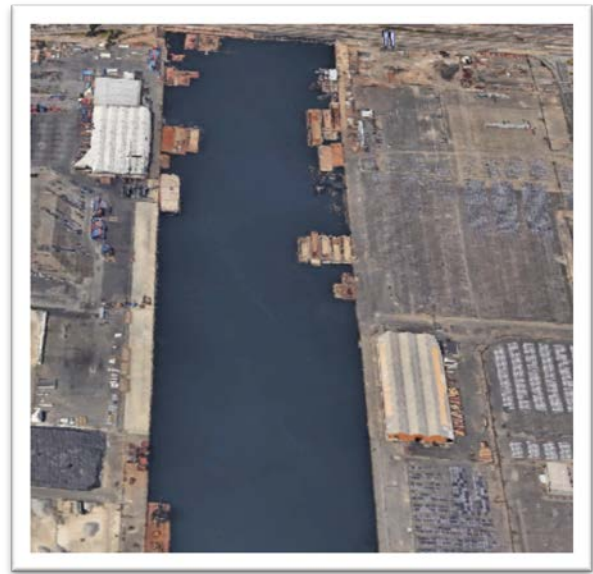
- These structures are solid man-made structures such as seawalls, groins, revetments, piers, and port facilities
- Most structures are constructed of concrete, wood, or metal
- Often there is no exposed beach at low tide, but multiple habitats are indicated if present
- Attached animal and plant life is highly variable

PREDICTED OIL BEHAVIOR

- Oil will adhere readily to rough surfaces, particularly along the high-tide line, forming a distinct oil band
- If the oil is not removed, it may cause chronic sheening until the oil hardens
- The lower intertidal zone usually stays wet (particularly if algae-covered), preventing oil from adhering to the surface

RESPONSE CONSIDERATIONS

- Cleanup of seawalls is usually conducted for aesthetic reasons or to prevent sheening



- Low- to high-pressure spraying at ambient water temperatures is most effective when the oil is fresh
- High-pressure, hot-water flushing will be required for heavy and weathered oil

SHORELINE DESCRIPTIONS

SHELTERED RIPRAP

ESI = 8C

DESCRIPTION

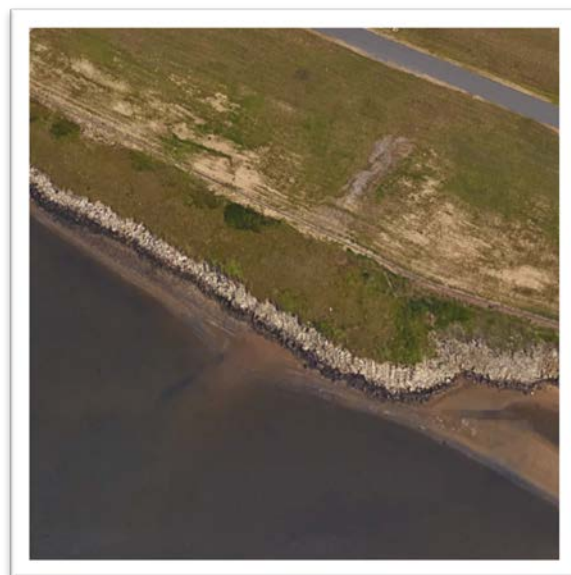
- Riprap structures are composed of cobble- to boulder-sized blocks of granite, limestone, bedrock or concrete
- These structures are found inside harbors and bays in developed areas, sheltered from direct exposure to waves
- Attached biota are highly variable

PREDICTED OIL BEHAVIOR

- Oil adheres readily to the rough surfaces
- Deep penetration of oil between the blocks is likely
- If oil is left uncleaned, it may cause chronic leaching until the oil hardens

RESPONSE CONSIDERATIONS

- High-pressure spraying may be required to remove oil for aesthetic reasons and to prevent leaching of oil from the structure
- Cleanup crews should make sure to recover all released oil



- It may be necessary to remove and replace heavily oiled riprap in high-use areas

SHORELINE DESCRIPTIONS

SHELTERED TIDAL FLATS

ESI = 9A

DESCRIPTION

- Sheltered tidal flats are composed primarily of mud with minor amounts of sand and shell
- They are present in calm-water habitats, sheltered from regular wave activity, and are usually backed by marshes
- The sediments are very soft and cannot support even light foot traffic in many areas
- They can have heavy wrack deposits along the upper fringe
- Sheltered tidal flats can be sparsely to heavily covered with algae and/or seagrass
- Large concentrations of shellfish, worms, and snails can be found on and in the sediments
- They are heavily utilized by birds for foraging



PREDICTED OIL BEHAVIOR

- Oil does not usually adhere to the surface of sheltered tidal flats, but rather moves across the flat and accumulates at the high-tide line
- Deposition of oil on the flat may occur on a falling tide if concentrations are heavy
- Oil will not penetrate the water-saturated sediments, but could penetrate burrows or other crevices in muddy sediments
- In areas of high suspended sediments, sorption of oil can result in deposition of contaminated sediments on the flats
- Biological damage can be severe

RESPONSE CONSIDERATIONS

- These are high-priority areas necessitating the use of spill protection devices to limit oil-spill impact; deflection or sorbent booms and open water skimmers should be used
- Cleanup of the flat surface is very difficult because of the soft substrate; many methods may be restricted
- Low-pressure flushing, vacuum, and deployment of sorbents from shallow-draft boats may be appropriate for use under heavy oiling

SHORELINE DESCRIPTIONS

VEGETATED LOW BANKS

ESI = 9B

DESCRIPTION

- These habitats are either low banks with grasses or low eroding banks with trees and tree roots exposed to the water
- They are flooded occasionally by high water
- These shorelines are most commonly found in fresh or brackish water settings
- These habitats can be important for fish, shellfish, birds and terrestrial mammals

PREDICTED OIL BEHAVIOR

- During low water stages there is little impact, though the oil can strand as a narrow band of sediment at the water level
- During high water stages, the oil could cover and coat the vegetation
- Oiling may cause loss of the grasses, but the trees should survive unless oil penetrates and persists in the substrate

RESPONSE CONSIDERATIONS

- Low-pressure flushing of oiled areas may be effective in removing moderate to heavy accumulations of fresh oil from along the banks



- Sorbent and containment boom should be placed on the water side of the cleanup operations to contain and collect oil outflow
- Low- to high-pressure flushing can be used to remove weathered oil from tree roots and trunks, if deemed necessary in areas of high-use by humans or wildlife

SHORELINE DESCRIPTIONS

SALT- AND BRACKISH-WATER MARSHES

ESI = 10A

DESCRIPTION

- These are intertidal wetlands containing emergent, herbaceous vegetation
- Width of the marsh can vary widely, from a narrow fringe to extensive areas
- Sediments are composed of organic-rich mud except on the margins of islands where sand is abundant
- Exposed areas are located along bays with wide fetches and along heavily trafficked waterways
- Sheltered areas and tidal creeks are not exposed to significant wave or boat wake activity
- Resident flora and fauna are abundant and diverse, with high utilization by birds, fish, and shellfish

PREDICTED OIL BEHAVIOR

- Oil adheres readily to intertidal vegetation
- The band of coating will vary widely, depending upon the water level at the time oil slicks are in the vegetation; there may be multiple bands
- Large slicks will persist through multiple tidal cycles and coat the entire stem from the high-tide line to the base
- If the vegetation is thick, heavy oil coating will be restricted to the outer fringe, although lighter oils can penetrate deeper, to the limit of tidal influence
- Medium to heavy oils do not readily adhere to or penetrate the fine sediments, but can pool on the surface or penetrate into burrows
- Light oils can penetrate the top few centimeters of sediment and deeply into burrows and cracks (up to one meter)



RESPONSE CONSIDERATIONS

- Under light oiling, the best practice is natural recovery; natural removal processes and rates should be evaluated prior to conducting cleanup
- Heavy accumulations of pooled oil can be removed by vacuum, sorbents, or low-pressure flushing.
- Cleanup activities should be carefully supervised to avoid vegetation damage
- Any cleanup activity must not mix the oil deeper into the sediments; trampling of the roots should be minimized through the use of walking boards
- Cutting of oiled vegetation should only be considered when other resources present are at great risk from leaving the oiled vegetation in place

SHORELINE DESCRIPTIONS

FRESHWATER MARSHES

ESI = 10B

DESCRIPTION

- These are grassy wetlands composed of emergent herbaceous vegetation
- They occur upstream of brackish vegetation and along major rivers and tributary creeks
- Those along major channels are exposed to strong currents and boat wakes; smaller channels tend to be sheltered
- The substrate is seldom exposed because daily water level changes are low; greater changes result from floods
- Resident flora and fauna are abundant and diverse, with high utilization by birds and fish



PREDICTED OIL BEHAVIOR

- Oil adheres readily to the vegetation
- The band of coating will vary widely, depending upon the water level at the time oil slicks are in the vegetation; there may be multiple bands
- If the vegetation is thick, heavy oil coating will be restricted to the outer fringe, although lighter oils can penetrate deeper
- Medium to heavy oils do not readily adhere to or penetrate the fine sediments, but can pool on the surface or penetrate into burrows

RESPONSE CONSIDERATIONS

- Under light oiling, the best practice is natural recovery; natural removal processes and rates

should be evaluated prior to conducting cleanup

- Heavy accumulations of pooled oil can be removed by vacuum, sorbents, or low-pressure flushing
- Cleanup activities should be carefully supervised to avoid vegetation damage
- Any cleanup activity must not mix the oil deeper into the sediments; trampling of the roots should be minimized through the use of walking boards
- Cutting of oiled vegetation should only be considered when other resources present are at great risk from leaving the oiled vegetation in place

SHORELINE DESCRIPTIONS

SWAMPS

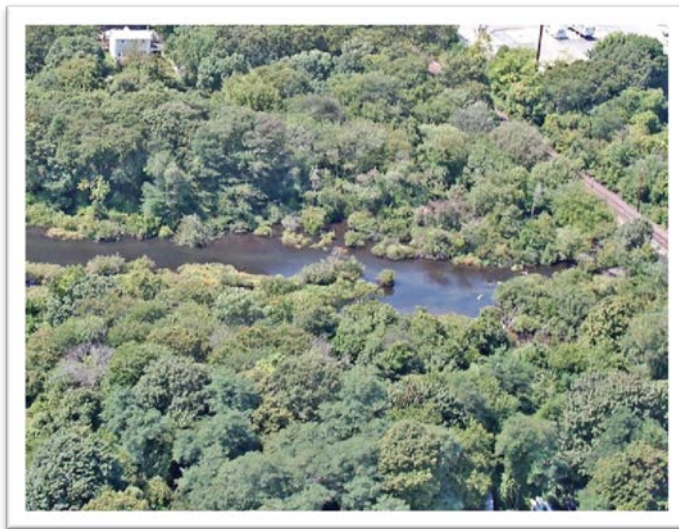
ESI = 10C

DESCRIPTION

- Swamps consist of shrubs and hardwood forested wetlands, essentially flooded forests; vegetation is taller, on average, greater than 6 m
- The sediment tends to be silty clay with large amounts of organic debris
- They are seasonally flooded, though there are many low, permanently flooded areas
- Resident flora and fauna are abundant with numerous species

PREDICTED OIL BEHAVIOR

- Oil behavior depends on whether the swamp is flooded or not
- During floods, most of the oil passes through the forest, coating the vegetation at the waterline, which changes levels throughout the flood event
- Woody vegetation is less sensitive than grasses to oil coating
- Some oil can be trapped and pooled on the swamp floodplain as water levels drop
- Penetration into the floodplain soils is usually limited because of high water levels, saturated soils, muddy composition, surface organic debris, and vegetation cover
- There can be large amounts of oily debris
- During dry periods, terrestrial spills flow downhill and accumulate in depressions or reach water bodies



RESPONSE CONSIDERATIONS

- Under light oiling, the best practice is to let the area recover naturally
- Heavy accumulations of pooled oil can be removed by vacuum, sorbents, or low-pressure flushing. During flushing, care must be taken to prevent transporting oil to sensitive areas down slope or along shore
- Under stagnant water conditions, herding of oil with water spray may be needed to push oil to collection areas
- Oily debris can be removed where there is access
- Any cleanup activity must not mix the oil deeper into the sediments; use walking boards or restrict foot traffic

SHORELINE DESCRIPTIONS

SCRUB-SHRUB WETLANDS

ESI = 10D

DESCRIPTION

- Scrub-shrub wetlands consist of woody vegetation less than 6 m tall including true shrubs, small trees, and trees and shrubs that are stunted due to environmental conditions
- The sediments are silty clay mixed with organic debris
- They are seasonally flooded, though there are many low, permanently flooded areas
- Resident flora and fauna are abundant and diverse

PREDICTED OIL BEHAVIOR

- Oil behavior depends on water level
- During high water, most of the oil passes through the wetland, coating the vegetation above the waterline
- Woody vegetation is less sensitive than grasses to oil
- Some oil can be trapped and pooled on the surface as water levels drop
- Penetration into the soils is usually limited because of high water levels, muddy composition, surface organic debris, and vegetation cover
- There can be large amounts of oily debris
- During dry periods, terrestrial spills flow downhill and accumulate in depressions or reach water bodies

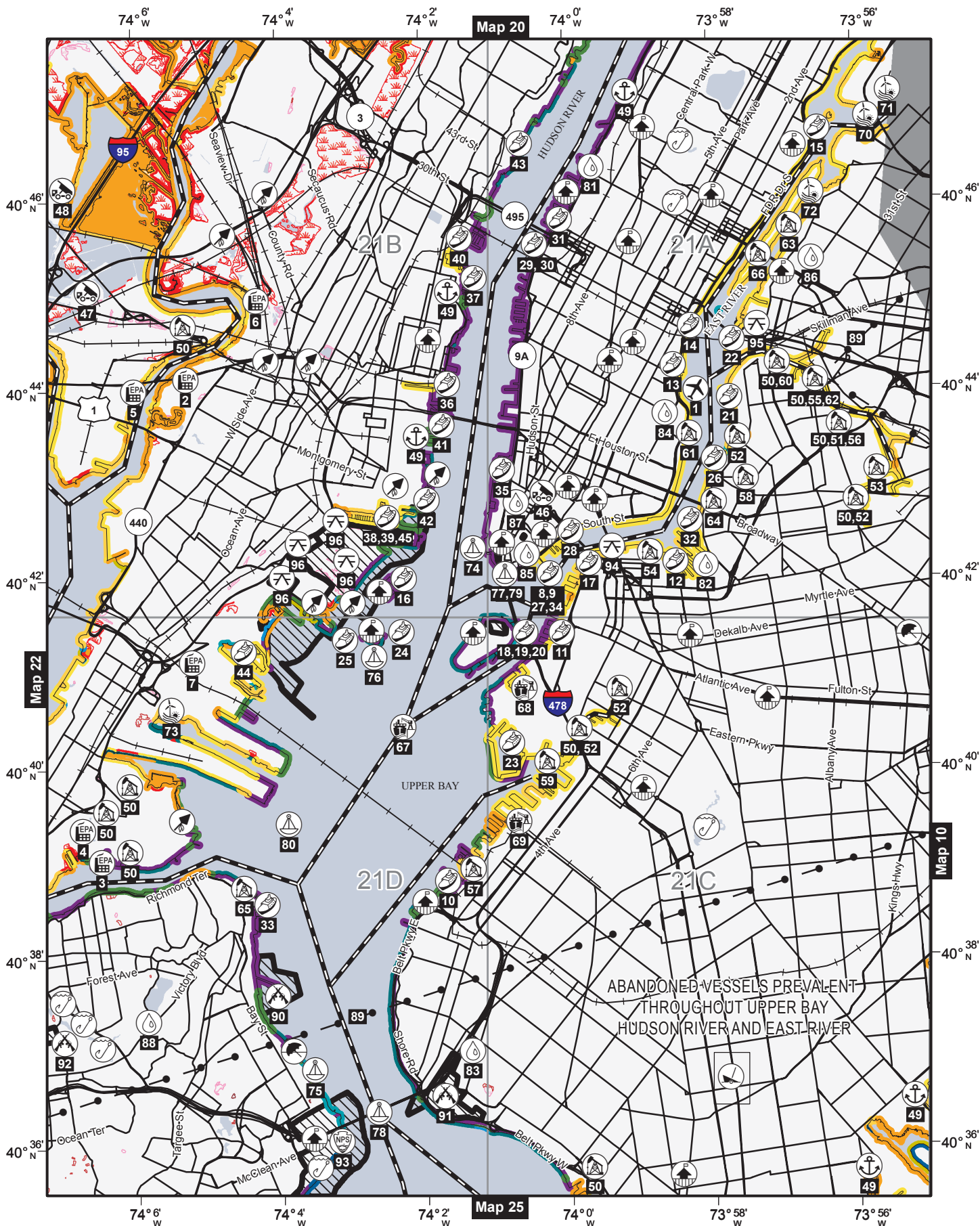


RESPONSE CONSIDERATIONS

- Under light oiling, the best practice is natural recovery
- Heavy accumulations of pooled oil can be removed by vacuum, sorbents, or low-pressure flushing
- Under stagnant water conditions, herding of oil with water spray may be needed to push oil to collection areas
- Oily debris can be removed where there is access
- Any cleanup activity must not mix the oil deeper into the sediments. Trampling of the roots must be minimized through the use of walking boards or restricting foot traffic
- Woody vegetation should not be cut

ENVIRONMENTAL SENSITIVITY INDEX MAPS





Map 21

NY/ NJ Metropolitan Area



SEE BACK OF MAP
for details about mapped resources and
other resources that occur in mapped area.
Data Published: February 2016

0 Not for Navigation 2 Miles
0 2 Kilometers

1:100,000



Map 21
New York and New Jersey Metropolitan Area

HUMAN USE RESOURCES

| DISPLAYED ON MAP (POINTS) | | | | |
|---------------------------|--------------|---|------------------------------------|--------------|
| Map ID | Type | Name | Contact | Phone |
| 1 | AIRPORT | NEW YORK SKYPORTS INC | | |
| 2 | EPA FACILITY | AHOLD ECOMMERCE SALES COMPANY LLC | SR.MANAGER OF OPERATIONS | 551-222-4040 |
| 3 | EPA FACILITY | BAYONNE PLANT HOLDING L.L.C. | FACILITY MANAGER | 201-437-0473 |
| 4 | EPA FACILITY | IMTT-BAYONNE | EHS DIRECTOR | 201-437-2200 |
| 5 | EPA FACILITY | KUEHNE CHEMICAL CO., INC. | MANAGER OF REGULATORY AFFAIRS | 201-697-9700 |
| 6 | EPA FACILITY | PSEG FOSSIL, LLC - HUDSON GENERATING STATION | OPERATION MANAGER | 201-217-3774 |
| 7 | EPA FACILITY | TROPICANA NORTHEAST OPERATIONS | MAINT. & UTILITIES SENIOR RESOURCE | 201-395-6053 |
| 8 | FERRY | BATTERY MARITIME BUILDING (SLIP 5) | | |
| 9 | FERRY | BATTERY MARITIME BUILDING (SLIP 6) | | |
| 10 | FERRY | BROOKLYN ARMY TERMINAL | | |
| 11 | FERRY | BROOKLYN BRIDGE PARK PIER 6 | | |
| 12 | FERRY | BROOKLYN NAVY YARDS (MUNICIPAL FERRY) | | |
| 13 | FERRY | E. 23RD STREET | | |
| 14 | FERRY | E. 34TH STREET | | |
| 15 | FERRY | E. 90TH STREET | | |
| 16 | FERRY | ELLIS ISLAND | | |
| 17 | FERRY | FULTON ST FERRY LANDING | | |
| 18 | FERRY | GOVERNOR'S ISLAND PIER | | |
| 19 | FERRY | GOVERNORS ISLAND / SPUD BARGE | | |
| 20 | FERRY | GOVERNORS ISLAND | | |
| 21 | FERRY | GREENPOINT | | |
| 22 | FERRY | HUNTERS POINT | | |
| 23 | FERRY | IKEA LANDING | | |
| 24 | FERRY | LIBERTY ISLAND (EAST PIER) | | |
| 25 | FERRY | LIBERTY ISLAND (WEST PIER) | | |
| 26 | FERRY | NORTH WILLIAMSBURG | | |
| 27 | FERRY | PIER 11/WALL ST FERRY TERMINAL | | |
| 28 | FERRY | PIER 17 | | |
| 29 | FERRY | PIER 78 FERRY LANDING | | |
| 30 | FERRY | PIER 79/WEST MIDTOWN FERRY TERMINAL | | |
| 31 | FERRY | PIER 84 | | |
| 32 | FERRY | SCHAEFER LANDING | | |
| 33 | FERRY | ST GEORGE/STATEN ISLAND FERRY TERMINAL | | |
| 34 | FERRY | WHITEHALL/STATEN ISLAND FERRY TERMINAL | | |
| 35 | FERRY | WORLD FINANCIAL CENTER FERRY TERMINAL | | |
| 36 | FERRY | HOBOKEN FERRY TERMINAL | | |
| 37 | FERRY | HOBOKEN NORTH-14TH STREET FERRY TERMINAL | | |
| 38 | FERRY | LIBERTY HARBOR-MARIN BOULEVARD FERRY TERMINAL | | |
| 39 | FERRY | LIBERTY STATE PARK FERRY TERMINAL | | |
| 40 | FERRY | LINCOLN HARBOR FERRY TERMINAL | | |

| DISPLAYED ON MAP (POINTS) (continued) | | | | |
|---------------------------------------|---------------------------|---|------------------------------|--------------|
| Map ID | Type | Name | Contact | Phone |
| 41 | FERRY | NEWPORT FERRY TERMINAL | | |
| 42 | FERRY | PAULUS HOOK FERRY TERMINAL | | |
| 43 | FERRY | PORT IMPERIAL FERRY TERMINAL | | |
| 44 | FERRY | PORT LIBERTE FERRY TERMINAL | | |
| 45 | FERRY | WARREN STREET FERRY TERMINAL | | |
| 46 | LANDFILL | BABYLON MSW LANDFILL | | |
| 47 | LANDFILL | HMDC 1-A LANDFILL | | |
| 48 | LANDFILL | HMDC 1-C LANDFILL | | |
| 49 | MARINA | MARINA | | |
| 50 | OIL FACILITY | PETROLEUM PRODUCT TERMINAL | | |
| 51 | OIL FACILITY | BP PRODUCTS NORTH AMERICA, INC. | | |
| 52 | OIL FACILITY | BAYSIDE FUEL OIL DEPOT CORP. | | |
| 53 | OIL FACILITY | DITMAS OIL ASSOCIATES, INC. | | |
| 54 | OIL FACILITY | HUDSON AVENUE GENERATING STATION | | |
| 55 | OIL FACILITY | UNITED METRO ENERGY CORP. | | |
| 56 | OIL FACILITY | EXXON MOBIL OIL CORPORATION BROOKLYN TERMINAL | | |
| 57 | OIL FACILITY | NARROWS GAS TURBINES TANK FARM | | |
| 58 | OIL FACILITY | NORTH FIRST STREET FUEL OIL TERMINAL | | |
| 59 | OIL FACILITY | BUCKEYE TERMINALS, LLC - BROOKLYN TERMINAL | | |
| 60 | OIL FACILITY | ARC TERMINALS - BROOKLYN | | |
| 61 | OIL FACILITY | EAST RIVER GENERATING STATION | | |
| 62 | OIL FACILITY | 30-23 GREENPOINT AVENUE | | |
| 63 | OIL FACILITY | RAVENSWOOD GENERATING STATION | | |
| 64 | OIL FACILITY | DOMINO SUGAR REFINERY | | |
| 65 | OIL FACILITY | NYCDOT STATEN ISLAND FERRY | | |
| 66 | OIL FACILITY | GOLDWATER MEMORIAL HOSPITAL | | |
| 67 | PORT | NEW YORK, NY AND NJ | | |
| 68 | PORT | BROOKLYN PORT AUTHORITY MARINE TERMINAL | | |
| 69 | PORT | SOUTH BROOKLYN MARINE TERMINAL | | |
| 70 | RENEWABLE ENERGY | ASTORIA TIDAL ENERGY NO. 2 | | |
| 71 | RENEWABLE ENERGY | ASTORIA TIDAL ENERGY | | |
| 72 | RENEWABLE ENERGY | ROOSEVELT ISLAND TIDAL ENERGY | | |
| 73 | RENEWABLE ENERGY | WEA TEXAS BAYONNE | | |
| 74 | REPEATED MEASUREMENT SITE | MUSSEL WATCH SITE - HRBP | MUSSEL WATCH PROJECT MANAGER | 301-713-3028 |
| 75 | REPEATED MEASUREMENT SITE | MUSSEL WATCH SITE - HRFW | MUSSEL WATCH PROJECT MANAGER | 301-713-3028 |
| 76 | REPEATED MEASUREMENT SITE | MUSSEL WATCH SITE - HRUB | MUSSEL WATCH PROJECT MANAGER | 301-713-3028 |
| 77 | REPEATED MEASUREMENT SITE | THE BATTERY, NEW YORK HARBOR | | 301-713-2815 |
| 78 | REPEATED MEASUREMENT SITE | VERRAZANO-NARROWS AIR GAP | | 301-713-2815 |
| 79 | REPEATED MEASUREMENT SITE | STATION BATN6 - 8518750 - THE BATTERY, NY | | 228-688-2805 |
| 80 | REPEATED MEASUREMENT SITE | STATION ROBN4 - 8530973 - ROBBINS REEF, NJ | | 228-688-2805 |
| 81 | WATER INTAKE | 59TH STREET STEAM STATION | | |
| 82 | WATER INTAKE | BROOKLYN NAVY YARD | | |
| 83 | WATER INTAKE | DYKER BEACH GOLF COURSE | | |
| 84 | WATER INTAKE | EAST RIVER GENERATING STATION | | |
| 85 | WATER INTAKE | ONE NEW YORK PLAZA | | |

| DISPLAYED ON MAP (POINTS) (continued) | | | |
|--|--|--|--------------|
| Map ID | Type | Name | Phone |
| 86 | WATER INTAKE | RAVENSWOOD GENERATING STATION | |
| 87 | WATER INTAKE | WORLD FINANCIAL CENTER | |
| 88 | WATER INTAKE | SILVER LAKE GOLF COURSE | |
| DISPLAYED ON MAP (LINES) | | | |
| Map ID | Type | Name | Phone |
| 89 | PIPELINE | BUCKEYE | |
| DISPLAYED ON MAP (POLYGONS) | | | |
| Map ID | Type | Name | Phone |
| 90 | MILITARY | NEW YORK HARBOR, ADJACENT TO THE STAPLETON NAVAL S | |
| 91 | MILITARY | FORT HAMILTON (US ARMY) | |
| 92 | MILITARY | STATEN ISLAND ARMORY | |
| 93 | NATIONAL PARK | GATEWAY NATIONAL RECREATION AREA | 713-354-4525 |
| 94 | STATE PARK | EMPIRE FULTON FERRY STATE PARK | |
| 95 | STATE PARK | GANTRY PLAZA STATE PARK | |
| 96 | STATE PARK | LIBERTY STATE PARK | |
| ALSO PRESENT IN MAPPED AREA (POINTS) | | | |
| Type | Name | Contact | Phone |
| COAST GUARD | COAST GUARD CUTTER HAWSER (WYTL 65610) | | |
| COAST GUARD | COAST GUARD CUTTER KATHERINE WALKER (WLM 552) | | |
| COAST GUARD | CGC LINE (WYTL 65611) | | |
| COAST GUARD | COAST GUARD SECTOR NEW YORK HEADQUARTERS | | 718-354-4037 |
| COAST GUARD | COAST GUARD STATION NEW YORK | COMMANDING OFFICER | 718-354-4101 |
| ALSO PRESENT IN MAPPED AREA (POLYGONS) | | | |
| Type | Name | Contact | Phone |
| ESSENTIAL HABITAT | EFH AREA | CHRIS BRUCE | 434-951-0565 |
| ESSENTIAL HABITAT | IMPORTANT BIRD AREA | IMPORTANT BIRD AREAS PROGRAM COORDINATOR | 607-254-2437 |
| ESSENTIAL HABITAT | IMPORTANT BIRD AREA | GYLLA MACGREGOR | |
| ESSENTIAL HABITAT | SIGNIFICANT COASTAL HABITAT | NYS DEPARTMENT OF STATE COORDINATOR | 518-474-6000 |
| JURISDICTIONS | | | |
| COUNTY: | BERGEN COUNTY, ESSEX COUNTY, HUDSON COUNTY, KINGS COUNTY, NEW COUN | FEMA: | REGION II |
| COAST GUARD: | DISTRICT 1, SECTOR NEW YORK | EPA: | REGION 2 |
| USACE: | NORTH ATLANTIC DIVISION, NEW YORK DISTRICT | | |

SHORELINE RESOURCES

ESI POLYGON HABITAT TYPES

| ESI Rank | Habitat Classification | Area (Acres) | Area (Sq. Miles) |
|----------|---------------------------------|--------------|------------------|
| 10A | Salt and Brackish Water Marshes | 1,351.23 | 2.11 |
| 10B | Freshwater Marshes | 122.05 | 0.19 |
| 10C | Swamps | 20.39 | 0.03 |
| 10D | Scrub and Shrub Wetlands | 2.16 | 0.00 |
| 9A | Sheltered Tidal Flats | 658.46 | 1.03 |
| 7 | Exposed Tidal Flats | 6.41 | 0.01 |

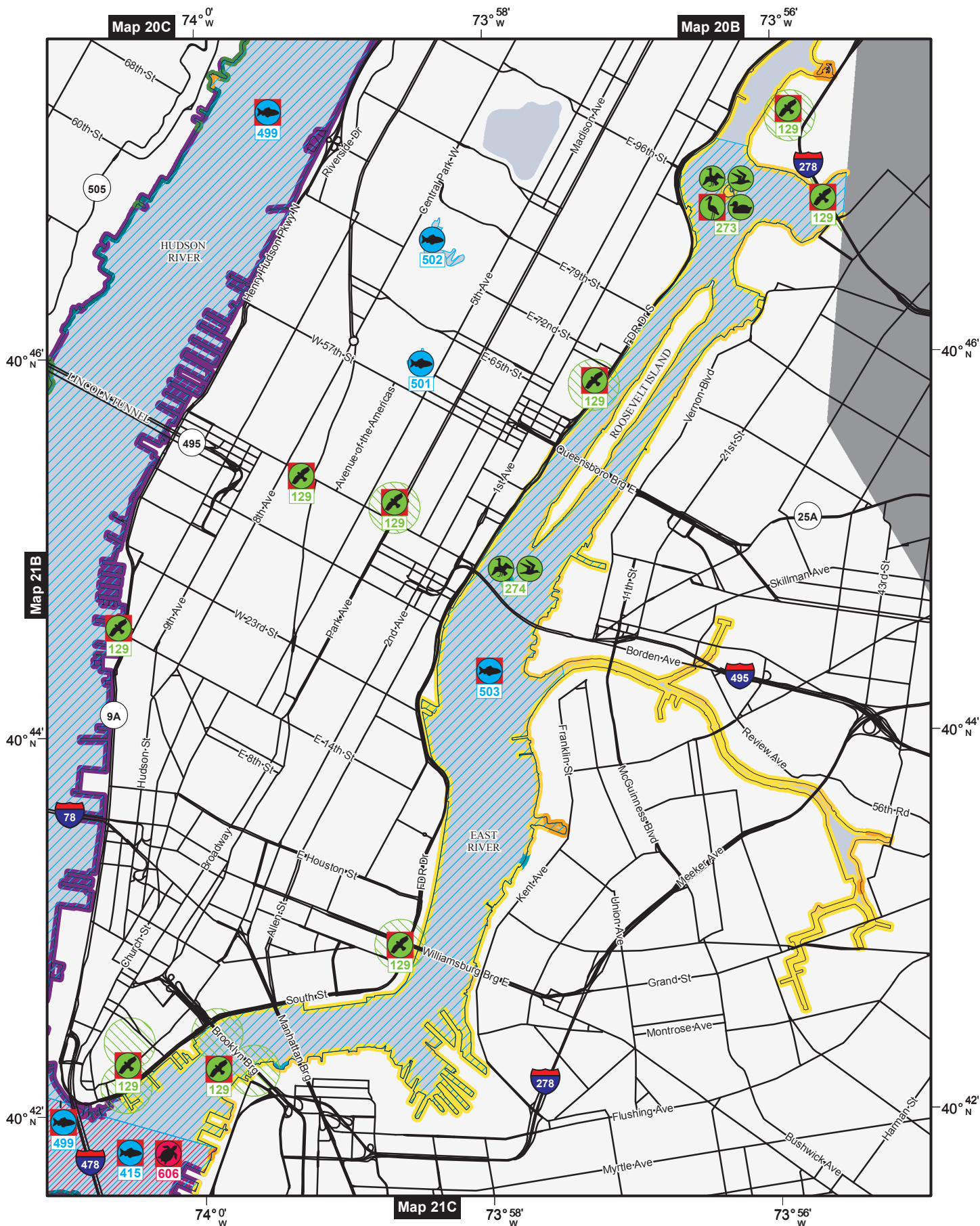
ESI SHORELINE HABITAT TYPES

| ESI Rank | Shoreline Habitat Classification | Length (Meters) | Length (Miles) | % of ESI Shoreline |
|----------------------|--------------------------------------|-----------------|----------------|--------------------|
| 10A | Salt and Brackish Water Marshes | 50,527.34 | 31.40 | 10% |
| 10B | Freshwater Marshes | 899.72 | 0.56 | < 1% |
| 10D | Scrub and Shrub Wetlands | 206.78 | 0.13 | < 1% |
| 9A | Sheltered Tidal Flats | 41,060.72 | 25.51 | 8% |
| 9B | Vegetated Low Banks | 92,972.50 | 57.77 | 18% |
| 8B | Sheltered, Solid Man-Made Structures | 118,445.97 | 73.60 | 23% |
| 8C | Sheltered Riprap | 51,061.88 | 31.73 | 10% |
| 7 | Exposed Tidal Flats | 2,503.76 | 1.56 | < 1% |
| 6A | Gravel Beaches | 6,554.52 | 4.07 | 1% |
| 6B | Riprap | 36,218.28 | 22.51 | 7% |
| 5 | Mixed Sand and Gravel Beaches | 4,578.41 | 2.84 | 1% |
| 4 | Coarse Grained Sand Beaches | 1,979.03 | 1.23 | < 1% |
| 3A | Fine to Medium Grained Sand Beaches | 2,413.63 | 1.50 | < 1% |
| 1B | Exposed, Solid Man-Made Structures | 102,871.04 | 63.92 | 20% |
| Total ESI Shoreline: | | 512,293.59 | 318.32 | |
| Total Shoreline: | | 370,826.30 | 230.42 | |

Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov





Map 21A

NY/ NJ Metropolitan Area



SEE BACK OF MAP
for details about mapped species and other
species that occur in the mapped area.
Data Published: February 2016

0 Not for Navigation 1 Miles
0 1 Kilometers

1:50,000



Map 21A
New York and New Jersey Metropolitan Area

BIOLOGICAL RESOURCES

Note: An asterisk (*) indicates that life stage occurs in this range but not in all months included

DISPLAYED ON MAP

BIRDS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--------|------------|----------------------|-------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 129 | Raptor | Endangered raptor 1 | Nesting | E/E | | 1 Pair | | | | | | | | | | | | | Mar-Jul | - | - | - |
| 273 | Diving | D. crested cormorant | Nesting | | | 5-50 Pairs | | | | | | | | | | | | | Jun-Sep | - | - | - |
| | Gull/Tern | G. black-backed gull | Nesting | | | 10-50 Pairs | | | | | | | | | | | | | Apr-Jul | - | - | - |
| | Gull/Tern | Herring gull | Nesting | | | 10-50 Pairs | | | | | | | | | | | | | Apr-Sep | - | - | - |
| | Wading | BC night-heron | Nesting | -/T | | 50-100 Pairs | | | | | | | | | | | | | Apr-Aug | - | - | - |
| | Wading | Great egret | Nesting | | | 10-50 Pairs | | | | | | | | | | | | | Apr-Aug | - | - | - |
| | Wading | Snowy egret | Nesting | -/C | | 1-10 Pairs | | | | | | | | | | | | | Apr-Aug | - | - | - |
| | Waterfowl | Canada goose | Nesting | | | 1 Pair | | | | | | | | | | | | | Mar-Jun | - | - | - |
| 274 | Waterfowl | Mallard | Nesting | | | 1 Pair | | | | | | | | | | | | | Mar-Sep | - | - | - |
| | Diving | D. crested cormorant | Nesting | | | 5-50 Pairs | | | | | | | | | | | | | Jun-Sep | - | - | - |
| | Gull/Tern | G. black-backed gull | Nesting | | | 10-50 Pairs | | | | | | | | | | | | | Apr-Jul | - | - | - |
| | Gull/Tern | Herring gull | Nesting | | | 1-10 Pairs | | | | | | | | | | | | | Apr-Sep | - | - | - |





FISH

| Map ID | Subelement | Species | Mapping Qualifier | S | F | E | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------|------------|--------------------|----------------------|-----|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|----------|
| | | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 415 | Diadromous | Atlantic sturgeon | General Distribution | -/E | | | Rare | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| 499 | Diadromous | Anadromous fish | Migration | | | | High | | | | | | | | | | | | | - | - | - | Mar-Oct* | Mar-Oct* |
| | Diadromous | Atlantic sturgeon | General Distribution | -/E | | | | | | | | | | | | | | | | - | - | - | Nov-Apr | Nov-Apr |
| 501 | Diadromous | Shortnose sturgeon | General Distribution | E/E | | | | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Freshwater | Bluegill | Harvest Area | | | | | | | | | | | | | | | | | Apr-Jun | Apr-Jun | Apr-Aug | Jan-Dec | Jan-Dec |
| | Freshwater | Common carp | Harvest Area | | | | | | | | | | | | | | | | | Apr-Jun | Apr-Jun | Apr-Aug | Jan-Dec | Jan-Dec |
| | Freshwater | Fathead minnow | Harvest Area | | | | | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | Freshwater | Largemouth bass | Harvest Area | | | | | | | | | | | | | | | | | Apr-Jun | Apr-Jun | Apr-Aug | Jan-Dec | Jan-Dec |
| 502 | Freshwater | Bluegill | Harvest Area | | | | | | | | | | | | | | | | | Apr-Jun | Apr-Jun | Apr-Aug | Jan-Dec | Jan-Dec |
| | Freshwater | Brown bullhead | Harvest Area | | | | | | | | | | | | | | | | | May-Jun | May-Jun | May-Aug | Jan-Dec | Jan-Dec |
| | Freshwater | Common carp | Harvest Area | | | | | | | | | | | | | | | | | Apr-Jun | Apr-Jun | Apr-Aug | Jan-Dec | Jan-Dec |
| | Freshwater | Golden shiner | Harvest Area | | | | | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | Freshwater | Largemouth bass | Harvest Area | | | | | | | | | | | | | | | | | Apr-Jun | Apr-Jun | Apr-Aug | Jan-Dec | Jan-Dec |
| 503 | Freshwater | Pumpkinseed | Harvest Area | | | | | | | | | | | | | | | | | Apr-Jun | Apr-Jun | Apr-Aug | Jan-Dec | Jan-Dec |
| | Freshwater | Yellow perch | Harvest Area | | | | | | | | | | | | | | | | | Apr-Jun | Apr-Jun | Apr-Aug | Jan-Dec | Jan-Dec |
| | Diadromous | Atlantic sturgeon | General Distribution | -/E | | | Rare | | | | | | | | | | | | | - | - | - | Mar-Oct* | Mar-Oct* |

REPTILES & AMPHIBIANS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Hatch | Internest | Juveniles | Adults |
|--|------------|-----------------------|----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|---------|-----------|-----------|--------|
| | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 606 | Turtle | Green sea turtle | General Distribution | T/T | T | - | | | | | | | | | | | | - | - | May-Nov | May-Nov | | |
| | Turtle | K. ridley sea turtle | General Distribution | E/E | E | - | | | | | | | | | | | | - | - | May-Nov | - | | |
| | Turtle | Loggerhead sea turtle | General Distribution | T/E | T | - | | | | | | | | | | | | - | - | May-Nov | May-Nov | | |
| ALSO PRESENT IN MAPPED AREA (GENERAL DISTRIBUTION) | | | | | | | | | | | | | | | | | | | | | | | |

FISH

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|---------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Diadromous | | | | | | | | | | | | | - | - | Jun-Jul | Apr-Nov | Mar-Jun |
| | Alewife | | | | | | | | | | | | | - | - | - | May-Nov | Mar-Jul |
| | Alewife | | | | | | | | | | | | | - | - | - | Jan-Dec | Sep-Nov |
| | American eel | | | | | | | | | | | | | - | - | Apr-Aug | Jan-Dec | Sep-Nov |
| | American eel | | | | | | | | | | | | | - | - | - | Jan-Dec | Sep-Nov |
| | American shad | | | | | | | | | | | | | - | - | - | Jan-Dec | Apr-Aug |
| | American shad | | | | | | | | | | | | | - | - | - | May-Nov | Mar-Jul |
| | Blueback herring | | | | | | | | | | | | | - | - | May-Jun | May-Nov | Mar-Jul |
| | Blueback herring | | | | | | | | | | | | | - | - | - | May-Nov | Mar-Jul |
| | Striped bass | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
|  | Atlantic herring | | | | | | | | | | | | | - | - | Apr-May | Jan-May | Jan-May |
| | Atlantic menhaden | | | | | | | | | | | | | - | - | Apr-Jul | Apr-Nov | May-Nov |
| | Bay anchovy | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jul-Dec | May-Nov |
| | Bay anchovy | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jul-Dec | Apr-Nov |
| | Bluefish | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Northern kingfish | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Scup | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Spot | | | | | | | | | | | | | - | - | - | Jun-Nov | Jun-Nov |
| | Summer flounder | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Weakfish | | | | | | | | | | | | | Jun-Aug | Jun-Aug | Jun-Aug | Jun-Nov | May-Dec |
|  | White perch | | | | | | | | | | | | | May-Jul | May-Jul | May-Jul | Jan-Dec | Jan-Dec |
| | White perch | | | | | | | | | | | | | May-Jun | May-Jun | May-Jun | Jan-Dec | Jan-Dec |
| | Windowpane | | | | | | | | | | | | | Apr-Nov | Apr-Nov | Apr-Nov | Jan-Dec | Jan-Dec |
| | Windowpane | | | | | | | | | | | | | - | - | Apr-Nov | Jan-Dec | Jan-Dec |
| | Winter flounder | | | | | | | | | | | | | Nov-Mar | Nov-Mar | Nov-Mar | Jan-Dec | Oct-Jun |
| | Winter flounder | | | | | | | | | | | | | Nov-Apr | Nov-Apr | Nov-Apr | Jan-Dec | Oct-Jun |
| | Killifish | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | Northern pipefish | | | | | | | | | | | | | May-Jul | - | May-Aug | Apr-Dec | Apr-Dec |
| | Silversides | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | American sand lance | | | | | | | | | | | | | - | - | Nov-Apr | Nov-Apr | Nov-Apr |
|  | Atlantic tomcod | | | | | | | | | | | | | Dec-Feb | Dec-Mar | Jan-Aug | Jan-Dec | Jan-Dec |
| | Atlantic tomcod | | | | | | | | | | | | | Dec-Feb | Dec-Mar | Jan-Jul | Jan-Dec | Jan-Dec |
| | Smooth dogfish | | | | | | | | | | | | | May-Jun | May-Oct | - | Apr-Oct | Apr-Oct |
| | Tautog | | | | | | | | | | | | | - | Jun | Jun | Apr-Dec | Apr-Nov |

INVERTEBRATES

| Subelement | Species | Monthly Presence | | | | | | | | | | | |
|------------|-----------|------------------|---|---|---|---|---|---|---|---|---|---|---|
| | | J | F | M | A | M | J | J | A | S | O | N | D |
| Crab | Blue crab | | | | | | | | | | | | |
| | Blue crab | | | | | | | | | | | | |

MARINE MAMMALS

| Subelement | Species | Monthly Presence | | | | | | | | | | | |
|------------|--------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|
| | | J | F | M | A | M | J | J | A | S | O | N | D |
| Dolphin | Bottlenose dolphin | | | | | | | | | | | | |
| | Harbor porpoise | | | | | | | | | | | | |

For additional information about species locations and extent, reference the underlying GIS data available from response.restoration.noaa.gov

SHORELINE RESOURCES

| ESI POLYGON HABITAT TYPES | | | Area (Acres) | Area (Sq. Miles) |
|---------------------------|-----------------------|--|--------------|------------------|
| 9A | Sheltered Tidal Flats | | 2.25 | 0.00 |

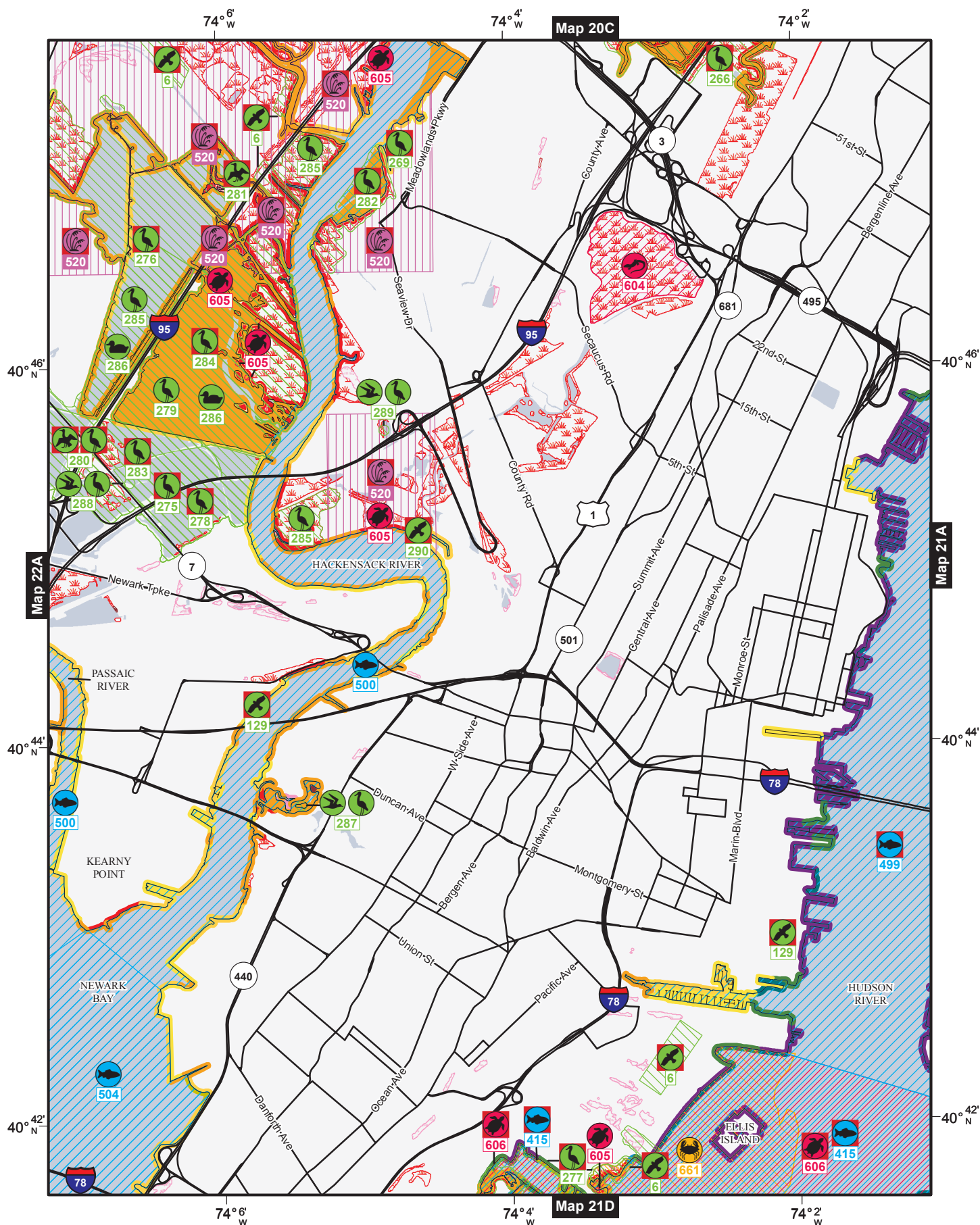
| ESI SHORELINE HABITAT TYPES | | | Length (Meters) | Length (Miles) | % of ESI Shoreline |
|-----------------------------|--------------------------------------|--|-----------------|----------------|--------------------|
| 9A | Sheltered Tidal Flats | | 1,005.73 | 0.62 | 1% |
| 9B | Vegetated Low Banks | | 1,721.45 | 1.07 | 1% |
| 8B | Sheltered, Solid Man-Made Structures | | 58,667.19 | 36.45 | 49% |
| 8C | Sheltered Riprap | | 18,511.39 | 11.50 | 16% |
| 6B | Riprap | | 4,606.38 | 2.86 | 4% |
| 5 | Mixed Sand and Gravel Beaches | | 494.69 | 0.31 | < 1% |
| 1B | Exposed, Solid Man-Made Structures | | 33,950.18 | 21.10 | 29% |

| | | | |
|----------------------|------------|----------------------|-------|
| Total ESI Shoreline: | 118,957.01 | Total ESI Shoreline: | 73.92 |
| Total Shoreline: | 106,524.07 | Total Shoreline: | 66.19 |

Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov



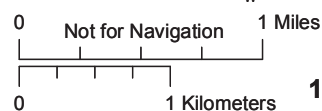


Map 21B

NY/ NJ Metropolitan Area



SEE BACK OF MAP
for details about mapped species and other
species that occur in the mapped area.
Data Published: February 2016



1:50,000



Map 21B
New York and New Jersey Metropolitan Area

BIOLOGICAL RESOURCES

Note: An asterisk (*) indicates that life stage occurs in this range but not in all months included

DISPLAYED ON MAP

BIRDS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--------|------------|---------------------|--------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 6 | Raptor | Northern harrier | Nesting | T/E | | - | | | | | | | | | | | | | Apr-Aug | - | - | - |
| 129 | Raptor | Endangered raptor 1 | Nesting | E/E | | 1 Pair | | | | | | | | | | | | | Mar-Jul | - | - | - |
| 266 | Wading | BC night-heron | Concentration Area | -/T | | 4 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | 16 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 28 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Green heron | Concentration Area | | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | | 160 | | | | | | | | | | | | | - | - | - | - |
| | Wading | YC night-heron | Concentration Area | -/T | | 3 | | | | | | | | | | | | | - | - | - | - |
| 269 | Wading | YC night-heron | Nesting | -/T | | - | | | | | | | | | | | | | Apr-Aug | - | - | - |
| 275 | Wading | Great blue heron | Concentration Area | -/C | | 3 | | | | | | | | | | | | | - | - | - | - |
| 276 | Wading | BC night-heron | Concentration Area | -/T | | 44 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Glossy ibis | Concentration Area | -/C | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | 81 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 492 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Green heron | Concentration Area | | | 9 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Little blue heron | Concentration Area | -/C | | 3 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | | 410 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Tricolored heron | Concentration Area | -/C | | 3 | | | | | | | | | | | | | - | - | - | - |
| | Wading | YC night-heron | Concentration Area | -/T | | 5 | | | | | | | | | | | | | - | - | - | - |
| 277 | Wading | BC night-heron | Concentration Area | -/T | | 3 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Glossy ibis | Concentration Area | -/C | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | 11 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 23 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Green heron | Concentration Area | | | 2 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | | 18 | | | | | | | | | | | | | - | - | - | - |
| | Wading | YC night-heron | Concentration Area | -/T | | 1 | | | | | | | | | | | | | - | - | - | - |
| 278 | Wading | BC night-heron | Concentration Area | -/T | | 3 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 41 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Little blue heron | Concentration Area | -/C | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | | 8 | | | | | | | | | | | | | - | - | - | - |
| 279 | Wading | Green heron | Concentration Area | | | 1 | | | | | | | | | | | | | - | - | - | - |
| 280 | Diving | Pied-billed grebe | Nesting | T/E | | - | | | | | | | | | | | | | Mar-Jun | - | - | - |
| | Wading | Herons | Nesting | | | - | | | | | | | | | | | | | Mar-Sep | - | - | - |
| | Wading | Least bittern | Nesting | T/C | | - | | | | | | | | | | | | | Apr-Sep | - | - | - |
| 281 | Diving | Pied-billed grebe | Nesting | T/E | | - | | | | | | | | | | | | | Mar-Jun | - | - | - |
| 282 | Wading | Great blue heron | Concentration Area | -/C | | 2 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 12 | | | | | | | | | | | | | - | - | - | - |

BIRDS (continued)

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--------|------------|---------------------|--------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| | Wading | Snowy egret | Concentration Area | -/C | | 37 | | | | | | | | | | | | | - | - | - | - |
| | Wading | YC night-heron | Concentration Area | -/T | | 6 | | | | | | | | | | | | | - | - | - | - |
| 283 | Wading | BC night-heron | Concentration Area | -/T | | 9 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 23 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | | 19 | | | | | | | | | | | | | - | - | - | - |
| | Wading | YC night-heron | Concentration Area | -/T | | 3 | | | | | | | | | | | | | - | - | - | - |
| 284 | Wading | BC night-heron | Concentration Area | -/T | | 11 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Clapper rail | Nesting | | | - | | | | | | | | | | | | | Apr-Sep | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | 25 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 76 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | | 55 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Tricolored heron | Concentration Area | -/C | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | YC night-heron | Concentration Area | -/T | | 6 | | | | | | | | | | | | | - | - | - | - |
| 285 | Wading | Clapper rail | Nesting | | | - | | | | | | | | | | | | | Apr-Sep | - | - | - |
| 286 | Waterfowl | Common moorhen | Nesting | | | - | | | | | | | | | | | | | May-Sep | - | - | - |
| 287 | Bird | Colonial waterbirds | Roosting | | | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Roosting | | | 30 | | | | | | | | | | | | | - | - | - | - |
| 288 | Bird | Colonial waterbirds | Roosting | | | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Roosting | | | 145 | | | | | | | | | | | | | - | - | - | - |
| 289 | Bird | Colonial waterbirds | Roosting | | | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Roosting | | | 40 | | | | | | | | | | | | | - | - | - | - |
| 290 | Raptor | Threatened raptor | Nesting | -/T | | 1 Pair | | | | | | | | | | | | | Apr-Jul | - | - | - |

FISH

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------|------------|--------------------|----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|----------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 415 | Diadromous | Atlantic sturgeon | General Distribution | -/E | | Rare | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| 499 | Diadromous | Anadromous fish | Migration | | | High | | | | | | | | | | | | | - | - | - | Mar-Oct* | Mar-Oct* |
| | Diadromous | Atlantic sturgeon | General Distribution | -/E | E | - | | | | | | | | | | | | | - | - | - | Nov-Apr | Nov-Apr |
| | Diadromous | Shortnose sturgeon | General Distribution | E/E | E | - | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Diadromous | Alewife | Nursery Area | | | - | | | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - |
| | Diadromous | Alewife | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |
| | Diadromous | Blueback herring | Nursery Area | | | - | | | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - |
| | Diadromous | Blueback herring | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |
| 504 | Diadromous | American shad | Nursery Area | | | - | | | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - |
| | Diadromous | American shad | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |

HABITATS & RARE PLANTS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | |
|--------|------------|------------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D |
| 520 | Plant | Endangered plant | Vulnerable Occurrence | E/E | | - | | | | | | | | | | | | |

REPTILES & AMPHIBIANS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Hatch | Internest | Juveniles | Adults |
|--------|------------|-------------------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|----------|-------|-----------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 604 | Amphibian | Rare frog | Nesting | | | - | | | | | | | | | | | | | Mar-Oct* | - | - | - | Jan-Dec |
| 605 | Turtle | N. diamondback terrapin | Vulnerable Occurrence | | | - | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov |
| 606 | Turtle | Green sea turtle | General Distribution | T/T | T | - | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | Turtle | K. ridley sea turtle | General Distribution | E/E | E | - | | | | | | | | | | | | | - | - | - | May-Nov | - |
| | Turtle | Loggerhead sea turtle | General Distribution | T/E | T | - | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |

INVERTEBRATES

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------|------------|-----------|--------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|-------|------|--------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 661 | Crab | Blue crab | Concentration Area | | | High | | | | | | | | | | | | | - | - | - | Dec-Mar | Dec-Mar |

WIDESPREAD IN MAPPED AREA (> 10 SQUARE KILOMETERS)

BIRDS



| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-----------|-------------------|-----------|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|---------|---------|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | Waterfowl | Waterfowl | Migration | | | High | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ALSO PRESENT IN MAPPED AREA (GENERAL DISTRIBUTION)


FISH

| <div><div></div><div>Subelement</div></div> | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults | |
|--|-------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|-------|---------|---------|-----------|---------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| <div><div></div><div>Diadromous</div></div> | Alewife | | | | | | | | | | | | | | - | - | Jun-Jul | Apr-Nov | Mar-Jun |
| | Alewife | | | | | | | | | | | | | | - | - | - | May-Nov | Mar-Jul |
| | American eel | | | | | | | | | | | | | | - | - | Apr-Aug | Jan-Dec | Sep-Nov |
| | American eel | | | | | | | | | | | | | | - | - | - | Jan-Dec | Sep-Nov |
| | American shad | | | | | | | | | | | | | | - | - | - | May-Nov | Mar-Jul |
| | American shad | | | | | | | | | | | | | | - | - | - | Jan-Dec | Apr-Aug |
| | Blueback herring | | | | | | | | | | | | | | - | - | - | May-Nov | Mar-Jul |
| | Blueback herring | | | | | | | | | | | | | | - | - | May-Jun | May-Nov | Mar-Jul |
| | Striped bass | | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Atlantic herring | | | | | | | | | | | | | | - | - | Apr-May | Jan-May | Jan-May |
| <div><div></div><div>Estuarine Nursery</div></div> | Atlantic menhaden | | | | | | | | | | | | | - | - | Apr-Jul | Apr-Nov | May-Nov | |
| | Bay anchovy | | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jul-Dec | May-Nov |
| | Bay anchovy | | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jul-Dec | Apr-Nov |
| | Bluefish | | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Northern kingfish | | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Scup | | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Spot | | | | | | | | | | | | | | - | - | - | Jun-Nov | Jun-Nov |
| | Summer flounder | | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Weakfish | | | | | | | | | | | | | | Jun-Aug | Jun-Aug | Jun-Aug | Jun-Nov | May-Dec |
| | White perch | | | | | | | | | | | | | | May-Jun | May-Jun | May-Jun | Jan-Dec | Jan-Dec |

FISH (continued)

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|---------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| | White perch | | | | | | | | | | | | | May-Jul | May-Jul | May-Jul | Jan-Dec | Jan-Dec |
| | Windowpane | | | | | | | | | | | | | Apr-Nov | Apr-Nov | Apr-Nov | Jan-Dec | Jan-Dec |
| | Winter flounder | | | | | | | | | | | | | Nov-Mar | Nov-Mar | Nov-Mar | Jan-Dec | Oct-Jun |
| | Winter flounder | | | | | | | | | | | | | Nov-Apr | Nov-Apr | Nov-May | Jan-Dec | Oct-Jun |
|  | Killifish | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | Northern pipefish | | | | | | | | | | | | | May-Jul | - | May-Aug | Apr-Dec | Apr-Dec |
| | Silversides | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
|  | American sand lance | | | | | | | | | | | | | - | - | Nov-Apr | Nov-Apr | Nov-Apr |
| | Atlantic tomcod | | | | | | | | | | | | | Dec-Feb | Dec-Mar | Jan-Jul | Jan-Dec | Jan-Dec |
| | Atlantic tomcod | | | | | | | | | | | | | Dec-Feb | Dec-Mar | Jan-Aug | Jan-Dec | Jan-Dec |
| | Smooth dogfish | | | | | | | | | | | | | May-Jun | May-Oct | - | Apr-Oct | Apr-Oct |
| | Tautog | | | | | | | | | | | | | - | Jun | Jun | Apr-Dec | Apr-Nov |

INVERTEBRATES

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|-----------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Blue crab | | | | | | | | | | | | | May-Oct | Jun-Oct | Jun-Oct | Jan-Dec | Jan-Dec |
| | Blue crab | | | | | | | | | | | | | Aug-Nov | - | - | Jan-Dec | Jan-Dec |
| | Blue crab | | | | | | | | | | | | | May-Oct | - | - | Jan-Dec | Jan-Dec |

MARINE MAMMALS

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Mating | Calving | Pupping | Molt |
|---|--------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|--------|---------|---------|------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Bottlenose dolphin | | | | | | | | | | | | | - | - | - | - |
| | Harbor porpoise | | | | | | | | | | | | | - | - | - | - |

For additional information about species locations and extent, reference the underlying GIS data available from response.restoration.noaa.gov

ESI POLYGON HABITAT TYPES

| ESI Rank | Habitat Classification | Area (Acres) | Area (Sq. Miles) |
|----------|---------------------------------|--------------|------------------|
| 10A | Salt and Brackish Water Marshes | 1,307.12 | 2.04 |
| 10B | Freshwater Marshes | 101.81 | 0.16 |
| 10C | Swamps | 0.58 | 0.00 |
| 10D | Scrub and Shrub Wetlands | 0.92 | 0.00 |
| 9A | Sheltered Tidal Flats | 537.28 | 0.84 |
| 7 | Exposed Tidal Flats | 2.70 | 0.00 |

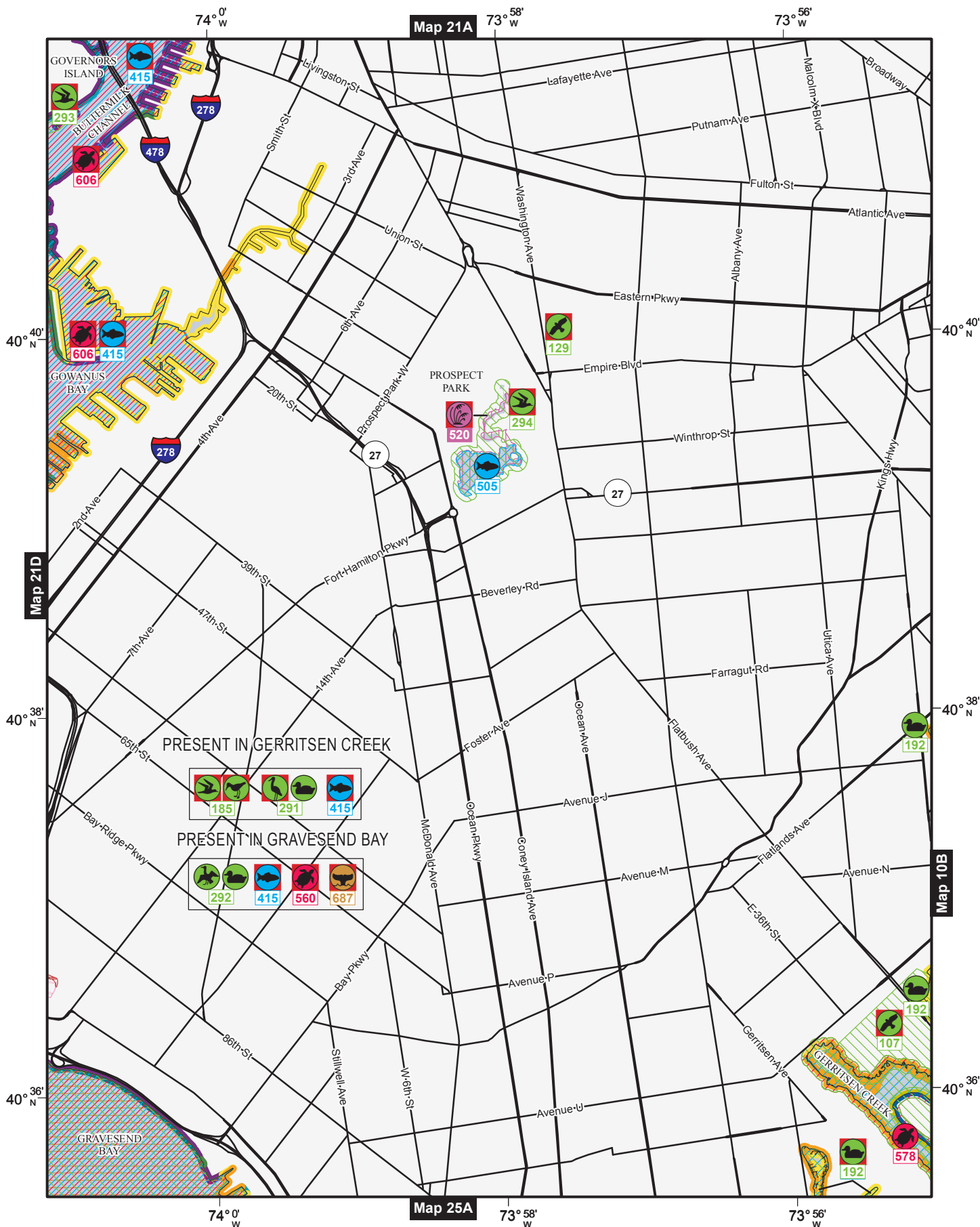
ESI SHORELINE HABITAT TYPES

| ESI Rank | Shoreline Habitat Classification | Length (Meters) | Length (Miles) | % of ESI Shoreline |
|----------------------|--------------------------------------|-----------------|----------------|--------------------|
| 10A | Salt and Brackish Water Marshes | 47,411.47 | 29.46 | 20% |
| 10B | Freshwater Marshes | 763.73 | 0.47 | < 1% |
| 10D | Scrub and Shrub Wetlands | 206.78 | 0.13 | < 1% |
| 9A | Sheltered Tidal Flats | 30,269.72 | 18.81 | 13% |
| 9B | Vegetated Low Banks | 80,254.33 | 49.87 | 34% |
| 8B | Sheltered, Solid Man-Made Structures | 21,599.10 | 13.42 | 9% |
| 8C | Sheltered Riprap | 21,713.42 | 13.49 | 9% |
| 7 | Exposed Tidal Flats | 1,157.33 | 0.72 | < 1% |
| 6A | Gravel Beaches | 885.43 | 0.55 | < 1% |
| 6B | Riprap | 6,638.92 | 4.13 | 3% |
| 4 | Coarse Grained Sand Beaches | 614.06 | 0.38 | < 1% |
| 1B | Exposed, Solid Man-Made Structures | 26,187.68 | 16.27 | 11% |
| Total ESI Shoreline: | | 237,701.96 | 147.70 | |
| Total Shoreline: | | 148,253.40 | 92.12 | |

Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov



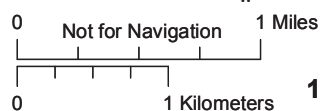


Map 21C

NY/ NJ Metropolitan Area



SEE BACK OF MAP
for details about mapped species and other
species that occur in the mapped area.
Data Published: February 2016



1:50,000



Map 21C
New York and New Jersey Metropolitan Area

BIOLOGICAL RESOURCES

Note: An asterisk (*) indicates that life stage occurs in this range but not in all months included

DISPLAYED ON MAP

BIRDS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--------|------------|------------------------|--------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 107 | Raptor | Northern harrier | Nesting | T/E | | - | | | | | | | | | | | | | Apr-Aug | - | - | - |
| | Raptor | Short-eared owl | Nesting | E/E | | - | | | | | | | | | | | | | Apr-Jul | - | - | - |
| 129 | Raptor | Endangered raptor 1 | Nesting | E/E | | 1 Pair | | | | | | | | | | | | | Mar-Jul | - | - | - |
| 185 | Gull/Tern | Black skimmer | Migration | C/E | | 10S | | | | | | | | | | | | | - | May | Aug-Oct | - |
| | Shorebird | American oystercatcher | Migration | -/C | | 1S | | | | | | | | | | | | | - | - | Aug-Sep | - |
| 192 | Waterfowl | American black duck | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Brant | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Bufflehead | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Canada goose | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Long-tailed duck | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Ruddy duck | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Scaup | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Snow goose | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Waterfowl | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| 291 | Wading | BC night-heron | Concentration Area | -/T | | 3 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | 4 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 13 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Green heron | Concentration Area | | | 2 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Little blue heron | Concentration Area | -/C | | 3 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | | 11 | | | | | | | | | | | | | - | - | - | - |
| | Wading | YC night-heron | Concentration Area | -/T | | 4 | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | American black duck | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Brant | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Bufflehead | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Canada goose | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Long-tailed duck | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Ruddy duck | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Scaup | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Snow goose | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Waterfowl | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| 292 | Diving | D. crested cormorant | Wintering | | | High | | | | | | | | | | | | | - | - | - | - |
| | Diving | Great cormorant | Wintering | | | High | | | | | | | | | | | | | - | - | - | - |
| | Diving | Horned grebe | Migration | | | High | | | | | | | | | | | | | - | - | Oct-Nov | - |
| | Diving | Red-throated loon | Migration | | | High | | | | | | | | | | | | | - | - | Oct-Nov | - |
| | Waterfowl | Waterfowl | Wintering | | | High | | | | | | | | | | | | | - | - | - | - |
| 293 | Gull/Tern | Common tern | Nesting | T/C | | 100-500 Pairs | | | | | | | | | | | | | May-Sep | - | - | - |
| | Gull/Tern | G. black-backed gull | Nesting | | | 1-10 Pairs | | | | | | | | | | | | | Apr-Jul | - | - | - |

BIRDS (continued)

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Molt |
|--------|------------|---------------|-------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | |
| 294 | Gull/Tern | Herring gull | Nesting | C/E | | 1-10 Pairs | | | | | | | | | | | | Apr-Sep | - |
| | Gull/Tern | Black skimmer | Migration | | | 10S | | | | | | | | | | | | May | Aug-Oct |

FISH

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Adults |
|--------|------------|-------------------|----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | |
| 415 | Diadromous | Atlantic sturgeon | General Distribution | -/E | E | Rare | | | | | | | | | | | | | Jan-Dec |
| 505 | Freshwater | Bluegill | Harvest Area | | | - | | | | | | | | | | | | | Jan-Dec |
| | Freshwater | Chain pickerel | Harvest Area | | | - | | | | | | | | | | | | | Jan-Dec |
| | Freshwater | Common carp | Harvest Area | | | - | | | | | | | | | | | | | Jan-Dec |
| | Freshwater | Largemouth bass | Harvest Area | | | - | | | | | | | | | | | | | Jan-Dec |
| | Freshwater | Pumpkinseed | Harvest Area | | | - | | | | | | | | | | | | | Jan-Dec |
| | Freshwater | Yellow perch | Harvest Area | | | - | | | | | | | | | | | | | Jan-Dec |

HABITATS & RARE PLANTS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Adults |
|--------|------------|------------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|--------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | |
| 520 | Plant | Endangered plant | Vulnerable Occurrence | E/E | | - | | | | | | | | | | | | | - |
| | | | | | | | | | | | | | | | | | | | - |

REPTILES & AMPHIBIANS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Adults |
|--------|------------|-------------------------|----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | |
| 560 | Turtle | Green sea turtle | General Distribution | T/T | E | - | | | | | | | | | | | | | May-Nov |
| | Turtle | K. ridley sea turtle | General Distribution | | | - | | | | | | | | | | | | | May-Nov |
| | Turtle | Leatherback sea turtle | General Distribution | E/E | E | - | | | | | | | | | | | | | May-Nov |
| | Turtle | Loggerhead sea turtle | General Distribution | | | - | | | | | | | | | | | | | May-Nov |
| 578 | Turtle | N. diamondback terrapin | Nesting | T/T | T | 50-100 | | | | | | | | | | | | Jun-Jul | Jun-Jul |
| 606 | Turtle | Green sea turtle | General Distribution | | | - | | | | | | | | | | | | | May-Nov |
| | Turtle | K. ridley sea turtle | General Distribution | E/E | E | - | | | | | | | | | | | | | May-Nov |
| | Turtle | Loggerhead sea turtle | General Distribution | | | - | | | | | | | | | | | | | May-Nov |

MARINE MAMMALS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Molt |
|--------|------------|----------------|----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | |
| 687 | Whale | Humpback whale | General Distribution | E/E | E | Common | | | | | | | | | | | | | - |
| | | | | | | | | | | | | | | | | | | | - |

ALSO PRESENT IN MAPPED AREA (GENERAL DISTRIBUTION)

BIRDS




|  Subelement | Species | J | F | M | A | M | J | J | A | S | O | N | D | Nest | Mig.(S) | Mig.(F) | Molt |
|--|--------------|---|---|---|---|---|---|---|---|---|---|---|---|------|---------|---------|------|
| Waterfowl | Black scoter | | | | | | | | | | | | | - | - | - | - |

FISH




| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|-------------------|------------------|------------------|---|---|---|---|---|---|---|---|---|---|----------|----------|----------|---------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| Diadromous | Alewife | | | | | | | | | | | | | - | - | Jun-Jul | Apr-Nov | Mar-Jun |
| | Alewife | | | | | | | | | | | | | - | - | - | Apr-Nov | Mar-Jun |
| | Alewife | | | | | | | | | | | | | - | - | - | Jan-Dec | Feb-Jun |
| Estuarine Nursery | American eel | | | | | | | | | | | | | - | - | Apr-Aug | Jan-Dec | Sep-Nov |
| | American shad | | | | | | | | | | | | | - | - | - | Jan-Dec | Apr-Aug |
| | American shad | | | | | | | | | | | | | - | - | - | Apr-Jun | Apr-May |
| | Blueback herring | | | | | | | | | | | | | - | - | - | May-Nov | Mar-Jul |
| | Blueback herring | | | | | | | | | | | | | - | - | May-Jun | May-Nov | Mar-Jul |
| | Striped bass | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Striped bass | | | | | | | | | | | | | - | - | - | Apr-Nov | Mar-Nov |
| | Atlantic croaker | | | | | | | | | | | | | - | - | Sep-Nov | Jul-Nov | Jul-Nov |
| | Atlantic herring | | | | | | | | | | | | | - | - | Apr-May | Jan-May | Jan-May |
| | Atlantic herring | | | | | | | | | | | | | - | - | - | Nov-Apr | Nov-Apr |
| Atlantic menhaden | | | | | | | | | | | | | - | - | Apr-Jul | Apr-Nov | May-Nov | |
| Atlantic menhaden | | | | | | | | | | | | | - | - | - | Apr-Nov | Mar-Nov | |
| Atlantic menhaden | | | | | | | | | | | | | May-Oct* | May-Oct* | May-Oct* | Apr-Nov | Apr-Nov | |
| Bay anchovy | | | | | | | | | | | | | May-Aug | May-Aug | Jun-Sep | Jul-Mar | Jan-Dec | |
| Bay anchovy | | | | | | | | | | | | | May-Jul | May-Jul | May-Dec | Jan-Dec | Jan-Dec | |
| Bay anchovy | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jul-Dec | May-Nov | |
| Black drum | | | | | | | | | | | | | - | - | - | Jul-Nov | Jul-Nov | |
| Black sea bass | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov | |
| Bluefish | | | | | | | | | | | | | - | - | - | May-Oct | Apr-Dec | |
| Bluefish | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct | |
| Northern kingfish | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov | |
| Northern kingfish | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov | |
| Northern kingfish | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct | |
| Northern puffer | | | | | | | | | | | | | May-Aug | Jun-Oct | Jun-Oct | May-Oct | May-Oct | |
| Scup | | | | | | | | | | | | | Jul | Jul | Jul | Jun-Oct | Jun-Oct | |
| Scup | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct | |
| Spot | | | | | | | | | | | | | - | - | - | May-Dec | May-Nov | |
| Spot | | | | | | | | | | | | | - | - | - | Jun-Nov | Jun-Nov | |
| Summer flounder | | | | | | | | | | | | | - | - | - | Apr-Oct | Apr-Oct | |
| Summer flounder | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct | |
| Weakfish | | | | | | | | | | | | | Jun-Aug | Jun-Aug | Jun-Aug | Jun-Nov | May-Dec | |
| Weakfish | | | | | | | | | | | | | May-Sep | May-Sep | May-Sep | May-Dec | May-Dec | |
| White perch | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec | |
| White perch | | | | | | | | | | | | | May-Jun | May-Jun | May-Jun | May-Jun | Jan-Dec | |

New York and New Jersey Metropolitan Area: Map 211

FISH (continued)

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|---------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|----------|----------|---------|-----------|----------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| | Windowpane | | | | | | | | | | | | | Apr-Oct* | Apr-Oct* | Apr-Nov | Jan-Dec | Jan-Dec |
| | Windowpane | | | | | | | | | | | | | Apr-Jul | Apr-Jul | Apr-Oct | Jan-Dec | Jan-Dec |
| | Windowpane | | | | | | | | | | | | | - | - | Apr-Nov | Jan-Dec | Jan-Dec |
| | Winter flounder | | | | | | | | | | | | | Nov-Apr | Nov-Apr | Nov-Jun | Jan-Dec | Jan-Dec |
| | Winter flounder | | | | | | | | | | | | | Nov-Apr | Nov-Apr | Nov-May | Jan-Dec | Oct-Jun |
|  | Atlantic silverside | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | Killifish | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | Killifish | | | | | | | | | | | | | May-Aug | May-Aug | May-Sep | Jan-Dec | Jan-Dec |
| | Northern pipefish | | | | | | | | | | | | | May-Jul | - | May-Aug | Apr-Dec | Apr-Dec |
| | Northern pipefish | | | | | | | | | | | | | May-Aug | - | May-Oct | Jan-Dec | Jan-Dec |
| | Silversides | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
|  | American sand lance | | | | | | | | | | | | | - | - | Nov-Apr | Nov-Apr | Nov-Apr |
| | American sand lance | | | | | | | | | | | | | Nov-Apr | Nov-Apr | Nov-Apr | Nov-Apr | Nov-Apr |
| | American sand lance | | | | | | | | | | | | | Nov-Apr | Nov-Apr | Nov-May | Nov-Apr | Nov-Apr |
| | Atlantic cod | | | | | | | | | | | | | - | - | - | Nov-Apr | - |
| | Atlantic tomcod | | | | | | | | | | | | | Dec-Feb | Dec-Mar | Jan-Aug | Jan-Dec | Jan-Dec |
| | Atlantic tomcod | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Pollock | | | | | | | | | | | | | - | - | - | Mar-Jun | - |
| | Red hake | | | | | | | | | | | | | - | - | - | Nov-May | Nov-May |
| | Smooth dogfish | | | | | | | | | | | | | May-Jun | May-Oct | - | Apr-Oct | Apr-Oct |
| | Tautog | | | | | | | | | | | | | May | May | May | Jan-Dec | Apr-Nov |
| | Tautog | | | | | | | | | | | | | May-Aug | May-Aug | Jun-Aug | Jan-Dec | Mar-Dec |
| | Tautog | | | | | | | | | | | | | - | Jun | Jun | Apr-Dec | Apr-Nov |
|  | Atlantic mackerel | | | | | | | | | | | | | - | - | - | Apr-Nov* | Apr-Nov* |
| | Butterfish | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov |
| | Sandbar shark | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |

INVERTEBRATES

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Blue mussel | | | | | | | | | | | | | Apr-Nov | Apr-Nov | Apr-Nov | Jan-Dec | Jan-Dec |
| | Northern quahog | | | | | | | | | | | | | Jun-Sep | Jun-Sep | Jun-Sep | Jan-Dec | Jan-Dec |
| | Softshell clam | | | | | | | | | | | | | May-Oct | May-Oct | May-Oct | Jan-Dec | Jan-Dec |
|  | Blue crab | | | | | | | | | | | | | May-Oct | Jun-Oct | Jun-Oct | Jan-Dec | Jan-Dec |
| | Horseshoe crab | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
|  | American lobster | | | | | | | | | | | | | Jun-Sep | Jun-Sep | Jun-Oct | Jan-Dec | Jan-Dec |

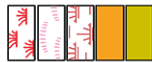
MARINE MAMMALS

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Mating | Calving | Pupping | Molt |
|---|--------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|--------|---------|---------|------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Bottlenose dolphin | | | | | | | | | | | | | - | - | - | - |
| | Harbor porpoise | | | | | | | | | | | | | - | - | - | - |

For additional information about species locations and extent, reference the underlying GIS data available from response.restoration.noaa.gov

SHORELINE RESOURCES

ESI POLYGON HABITAT TYPES



| ESI Rank | Habitat Classification | Area (Acres) | Area (Sq. Miles) |
|----------|---------------------------------|--------------|------------------|
| 10A | Salt and Brackish Water Marshes | 0.13 | 0.00 |
| 10B | Freshwater Marshes | 3.28 | 0.01 |
| 10C | Swamps | 1.11 | 0.00 |
| 9A | Sheltered Tidal Flats | 38.78 | 0.06 |
| 7 | Exposed Tidal Flats | 0.25 | 0.00 |

ESI SHORELINE HABITAT TYPES

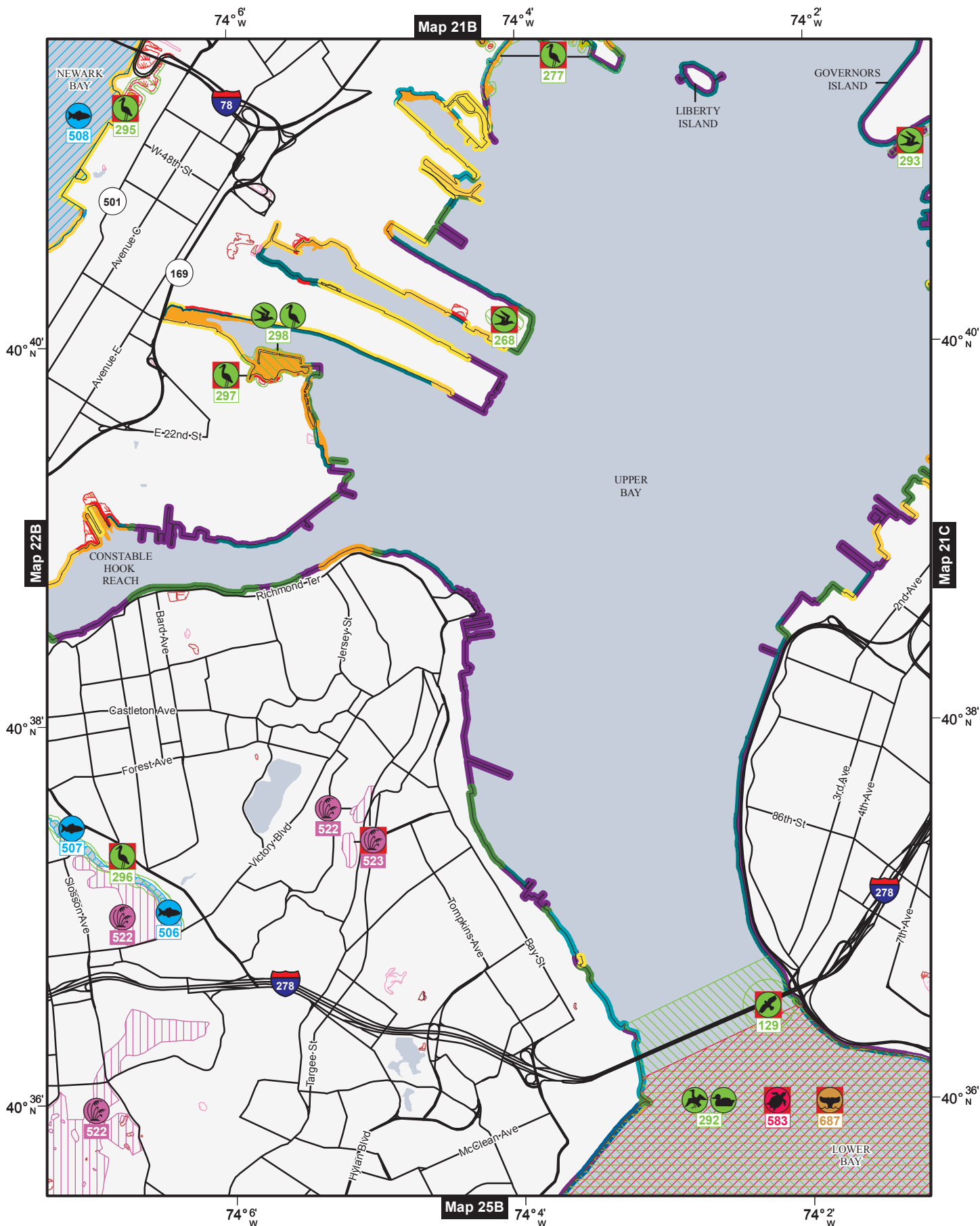
| ESI Rank | Shoreline Habitat Classification | Length (Meters) | Length (Miles) | % of ESI Shoreline |
|----------|--------------------------------------|-----------------|----------------|--------------------|
| 9A | Sheltered Tidal Flats | 708.38 | 0.44 | 1% |
| 9B | Vegetated Low Banks | 7,428.18 | 4.62 | 15% |
| 8B | Sheltered, Solid Man-Made Structures | 23,279.41 | 14.47 | 46% |
| 8C | Sheltered Riprap | 1,859.33 | 1.16 | 4% |
| 7 | Exposed Tidal Flats | 1,069.38 | 0.66 | 2% |
| 6B | Riprap | 5,063.31 | 3.15 | 10% |
| 5 | Mixed Sand and Gravel Beaches | 598.15 | 0.37 | 1% |
| 4 | Coarse Grained Sand Beaches | 80.82 | 0.05 | < 1% |
| 3A | Fine to Medium Grained Sand Beaches | 1,201.95 | 0.75 | 2% |
| 1B | Exposed, Solid Man-Made Structures | 9,658.57 | 6.00 | 19% |

Total ESI Shoreline: 50,947.47 Total ESI Shoreline: 31.66
Total Shoreline: 43,909.22 Total Shoreline: 27.28

Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov



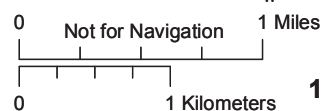


Map 21D

NY/ NJ Metropolitan Area



SEE BACK OF MAP
for details about mapped species and other
species that occur in the mapped area.
Data Published: February 2016



1:50,000



Map 21D
New York and New Jersey Metropolitan Area

BIOLOGICAL RESOURCES

Note: An asterisk (*) indicates that life stage occurs in this range but not in all months included

DISPLAYED ON MAP

BIRDS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--------|------------|----------------------|--------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 129 | Raptor | Endangered raptor 1 | Nesting | E/E | | 1 Pair | | | | | | | | | | | | | Mar-Jul | - | - | - |
| 268 | Gull/Tern | Least tern | Nesting | T/E | | - | | | | | | | | | | | | | May-Sep | - | - | - |
| 277 | Wading | BC night-heron | Concentration Area | -/T | | 3 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Glossy ibis | Concentration Area | -/C | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | 11 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 23 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Green heron | Concentration Area | | | 2 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | | 18 | | | | | | | | | | | | | - | - | - | - |
| | Wading | YC night-heron | Concentration Area | -/T | | 1 | | | | | | | | | | | | | - | - | - | - |
| 292 | Diving | D. crested cormorant | Wintering | | | High | | | | | | | | | | | | | - | - | - | - |
| | Diving | Great cormorant | Wintering | | | High | | | | | | | | | | | | | - | - | - | - |
| | Diving | Horned grebe | Migration | | | High | | | | | | | | | | | | | - | - | Oct-Nov | - |
| | Diving | Red-throated loon | Migration | | | High | | | | | | | | | | | | | - | - | Oct-Nov | - |
| | Waterfowl | Waterfowl | Wintering | | | High | | | | | | | | | | | | | - | - | - | - |
| 293 | Gull/Tern | Common tern | Nesting | T/C | | 100-500 Pairs | | | | | | | | | | | | | May-Sep | - | - | - |
| | Gull/Tern | G. black-backed gull | Nesting | | | 1-10 Pairs | | | | | | | | | | | | | Apr-Jul | - | - | - |
| | Gull/Tern | Herring gull | Nesting | | | 1-10 Pairs | | | | | | | | | | | | | Apr-Sep | - | - | - |
| 295 | Wading | BC night-heron | Concentration Area | -/T | | 2 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | 7 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 10 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Green heron | Concentration Area | | | 4 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | | 4 | | | | | | | | | | | | | - | - | - | - |
| | Wading | YC night-heron | Concentration Area | -/T | | 8 | | | | | | | | | | | | | - | - | - | - |
| 296 | Wading | BC night-heron | Concentration Area | -/T | | 10 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Glossy ibis | Concentration Area | -/C | | 10 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | 8 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 7 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Green heron | Concentration Area | | | 2 | | | | | | | | | | | | | - | - | - | - |
| 297 | Wading | BC night-heron | Concentration Area | -/T | | 35 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | 32 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 31 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Green heron | Concentration Area | | | 6 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | | 11 | | | | | | | | | | | | | - | - | - | - |
| | Wading | YC night-heron | Concentration Area | -/T | | 3 | | | | | | | | | | | | | - | - | - | - |
| 298 | Bird | Colonial waterbirds | Roosting | | | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Roosting | | | 5 | | | | | | | | | | | | | - | - | - | - |

FISH

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------|------------|------------------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 506 | Freshwater | Bluegill | Harvest Area | | | - | | | | | | | | | | | | | Apr-Jun | Apr-Jun | Apr-Aug | Jan-Dec | Jan-Dec |
| | Freshwater | Brown bullhead | Harvest Area | | | High | | | | | | | | | | | | | May-Jun | May-Jun | May-Aug | Jan-Dec | Jan-Dec |
| | Freshwater | Golden shiner | Harvest Area | | | - | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | Freshwater | Largemouth bass | Harvest Area | | | - | | | | | | | | | | | | | Apr-Jun | Apr-Jun | Apr-Aug | Jan-Dec | Jan-Dec |
| | Freshwater | Pumpkinseed | Harvest Area | | | - | | | | | | | | | | | | | Apr-Jun | Apr-Jun | Apr-Aug | Jan-Dec | Jan-Dec |
| 507 | Freshwater | Bluegill | Harvest Area | | | - | | | | | | | | | | | | | Apr-Jun | Apr-Jun | Apr-Aug | Jan-Dec | Jan-Dec |
| | Freshwater | Brown bullhead | Harvest Area | | | - | | | | | | | | | | | | | May-Jun | May-Jun | May-Aug | Jan-Dec | Jan-Dec |
| | Freshwater | Golden shiner | Harvest Area | | | - | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | Freshwater | Largemouth bass | Harvest Area | | | - | | | | | | | | | | | | | Apr-Jun | Apr-Jun | Apr-Aug | Jan-Dec | Jan-Dec |
| | Freshwater | Pumpkinseed | Harvest Area | | | - | | | | | | | | | | | | | Apr-Jun | Apr-Jun | Apr-Aug | Jan-Dec | Jan-Dec |
| 508 | Diadromous | Alewife | Nursery Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | Jun-Aug | Aug-Oct | - |
| | Diadromous | Alewife | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | Jun-Aug | Aug-Oct | Mar-Jun |
| | Diadromous | American shad | Nursery Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | Jun-Aug | Aug-Oct | - |
| | Diadromous | American shad | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | Jun-Aug | Aug-Oct | Mar-Jun |
| | Diadromous | Blueback herring | Nursery Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | Jun-Aug | Aug-Oct | - |
| | Diadromous | Blueback herring | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | Jun-Aug | Aug-Oct | Mar-Jun |

HABITATS & RARE PLANTS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | | | | | |
|--------|------------|-----------------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 522 | Upland | Rare upland community | Vulnerable Occurrence | | | - | | | | | | | | | | | | | - | - | - | - | - |
| 523 | Plant | Threatened plant | Vulnerable Occurrence | T/- | | - | | | | | | | | | | | | | - | - | - | - | - |

REPTILES & AMPHIBIANS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Hatch | Internest | Juveniles | Adults |
|--------|------------|------------------------|----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|-------|-----------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 583 | Turtle | Leatherback sea turtle | General Distribution | E/E | E | - | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |

MARINE MAMMALS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Mating | Calving | Pupping | Molt | |
|--------|------------|----------------|----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|--------|---------|---------|------|---|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 687 | Whale | Humpback whale | General Distribution | E/E | E | Common | | | | | | | | | | | | | - | - | - | - | - |

FISH

| Subelement | Species | Mapping Qualifier | S | F | Concentration | J | F | M | A | M | J | J | A | S | O | N | D | Spawn | Eggs | Larvae | Juveniles | Adults |
|------------|-------------------|----------------------|-----|---|---------------|---|---|---|---|---|---|---|---|---|---|---|---|-------|------|--------|-----------|---------|
| Diadromous | Atlantic sturgeon | General Distribution | -/E | E | Rare |  |  |  |  |  |  |  |  |  |  |  |  | - | - | - | Jan-Dec | Jan-Dec |

Monthly Presence

REPTILES & AMPHIBIANS

| Subelement | Species | Mapping Qualifier | S | F | Concentration | J | F | M | A | M | J | J | A | S | O | N | D | Nest | Hatch | Interstest | Juveniles | Adults |
|------------|-----------------------|----------------------|-----|---|---------------|---|---|---|---|---|---|---|---|---|---|---|---|------|-------|------------|-----------|---------|
| Turtle | Green sea turtle | General Distribution | T/T | T | - | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | K. ridley sea turtle | General Distribution | E/E | E | - | | | | | | | | | | | | | - | - | - | May-Nov | - |
| | Loggerhead sea turtle | General Distribution | T/E | T | - | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |

Monthly Presence

INVERTEBRATES

| Subelement | Species | Mapping Qualifier | S | F | Concentration | J | F | M | A | M | J | J | A | S | O | N | D | Spawn | Eggs | Larvae | Juveniles | Adults |
|------------|-----------|--------------------|---|---|---------------|---|---|---|---|---|---|---|---|---|---|---|---|-------|------|---------|-----------|--------|
| Crab | Blue crab | Concentration Area | | | High |  |  |  |  |  |  |  |  |  |  |  | - | - | - | Dec-Mar | Dec-Mar | |

Monthly Presence





ALSO PRESENT IN MAPPED AREA (GENERAL DISTRIBUTION)

FISH




| Subelement | Species | J | F | M | A | M | J | J | A | S | O | N | D | Spawn | Eggs | Larvae | Juveniles | Adults |
|-------------------|-------------------|---|---|---|---|---|---|---|---|---|---|---|---|----------|----------|----------|-----------|---------|
| Diadromous | Alewife | | | | | | | | | | | | | - | - | - | Jan-Dec | Feb-Jun |
| | Alewife | | | | | | | | | | | | | - | - | Jun-Jul | Apr-Nov | Mar-Jun |
| | American eel | | | | | | | | | | | | | - | - | Apr-Aug | Jan-Dec | Sep-Nov |
| | American shad | | | | | | | | | | | | | - | - | - | Apr-Jun | Apr-May |
| | American shad | | | | | | | | | | | | | - | - | - | Jan-Dec | Apr-Aug |
| | Blueback herring | | | | | | | | | | | | | - | - | May-Jun | May-Nov | Mar-Jul |
| | Blueback herring | | | | | | | | | | | | | - | - | - | May-Nov | Mar-Jul |
| Estuarine Nursery | Striped bass | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Atlantic croaker | | | | | | | | | | | | | - | - | Sep-Nov | Jul-Nov | Jul-Nov |
| | Atlantic herring | | | | | | | | | | | | | - | - | Apr-May | Jan-May | Jan-May |
| | Atlantic menhaden | | | | | | | | | | | | | May-Oct* | May-Oct* | May-Oct* | Apr-Nov | Apr-Nov |
| | Atlantic menhaden | | | | | | | | | | | | | - | - | Apr-Jul | Apr-Nov | May-Nov |
| | Bay anchovy | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jul-Dec | May-Nov |
| | Bay anchovy | | | | | | | | | | | | | May-Aug | May-Aug | Jun-Sep | Jul-Mar | Jan-Dec |
| | Black drum | | | | | | | | | | | | | - | - | - | Jul-Nov | Jul-Nov |
| | Black sea bass | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov |
| | Bluefish | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Northern kingfish | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Northern kingfish | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | Northern puffer | | | | | | | | | | | | | May-Aug | Jun-Oct | Jun-Oct | May-Oct | May-Oct |
| | Scup | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Scup | | | | | | | | | | | | | Jul | Jul | Jul | Jun-Oct | Jun-Oct |
| | Spot | | | | | | | | | | | | | - | - | - | Jun-Nov | Jun-Nov |

Monthly Presence


FISH (continued)

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|---------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|----------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Weakfish | | | | | | | | | | | | | Jun-Aug | Jun-Aug | Jun-Aug | May-Oct | May-Dec |
| | White perch | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | White perch | | | | | | | | | | | | | May-Jun | May-Jun | May-Jun | Jan-Dec | Jan-Dec |
| | Windowpane | | | | | | | | | | | | | - | - | Apr-Nov | Jan-Dec | Jan-Dec |
| | Windowpane | | | | | | | | | | | | | Apr-Jul | Apr-Jul | Apr-Oct | Jan-Dec | Jan-Dec |
| | Winter flounder | | | | | | | | | | | | | Nov-Apr | Nov-Apr | Nov-May | Jan-Dec | Oct-Jun |
|  | Killifish | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | Northern pipefish | | | | | | | | | | | | | May-Jul | - | May-Aug | Apr-Dec | Apr-Dec |
| | Silversides | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | American sand lance | | | | | | | | | | | | | Nov-Apr | Nov-Apr | Nov-Apr | Nov-Apr | Nov-Apr |
|  | American sand lance | | | | | | | | | | | | | - | - | Nov-Apr | Nov-Apr | Nov-Apr |
| | Atlantic cod | | | | | | | | | | | | | - | - | - | Nov-Apr | - |
| | Atlantic tomcod | | | | | | | | | | | | | Dec-Feb | Dec-Mar | Jan-Aug | Jan-Dec | Jan-Dec |
| | Atlantic tomcod | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Pollock | | | | | | | | | | | | | - | - | - | Mar-Jun | - |
| | Red hake | | | | | | | | | | | | | - | - | - | Nov-May | Nov-May |
|  | Smooth dogfish | | | | | | | | | | | | | May-Jun | May-Oct | - | Apr-Oct | Apr-Oct |
| | Tautog | | | | | | | | | | | | | - | Jun | Jun | Apr-Dec | Apr-Nov |
| | Tautog | | | | | | | | | | | | | May | May | May | Jan-Dec | Apr-Nov |
| | Atlantic mackerel | | | | | | | | | | | | | - | - | - | Apr-Nov* | Apr-Nov* |
| | Butterfish | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov |

INVERTEBRATES

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Blue mussel | | | | | | | | | | | | | Apr-Nov | Apr-Nov | Apr-Nov | Jan-Dec | Jan-Dec |
| | Northern quahog | | | | | | | | | | | | | Jun-Sep | Jun-Sep | Jun-Sep | Jan-Dec | Jan-Dec |
|  | Softshell clam | | | | | | | | | | | | | May-Oct | May-Oct | May-Oct | Jan-Dec | Jan-Dec |
| | Blue crab | | | | | | | | | | | | | May-Oct | Jun-Oct | Jun-Oct | Jan-Dec | Jan-Dec |
| | Blue crab | | | | | | | | | | | | | May-Oct | - | - | Jan-Dec | Jan-Dec |
|  | Horseshoe crab | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | American lobster | | | | | | | | | | | | | Jun-Sep | Jun-Sep | Jun-Oct | Jan-Dec | Jan-Dec |

MARINE MAMMALS

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Mating | Calving | Pupping | Molt |
|---|--------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|--------|---------|---------|------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Bottlenose dolphin | | | | | | | | | | | | | - | - | - | - |
| | Harbor porpoise | | | | | | | | | | | | | - | - | - | - |

For additional information about species locations and extent, reference the underlying GIS data available from response.restoration.noaa.gov

SHORELINE RESOURCES

ESI POLYGON HABITAT TYPES

| ESI Rank | Habitat Classification | Area (Acres) | Area (Sq. Miles) |
|----------|---------------------------------|--------------|------------------|
| 10A | Salt and Brackish Water Marshes | 45.18 | 0.07 |
| 10B | Freshwater Marshes | 16.93 | 0.03 |
| 10C | Swamps | 18.70 | 0.03 |
| 10D | Scrub and Shrub Wetlands | 1.24 | 0.00 |
| 9A | Sheltered Tidal Flats | 80.84 | 0.13 |
| 7 | Exposed Tidal Flats | 3.46 | 0.01 |

ESI SHORELINE HABITAT TYPES

| ESI Rank | Shoreline Habitat Classification | Length (Meters) | Length (Miles) | % of ESI Shoreline |
|----------|--------------------------------------|-----------------|----------------|--------------------|
| 10A | Salt and Brackish Water Marshes | 3,193.76 | 1.98 | 3% |
| 10B | Freshwater Marshes | 135.99 | 0.08 | < 1% |
| 9A | Sheltered Tidal Flats | 9,159.40 | 5.69 | 9% |
| 9B | Vegetated Low Banks | 3,673.32 | 2.28 | 4% |
| 8B | Sheltered, Solid Man-Made Structures | 14,892.73 | 9.25 | 14% |
| 8C | Sheltered Riprap | 8,978.57 | 5.58 | 9% |
| 7 | Exposed Tidal Flats | 276.99 | 0.17 | < 1% |
| 6A | Gravel Beaches | 5,669.09 | 3.52 | 5% |
| 6B | Riprap | 19,915.38 | 12.37 | 19% |
| 5 | Mixed Sand and Gravel Beaches | 3,485.57 | 2.17 | 3% |
| 4 | Coarse Grained Sand Beaches | 1,284.15 | 0.80 | 1% |
| 3A | Fine to Medium Grained Sand Beaches | 1,207.99 | 0.75 | 1% |
| 1B | Exposed, Solid Man-Made Structures | 33,074.56 | 20.55 | 32% |

Total ESI Shoreline:

104,947.50

Total ESI Shoreline:

65.21

Total Shoreline:

72,243.38

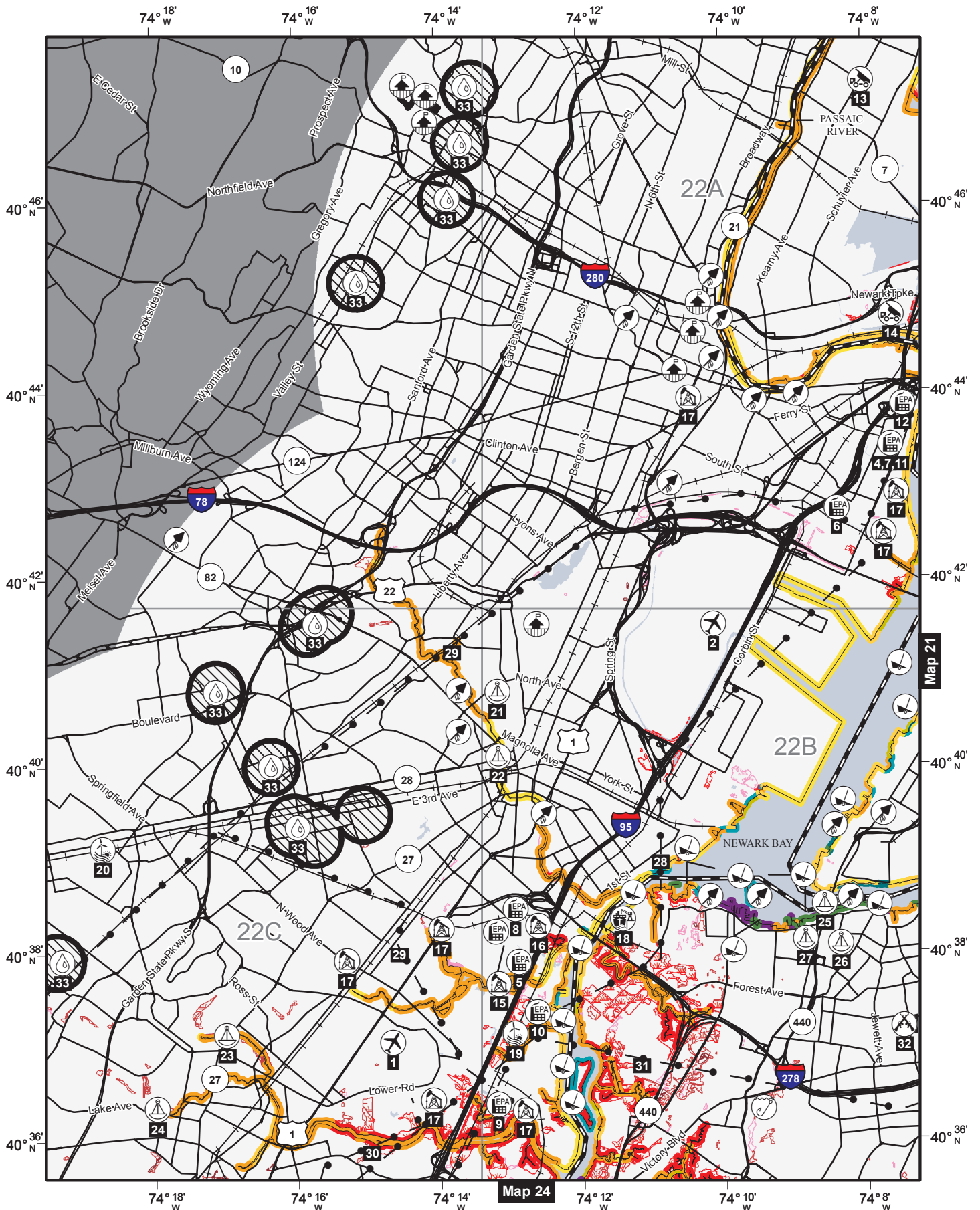
Total Shoreline:

44.89

Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov





Map 22
NY/ NJ Metropolitan Area



SEE BACK OF MAP
 for details about mapped resources and
 other resources that occur in mapped area.
 Data Published: February 2016

0 Not for Navigation 2 Miles
 0 2 Kilometers

1:100,000



Map 22
New York and New Jersey Metropolitan Area

HUMAN USE RESOURCES

| DISPLAYED ON MAP (POINTS) | | | | | |
|---------------------------|---------------------------|--|-----------------------------------|--------------|--|
| Map ID | Type | Name | Contact | Phone | |
| 1 | AIRPORT | LINDEN | | | |
| 2 | AIRPORT | NEWARK LIBERTY INTL | | | |
| 3 | EPA FACILITY | BAYWAY REFINERY | | | |
| 4 | EPA FACILITY | CARDOLITE CORPORATION | DIRECTOR OF OPERATIONS | 908-523-5472 | |
| 5 | EPA FACILITY | COGEN TECHNOLOGIES LINDEN VENTURE, LP | | 973-344-5015 | |
| 6 | EPA FACILITY | DELTECH RESIN COMPANY | PLANT SUPERINTENDENT | 908-474-0800 | |
| 7 | EPA FACILITY | ELAN INCORPORATED | PLANT ENGINEER | 973-589-0880 | |
| 8 | EPA FACILITY | INFINEUM USA L.P. BAYWAY CHEMICAL PLANT | BAYWAY CHEMICAL SHIFT TEAM LEADER | 973-344-8014 | |
| 9 | EPA FACILITY | LBT INTERMODAL, LLC | GENERAL MANAGER | 908-474-7266 | |
| 10 | EPA FACILITY | LINDEN LPG STORAGE FACILITY | GAS SYSTEM OPERATOR | 908-862-4537 | |
| 11 | EPA FACILITY | SUNOCO LOGISTICS NEWARK NJ TERMINAL | | 973-430-5075 | |
| 12 | EPA FACILITY | WELCO ACETYLENE - NEWARK | DIRECTOR OF OPERATIONS | 732-947-0523 | |
| 13 | LANDFILL | BALEFILL | | 856-220-1483 | |
| 14 | LANDFILL | KEARNY 1-D LANDFILL | | | |
| 15 | OIL FACILITY | PETROLEUM REFINERY | | | |
| 16 | OIL FACILITY | CRUDE OIL RAIL TERMINAL | | | |
| 17 | OIL FACILITY | PETROLEUM PRODUCT TERMINAL | | | |
| 18 | PORT | HOWLAND HOOK MARINE TERMINAL | | | |
| 19 | RENEWABLE ENERGY | LINDEN SOLAR FARM | | | |
| 20 | RENEWABLE ENERGY | YARDVILLE SOLAR FARM | | | |
| 21 | REPEATED MEASUREMENT SITE | ELIZABETH R AT URSINO LAKE AT ELIZABETH NJ | | | |
| 22 | REPEATED MEASUREMENT SITE | ELIZABETH RIVER AT ELIZABETH NJ | | | |
| 23 | REPEATED MEASUREMENT SITE | RAHWAY RIVER AT RAHWAY NJ | | | |
| 24 | REPEATED MEASUREMENT SITE | ROBINSONS BRANCH AT RAHWAY NJ | | | |
| 25 | REPEATED MEASUREMENT SITE | BAYONNE BRIDGE AIR GAP | | 301-713-2815 | |
| 26 | REPEATED MEASUREMENT SITE | BERGEN POINT WEST REACH, KILL VAN KULL, | | 301-713-2815 | |
| 27 | REPEATED MEASUREMENT SITE | STATION BGNN4 - 8519483 - BERGEN POINT WEST REACH, | | 228-688-2805 | |

| DISPLAYED ON MAP (LINES) | | | |
|--|--|--|----------------------|
| Map ID | Type | Name | Contact |
| 28 | PIPELINE | COLONIAL | COLONIAL PIPELINE CO |
| 29 | PIPELINE | TWIN OAKS NEWARK | SUNOCO |
| 30 | PIPELINE | HARBOR PIPELINE | SUNOCO |
| 31 | PIPELINE | BUCKEYE | BUCKEYE PARTNERS |
| DISPLAYED ON MAP (POLYGONS) | | | |
| Map ID | Type | Name | Contact |
| 32 | MILITARY | STATEN ISLAND ARMORY | |
| 33 | WATER INTAKE | WATER INTAKE AREA | |
| ALSO PRESENT IN MAPPED AREA (POLYGONS) | | | |
| Type | Name | Contact | Phone |
| ESSENTIAL HABITAT | EFH AREA | CHRIS BRUCE | 434-951-0565 |
| ESSENTIAL HABITAT | IMPORTANT BIRD AREA | IMPORTANT BIRD AREAS PROGRAM COORDINATOR | 607-254-2437 |
| ESSENTIAL HABITAT | IMPORTANT BIRD AREA | GYLLA MACGREGOR | |
| ESSENTIAL HABITAT | SIGNIFICANT COASTAL HABITAT | NYS DEPARTMENT OF STATE COORDINATOR | 518-474-6000 |
| JURISDICTIONS | | | |
| COUNTY: | BERGEN COUNTY, ESSEX COUNTY, HUDSON COUNTY, MIDDLESEX COUNTY, RICHMOND COUNTY, REGION II | | |
| COAST GUARD: | DISTRICT 1, SECTOR NEW YORK | | |
| USACE: | NORTH ATLANTIC DIVISION, NEW YORK DISTRICT | | |
| | | EPA: | REGION 2 |

SHORELINE RESOURCES

ESI POLYGON HABITAT TYPES

| ESI Rank | Habitat Classification | Area (Acres) | Area (Sq. Miles) |
|-----------------|---------------------------------|---------------------|-------------------------|
| 10A | Salt and Brackish Water Marshes | 1,499.20 | 2.34 |
| 10B | Freshwater Marshes | 226.55 | 0.35 |
| 10C | Swamps | 325.83 | 0.51 |
| 10D | Scrub and Shrub Wetlands | 23.42 | 0.04 |
| 9A | Sheltered Tidal Flats | 43.81 | 0.07 |
| 7 | Exposed Tidal Flats | 21.11 | 0.03 |

ESI SHORELINE HABITAT TYPES

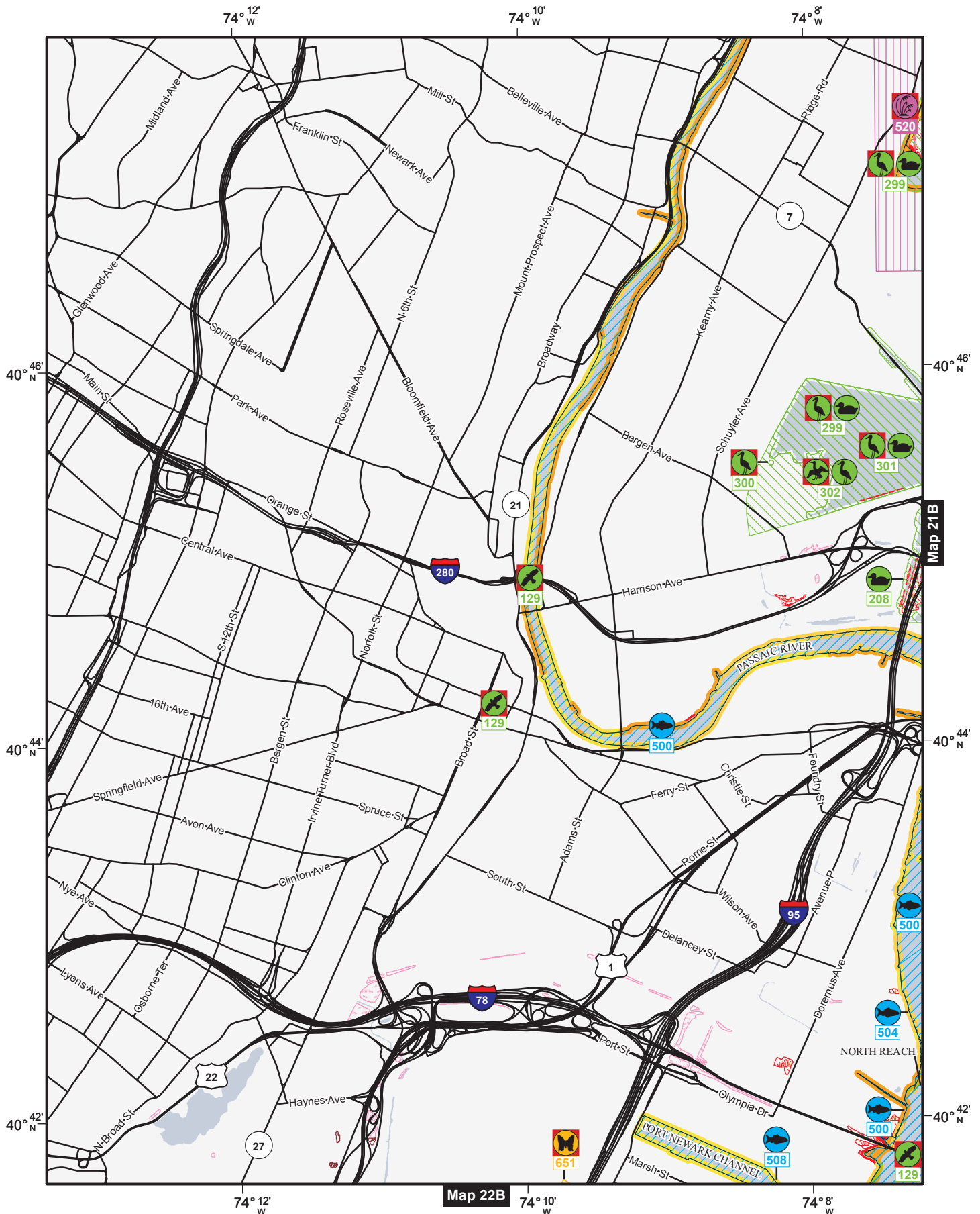
| ESI Rank | Shoreline Habitat Classification | Length (Meters) | Length (Miles) | % of ESI Shoreline |
|-----------------|---|------------------------|-----------------------|---------------------------|
| 10A | Salt and Brackish Water Marshes | 64,219.25 | 39.90 | 21% |
| 10B | Freshwater Marshes | 2,250.70 | 1.40 | 1% |
| 10C | Swamps | 3,975.49 | 2.47 | 1% |
| 9A | Sheltered Tidal Flats | 8,167.07 | 5.07 | 3% |
| 9B | Vegetated Low Banks | 134,592.61 | 83.63 | 43% |
| 8B | Sheltered, Solid Man-Made Structures | 47,431.99 | 29.47 | 15% |
| 8C | Sheltered Riprap | 25,665.60 | 15.95 | 8% |
| 7 | Exposed Tidal Flats | 4,649.21 | 2.89 | 2% |
| 6A | Gravel Beaches | 2,071.06 | 1.29 | 1% |
| 6B | Riprap | 3,042.81 | 1.89 | 1% |
| 5 | Mixed Sand and Gravel Beaches | 8,443.75 | 5.25 | 3% |
| 4 | Coarse Grained Sand Beaches | 61.32 | 0.04 | < 1% |
| 1A | Exposed, Rocky Shores | 70.96 | 0.04 | < 1% |
| 1B | Exposed, Solid Man-Made Structures | 5,142.21 | 3.20 | 2% |

Total ESI Shoreline: 309,784.02 Total ESI Shoreline: 192.49
 Total Shoreline: 218,310.98 Total Shoreline: 135.65

Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov





Map 22A

NY/ NJ Metropolitan Area



SEE BACK OF MAP
for details about mapped species and other
species that occur in the mapped area.
Data Published: February 2016

0 Not for Navigation 1 Miles
0 1 Kilometers

1:50,000



Map 22A
New York and New Jersey Metropolitan Area

BIOLOGICAL RESOURCES

Note: An asterisk (*) indicates that life stage occurs in this range but not in all months included

DISPLAYED ON MAP

BIRDS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--------|------------|---------------------|--------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 129 | Raptor | Endangered raptor 1 | Nesting | E/E | | 1 Pair | | | | | | | | | | | | | Mar-Jul | - | - | - |
| 208 | Waterfowl | Waterfowl | Migration | | | High | | | | | | | | | | | | | - | Mar-Apr | Oct-Nov | - |
| | Waterfowl | Waterfowl | Wintering | | | High | | | | | | | | | | | | | - | - | - | - |
| 299 | Wading | BC night-heron | Concentration Area | -/T | | 44 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Glossy ibis | Concentration Area | -/C | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | 81 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 492 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Green heron | Concentration Area | | | 9 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Little blue heron | Concentration Area | -/C | | 3 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | | 410 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Tricolored heron | Concentration Area | -/C | | 3 | | | | | | | | | | | | | - | - | - | - |
| | Wading | YC night-heron | Concentration Area | -/T | | 5 | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Waterfowl | Migration | | | High | | | | | | | | | | | | | - | Mar-Apr | Oct-Nov | - |
| | Waterfowl | Waterfowl | Wintering | | | High | | | | | | | | | | | | | - | - | - | - |
| 300 | Wading | Least bittern | Nesting | T/C | | - | | | | | | | | | | | | | Apr-Sep | - | - | - |
| 301 | Wading | Least bittern | Nesting | T/C | | - | | | | | | | | | | | | | Apr-Sep | - | - | - |
| | Waterfowl | Common moorhen | Nesting | | | - | | | | | | | | | | | | | May-Sep | - | - | - |
| 302 | Diving | Pied-billed grebe | Nesting | T/E | | - | | | | | | | | | | | | | Mar-Jun | - | - | - |
| | Wading | Hérons | Nesting | | | - | | | | | | | | | | | | | Mar-Sep | - | - | - |

FISH

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------|------------|------------------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 500 | Diadromous | Alewife | Nursery Area | | | - | | | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - |
| | Diadromous | Alewife | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |
| | Diadromous | Blueback herring | Nursery Area | | | - | | | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - |
| | Diadromous | Blueback herring | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |
| 504 | Diadromous | American shad | Nursery Area | | | - | | | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - |
| | Diadromous | American shad | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |
| 508 | Diadromous | Alewife | Nursery Area | | | - | | | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - |
| | Diadromous | Alewife | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |
| | Diadromous | American shad | Nursery Area | | | - | | | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - |
| | Diadromous | American shad | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |
| | Diadromous | Blueback herring | Nursery Area | | | - | | | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - |
| | Diadromous | Blueback herring | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |





HABITATS & RARE PLANTS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | |
|--------|------------|------------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|
| 520 | Plant | Endangered plant | Vulnerable Occurrence | E/E | - | - | J | F | M | A | M | J | J | A | S | O | N | D |
| | | | | | | | | | | | | | | | | | | |

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | |
|--------|------------|-----------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|
| 651 | Insect | Checkered white | Vulnerable Occurrence | C/- | - | - | J | F | M | A | M | J | J | A | S | O | N | D |
| | | | | | | | | | | | | | | | | | | |

ALSO PRESENT IN MAPPED AREA (GENERAL DISTRIBUTION)

FISH

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|--------------------|-------------------|--|--|--|--|--|--|--|--|--|--|--|-------|------|--------|-----------|--------|
|  | Diadromous | Alewife | | | | | | | | | | | | | | | | |
| | | American eel | | | | | | | | | | | | | | | | |
| | | American eel | | | | | | | | | | | | | | | | |
| | | American shad | | | | | | | | | | | | | | | | |
| | | Blueback herring | | | | | | | | | | | | | | | | |
| | | Striped bass | | | | | | | | | | | | | | | | |
|  | Estuarine Nursery | Atlantic herring | | | | | | | | | | | | | | | | |
| | | Atlantic menhaden | | | | | | | | | | | | | | | | |
| | | Bay anchovy | | | | | | | | | | | | | | | | |
| | | Bluefish | | | | | | | | | | | | | | | | |
| | | Northern kingfish | | | | | | | | | | | | | | | | |
| | | Scup | | | | | | | | | | | | | | | | |
| | | Spot | | | | | | | | | | | | | | | | |
| | | Summer flounder | | | | | | | | | | | | | | | | |
| | | Weakfish | | | | | | | | | | | | | | | | |
| | | White perch | | | | | | | | | | | | | | | | |
| | | Windowpane | | | | | | | | | | | | | | | | |
|  | Estuarine Resident | Killifish | | | | | | | | | | | | | | | | |
| | | Silversides | | | | | | | | | | | | | | | | |
|  | Marine Benthic | Atlantic tomcod | | | | | | | | | | | | | | | | |
| | | Tautog | | | | | | | | | | | | | | | | |

INVERTEBRATES

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|---------|------------------|--|--|--|--|--|--|--|--|--|--|--|-------|------|--------|-----------|--------|
|  | Crab | Blue crab | | | | | | | | | | | | | | | | |

For additional information about species locations and extent, reference the underlying GIS data available from response.restoration.noaa.gov

SHORELINE RESOURCES

ESI POLYGON HABITAT TYPES

| ESI Rank | Habitat Classification | Area (Acres) | Area (Sq. Miles) |
|----------|---------------------------------|--------------|------------------|
| 10A | Salt and Brackish Water Marshes | 54.20 | 0.08 |
| 10B | Freshwater Marshes | 47.14 | 0.07 |
| 10D | Scrub and Shrub Wetlands | 2.77 | 0.00 |
| 9A | Sheltered Tidal Flats | 6.12 | 0.01 |
| 7 | Exposed Tidal Flats | 3.77 | 0.01 |

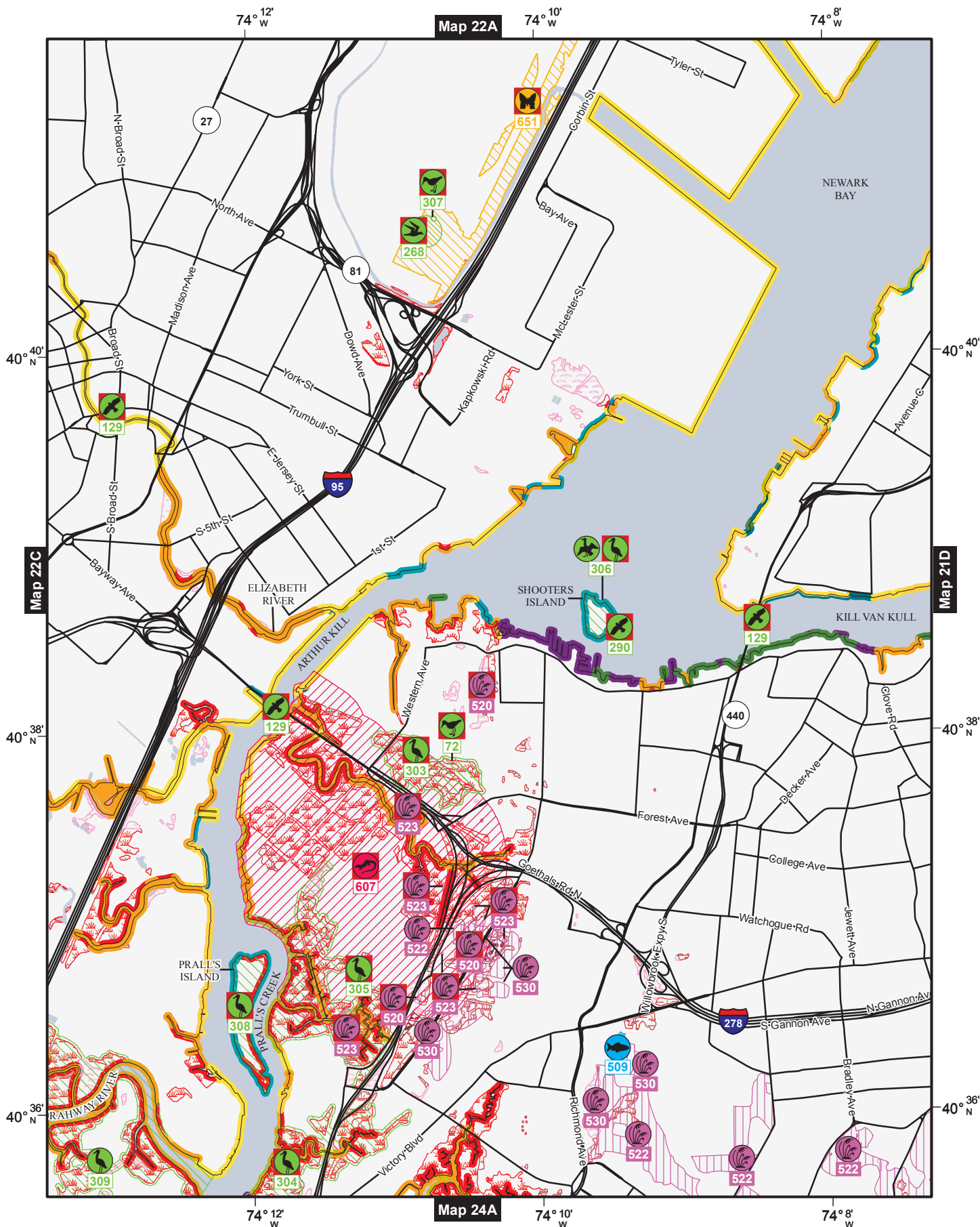
ESI SHORELINE HABITAT TYPES

| ESI Rank | Shoreline Habitat Classification | Length (Meters) | Length (Miles) | % of ESI Shoreline |
|----------------------|--------------------------------------|-----------------|----------------------|--------------------|
| 10A | Salt and Brackish Water Marshes | 1,780.40 | 1.11 | 4% |
| 9A | Sheltered Tidal Flats | 459.92 | 0.29 | 1% |
| 9B | Vegetated Low Banks | 14,037.07 | 8.72 | 33% |
| 8B | Sheltered, Solid Man-Made Structures | 13,643.23 | 8.48 | 32% |
| 8C | Sheltered Riprap | 11,657.98 | 7.24 | 28% |
| 7 | Exposed Tidal Flats | 612.21 | 0.38 | 1% |
| 5 | Mixed Sand and Gravel Beaches | 29.04 | 0.02 | < 1% |
| Total ESI Shoreline: | | 42,219.86 | Total ESI Shoreline: | 26.23 |
| | | 35,982.68 | Total Shoreline: | 22.36 |

Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov

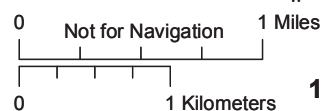




Map 22B
NY/ NJ Metropolitan Area



SEE BACK OF MAP
 for details about mapped species and other
 species that occur in the mapped area.
 Data Published: February 2016



1:50,000



Map 22B
New York and New Jersey Metropolitan Area

BIOLOGICAL RESOURCES

Note: An asterisk (*) indicates that life stage occurs in this range but not in all months included

DISPLAYED ON MAP

BIRDS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) Apr-May | Mig.(F) Aug-Sep | Molt |
|--------|------------|------------------------|--------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|--------------------|--------------------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 72 | Shorebird | Semipalmated sandpiper | Migration | -/C | | 100S | | | | | | | | | | | | | - | | | - |
| 129 | Raptor | Endangered raptor 1 | Nesting | E/E | | 1 Pair | | | | | | | | | | | | | Mar-Jul | - | - | - |
| 268 | Gull/Tern | Least tern | Nesting | T/E | | - | | | | | | | | | | | | | May-Sep | - | - | - |
| 290 | Raptor | Threatened raptor | Nesting | -/T | | 1 Pair | | | | | | | | | | | | | Apr-Jul | - | - | - |
| 303 | Wading | BC night-heron | Concentration Area | -/T | | 2 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Glossy ibis | Concentration Area | -/C | | 6 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | 3 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 34 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Green heron | Concentration Area | | | 2 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | | 86 | | | | | | | | | | | | | - | - | - | - |
| | Wading | YC night-heron | Concentration Area | -/T | | 5 | | | | | | | | | | | | | - | - | - | - |
| 304 | Wading | BC night-heron | Concentration Area | -/T | | 2 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | 2 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 6 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | | 2 | | | | | | | | | | | | | - | - | - | - |
| | Wading | YC night-heron | Concentration Area | -/T | | 7 | | | | | | | | | | | | | - | - | - | - |
| 305 | Wading | BC night-heron | Concentration Area | -/T | | 2 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Glossy ibis | Concentration Area | -/C | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | 4 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 8 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Green heron | Concentration Area | | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | | 3 | | | | | | | | | | | | | - | - | - | - |
| | Wading | YC night-heron | Concentration Area | -/T | | 4 | | | | | | | | | | | | | - | - | - | - |
| 306 | Diving | D. crested cormorant | Nesting | | | 5-50 Pairs | | | | | | | | | | | | | Jun-Sep | - | - | - |
| | Wading | BC night-heron | Nesting | -/T | | - | | | | | | | | | | | | | Mar-Jul | - | - | - |
| | Wading | Cattle egret | Nesting | -/T | | - | | | | | | | | | | | | | Apr-Aug | - | - | - |
| | Wading | Glossy ibis | Nesting | -/C | | - | | | | | | | | | | | | | Apr-Aug | - | - | - |
| | Wading | Little blue heron | Nesting | -/C | | - | | | | | | | | | | | | | Apr-Aug | - | - | - |
| | Wading | Snowy egret | Nesting | -/C | | - | | | | | | | | | | | | | Apr-Aug | - | - | - |
| | Wading | YC night-heron | Nesting | -/T | | - | | | | | | | | | | | | | Apr-Aug | - | - | - |
| 307 | Shorebird | Upland sandpiper | Nesting | T/E | | - | | | | | | | | | | | | | May-Jul | - | - | - |
| 308 | Wading | Cattle egret | Nesting | -/T | | - | | | | | | | | | | | | | Apr-Aug | - | - | - |
| | Wading | Glossy ibis | Nesting | -/C | | - | | | | | | | | | | | | | Apr-Aug | - | - | - |
| | Wading | Little blue heron | Nesting | -/C | | - | | | | | | | | | | | | | Apr-Aug | - | - | - |
| | Wading | Snowy egret | Nesting | -/C | | - | | | | | | | | | | | | | Apr-Aug | - | - | - |
| 309 | Wading | YC night-heron | Nesting | -/T | | - | | | | | | | | | | | | | Apr-Aug | - | - | - |
| | Wading | Wading birds | Concentration Area | | | High | | | | | | | | | | | | | - | - | - | - |

FISH

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Larvae | Juveniles | Adults |
|--------|------------|-----------------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | |
| 509 | Freshwater | Brown bullhead | Harvest Area | - | - | - | | | | | | | | | | | | | May-Jun | May-Aug | Jan-Dec |
| | Freshwater | Golden shiner | Harvest Area | - | - | - | | | | | | | | | | | | | May-Aug | May-Aug | Jan-Dec |
| | Freshwater | Largemouth bass | Harvest Area | - | - | - | | | | | | | | | | | | | Apr-Jun | Apr-Aug | Jan-Dec |
| | Freshwater | Pumpkinseed | Harvest Area | - | - | - | | | | | | | | | | | | | Apr-Jun | Apr-Aug | Jan-Dec |
| | Freshwater | Smallmouth bass | Harvest Area | - | - | - | | | | | | | | | | | | | Apr-Jun | Apr-Aug | Jan-Dec |

HABITATS & RARE PLANTS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Larvae | Juveniles | Adults |
|--------|------------|------------------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|--------|-----------|--------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | |
| 520 | Plant | Endangered plant | Vulnerable Occurrence | E/E | - | - | | | | | | | | | | | | | - | - | - |
| 522 | Upland | Rare upland community | Vulnerable Occurrence | - | - | - | | | | | | | | | | | | | - | - | - |
| 523 | Plant | Threatened plant | Vulnerable Occurrence | T/- | - | - | | | | | | | | | | | | | - | - | - |
| 530 | Wetland | Rare wetland community | Vulnerable Occurrence | - | - | - | | | | | | | | | | | | | - | - | - |

REPTILES & AMPHIBIANS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Larvae | Juveniles | Adults |
|--------|------------|-----------------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|--------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | |
| 607 | Amphibian | Southern leopard frog | Vulnerable Occurrence | C/- | - | - | | | | | | | | | | | | | - | - | Mar-Oct |

INVERTEBRATES






| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Larvae | Juveniles | Adults |
|--------|------------|-----------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|--------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | |
| 651 | Insect | Checkered white | Vulnerable Occurrence | C/- | - | - | | | | | | | | | | | | | - | - | Jul-Oct |

WIDESPREAD IN MAPPED AREA (> 10 SQUARE KILOMETERS)

FISH

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Larvae | Juveniles | Adults |
|--------|------------|------------------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|--------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | |
| | Diadromous | Alewife | Nursery Area | - | - | - | | | | | | | | | | | | | - | - | Mar-Jun |
| | | Alewife | Spawning Area | - | - | - | | | | | | | | | | | | | - | - | Mar-Jun |
| | | American shad | Nursery Area | - | - | - | | | | | | | | | | | | | - | - | Mar-Jun |
| | | American shad | Spawning Area | - | - | - | | | | | | | | | | | | | - | - | Mar-Jun |
| | | Blueback herring | Nursery Area | - | - | - | | | | | | | | | | | | | - | - | Mar-Jun |
| | | Blueback herring | Spawning Area | - | - | - | | | | | | | | | | | | | - | - | Mar-Jun |

FISH

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|-------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Diadromous | | | | | | | | | | | | | - | - | Jun-Jul | Apr-Nov | Mar-Jun |
| | Alewife | | | | | | | | | | | | | | | | Jan-Dec | Sep-Nov |
| | American eel | | | | | | | | | | | | | | | Apr-Aug | Jan-Dec | Mar-Jun |
| | American eel | | | | | | | | | | | | | | | - | Jan-Dec | Sep-Nov |
| | American shad | | | | | | | | | | | | | | | - | Jan-Dec | Apr-Aug |
|  | Blueback herring | | | | | | | | | | | | | | | May-Jun | May-Nov | Mar-Jul |
| | Striped bass | | | | | | | | | | | | | | | - | Jan-Dec | Jan-Dec |
| | Atlantic herring | | | | | | | | | | | | | | | Apr-May | Jan-May | Jan-May |
| | Atlantic menhaden | | | | | | | | | | | | | | | Apr-Jul | Apr-Nov | May-Nov |
| | Bay anchovy | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jul-Dec | May-Nov |
|  | Bluefish | | | | | | | | | | | | | | | - | May-Oct | May-Oct |
| | Northern kingfish | | | | | | | | | | | | | | | - | Jun-Oct | Jun-Oct |
| | Scup | | | | | | | | | | | | | | | - | Jun-Oct | Jun-Oct |
| | Spot | | | | | | | | | | | | | | | - | Jun-Nov | Jun-Nov |
| | Summer flounder | | | | | | | | | | | | | | | - | May-Oct | May-Oct |
|  | Weakfish | | | | | | | | | | | | | Jun-Aug | Jun-Aug | Jun-Aug | Jun-Nov | May-Dec |
| | White perch | | | | | | | | | | | | | May-Jun | May-Jun | May-Jun | Jan-Dec | Jan-Dec |
| | Windowpane | | | | | | | | | | | | | | | Apr-Nov | Jan-Dec | Jan-Dec |
| | Winter flounder | | | | | | | | | | | | | Nov-Apr | Nov-Apr | Nov-May | Jan-Dec | Oct-Jun |
| | Killifish | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
|  | Silversides | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | Atlantic tomcod | | | | | | | | | | | | | Dec-Feb | Dec-Mar | Jan-Aug | Jan-Dec | Jan-Dec |
| | Tautog | | | | | | | | | | | | | | Jun | Jun | Apr-Dec | Apr-Nov |

INVERTEBRATES

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|------------|-----------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|------|--------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| Crab | Blue crab | | | | | | | | | | | | | May-Oct | - | - | Jan-Dec | Jan-Dec |

For additional information about species locations and extent, reference the underlying GIS data available from response.restoration.noaa.gov

SHORELINE RESOURCES

ESI POLYGON HABITAT TYPES

| ESI Rank | Habitat Classification | Area (Acres) | Area (Sq. Miles) |
|----------|---------------------------------|--------------|------------------|
| 10A | Salt and Brackish Water Marshes | 1,200.10 | 1.88 |
| 10B | Freshwater Marshes | 162.89 | 0.25 |
| 10C | Swamps | 177.21 | 0.28 |
| 10D | Scrub and Shrub Wetlands | 10.28 | 0.02 |
| 9A | Sheltered Tidal Flats | 34.41 | 0.05 |
| 7 | Exposed Tidal Flats | 17.32 | 0.03 |

ESI SHORELINE HABITAT TYPES

| ESI Rank | Shoreline Habitat Classification | Length (Meters) | Length (Miles) | % of ESI Shoreline |
|----------|--------------------------------------|-----------------|----------------|--------------------|
| 10A | Salt and Brackish Water Marshes | 54,382.37 | 33.79 | 27% |
| 10B | Freshwater Marshes | 1,155.29 | 0.72 | 1% |
| 10C | Swamps | 113.90 | 0.07 | < 1% |
| 9A | Sheltered Tidal Flats | 7,421.54 | 4.61 | 4% |
| 9B | Vegetated Low Banks | 75,981.40 | 47.21 | 37% |
| 8B | Sheltered, Solid Man-Made Structures | 31,659.76 | 19.67 | 16% |
| 8C | Sheltered Riprap | 10,676.40 | 6.63 | 5% |
| 7 | Exposed Tidal Flats | 4,033.87 | 2.51 | 2% |
| 6A | Gravel Beaches | 2,071.06 | 1.29 | 1% |
| 6B | Riprap | 3,042.67 | 1.89 | 1% |
| 5 | Mixed Sand and Gravel Beaches | 8,414.71 | 5.23 | 4% |
| 4 | Coarse Grained Sand Beaches | 61.32 | 0.04 | < 1% |
| 1A | Exposed, Rocky Shores | 70.96 | 0.04 | < 1% |
| 1B | Exposed, Solid Man-Made Structures | 5,137.40 | 3.19 | 3% |

Total ESI Shoreline: 204,222.65 Total ESI Shoreline: 126.90
Total Shoreline: 132,370.14 Total Shoreline: 82.25

Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov



Map 22C
New York and New Jersey Metropolitan Area

BIOLOGICAL RESOURCES

Note: An asterisk (*) indicates that life stage occurs in this range but not in all months included

DISPLAYED ON MAP

BIRDS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--------|------------|---------------------|--------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 269 | Wading | YC night-heron | Nesting | -JT | | - | | | | | | | | | | | | | Apr-Aug | - | - | - |
| 272 | Raptor | Northern harrier | Nesting | T/E | | 1 Pair | | | | | | | | | | | | | Apr-Aug | - | - | - |
| 309 | Wading | Wading birds | Concentration Area | | | High | | | | | | | | | | | | | - | - | - | - |
| 310 | Bird | Colonial waterbirds | Roosting | | | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Roosting | | | 2 | | | | | | | | | | | | | - | - | - | - |

ALSO PRESENT IN MAPPED AREA (GENERAL DISTRIBUTION)

FISH

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--|--------------|------------------|---|---|---|---|---|---|---|---|---|---|---|-------|------|--------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  Diadromous | American eel | | | | | | | | | | | | | - | - | - | Jan-Dec | Sep-Nov |

INVERTEBRATES

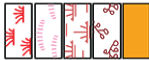
| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--|-----------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|------|--------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  Crab | Blue crab | | | | | | | | | | | | | May-Oct | - | - | Jan-Dec | Jan-Dec |

For additional information about species locations and extent, reference the underlying GIS data available from response.restoration.noaa.gov

SHORELINE RESOURCES

ESI POLYGON HABITAT TYPES

| ESI Rank | Habitat Classification | Area (Acres) | Area (Sq. Miles) |
|----------|---------------------------------|--------------|------------------|
| 10A | Salt and Brackish Water Marshes | 243.64 | 0.38 |
| 10B | Freshwater Marshes | 15.27 | 0.02 |
| 10C | Swamps | 129.29 | 0.20 |
| 10D | Scrub and Shrub Wetlands | 10.37 | 0.02 |
| 9A | Sheltered Tidal Flats | 3.28 | 0.01 |



ESI SHORELINE HABITAT TYPES

| ESI Rank | Shoreline Habitat Classification | Length (Meters) | Length (Miles) | % of ESI Shoreline |
|----------------------|--------------------------------------|-----------------|----------------------------|--------------------|
| 10A | Salt and Brackish Water Marshes | 8,020.87 | 4.98 | 14% |
| 10B | Freshwater Marshes | 1,019.79 | 0.63 | 2% |
| 10C | Swamps | 3,296.51 | 2.05 | 6% |
| 9A | Sheltered Tidal Flats | 285.61 | 0.18 | < 1% |
| 9B | Vegetated Low Banks | 40,408.36 | 25.11 | 70% |
| 8B | Sheltered, Solid Man-Made Structures | 1,868.47 | 1.16 | 3% |
| 8C | Sheltered Riprap | 3,069.02 | 1.91 | 5% |
| Total ESI Shoreline: | | 57,968.63 | Total ESI Shoreline: 36.02 | |
| | | 45,264.71 | Total Shoreline: 28.13 | |

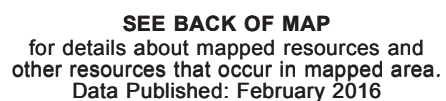
Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov





NY/ NJ Metropolitan Area



for details about mapped resources and other resources that occur in mapped area.
Data Published: February 2016



Map 23
New York and New Jersey Metropolitan Area

HUMAN USE RESOURCES

| DISPLAYED ON MAP (POINTS) | | | | |
|---------------------------|---------------------------|---|-----------------------------------|--------------|
| Map ID | Type | Name | Contact | Phone |
| 1 | EPA FACILITY | ASHLAND SPECIALTY INGREDIENTS G.P. - PARLIN PLANT | PLANT MANAGER | 732-353-7701 |
| 2 | EPA FACILITY | DUPONT - PARLIN | | 732-613-2178 |
| 3 | EPA FACILITY | EQUISTAR CHEMICALS, LP | HSE MANAGER | 732-777-2221 |
| 4 | EPA FACILITY | GRACE EDISON PLANT | MANAGER, HSSE, EQUISTAR CHEMICALS | 732-777-2221 |
| 5 | LANDFILL | EDGEBORO (MCUA) LANDFILL | | |
| 6 | LANDFILL | EDISON TOWNSHIP SOLID WASTE LANDFILL | | |
| 7 | LANDFILL | INDUSTRIAL LAND RECLAIMING (ILR) LANDFILL | | |
| 8 | OIL FACILITY | PETROLEUM PRODUCT TERMINAL | | |
| 9 | RENEWABLE ENERGY | SILVER LAKE SOLAR FARM | | |
| 10 | REPEATED MEASUREMENT SITE | BOUND BROOK AT MIDDLESEX NJ | | |
| 11 | REPEATED MEASUREMENT SITE | DEEP RUN AT OLD BRIDGE NJ | | |
| 12 | REPEATED MEASUREMENT SITE | LAWRENCE BROOK AT FARRINGTON DAM NJ | | |
| 13 | REPEATED MEASUREMENT SITE | LAWRENCE BROOK AT WESTONS MILLS NJ | | |
| 14 | REPEATED MEASUREMENT SITE | SOUTH RIVER AT OLD BRIDGE NJ | | |

| DISPLAYED ON MAP (LINES) | | | | |
|--------------------------|----------|------------------|----------------------|-------|
| Map ID | Type | Name | Contact | Phone |
| 15 | PIPELINE | COLONIAL | COLONIAL PIPELINE CO | |
| 16 | PIPELINE | TWIN OAKS NEWARK | SUNOCO | |
| 17 | PIPELINE | HARBOR PIPELINE | SUNOCO | |
| 18 | PIPELINE | BUCKEYE | BUCKEYE PARTNERS | |

| DISPLAYED ON MAP (POLYGONS) | | | | |
|-----------------------------|--------------|-------------------|---------|-------|
| Map ID | Type | Name | Contact | Phone |
| 19 | WATER INTAKE | WATER INTAKE AREA | | |

| ALSO PRESENT IN MAPPED AREA (POLYGONS) | | | | |
|--|---------------------|-----------------|--------------|--|
| Type | Name | Contact | Phone | |
| ESSENTIAL HABITAT | EFH AREA | CHRIS BRUCE | 434-951-0565 | |
| ESSENTIAL HABITAT | IMPORTANT BIRD AREA | GYLLA MACGREGOR | | |

| JURISDICTIONS | | | | |
|---------------|--|-------|-----------|--|
| COUNTY: | MIDDLESEX COUNTY, SOMERSET COUNTY | FEMA: | REGION II | |
| COAST GUARD: | DISTRICT 1, SECTOR NEW YORK | EPA: | REGION 2 | |
| USACE: | NORTH ATLANTIC DIVISION, NEW YORK DISTRICT | | | |

SHORELINE RESOURCES

ESI POLYGON HABITAT TYPES

| ESI Rank | Habitat Classification | Area (Acres) | Area (Sq. Miles) |
|----------|---------------------------------|--------------|------------------|
| 10A | Salt and Brackish Water Marshes | 2,312.97 | 3.61 |
| 10B | Freshwater Marshes | 344.49 | 0.54 |
| 10C | Swamps | 3,044.58 | 4.76 |
| 10D | Scrub and Shrub Wetlands | 495.24 | 0.77 |
| 9A | Sheltered Tidal Flats | 37.46 | 0.06 |
| 7 | Exposed Tidal Flats | 6.79 | 0.01 |

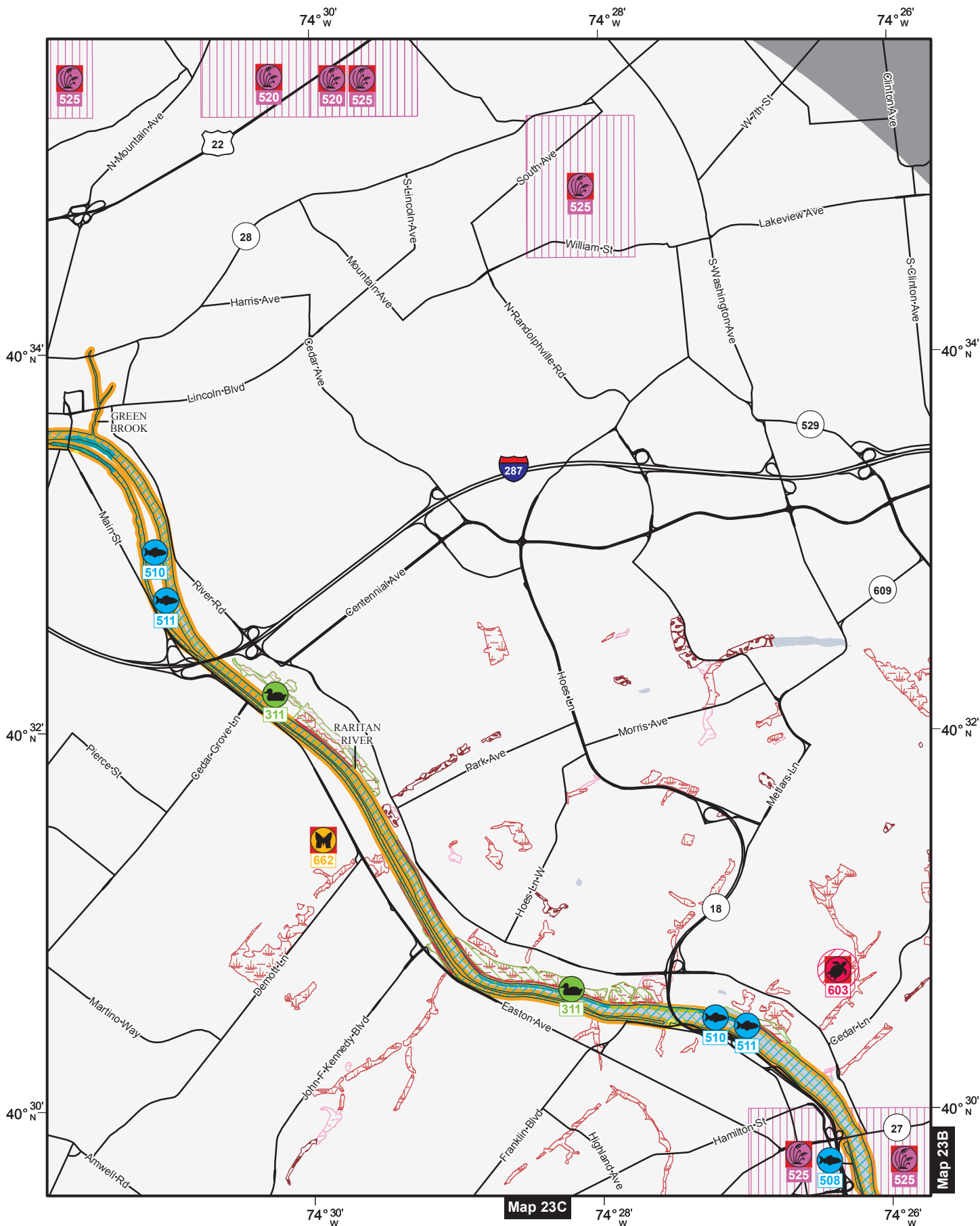
ESI SHORELINE HABITAT TYPES

| ESI Rank | Shoreline Habitat Classification | Length (Meters) | Length (Miles) | % of ESI Shoreline |
|----------------------|--------------------------------------|-----------------|----------------|--------------------|
| 10A | Salt and Brackish Water Marshes | 53,066.33 | 32.97 | 22% |
| 10B | Freshwater Marshes | 2,128.21 | 1.32 | 1% |
| 10C | Swamps | 10,892.79 | 6.77 | 4% |
| 10D | Scrub and Shrub Wetlands | 3,946.70 | 2.45 | 2% |
| 9A | Sheltered Tidal Flats | 4,718.39 | 2.93 | 2% |
| 9B | Vegetated Low Banks | 154,583.40 | 96.05 | 64% |
| 8B | Sheltered, Solid Man-Made Structures | 4,828.00 | 3.00 | 2% |
| 8C | Sheltered Riprap | 3,498.99 | 2.17 | 1% |
| 7 | Exposed Tidal Flats | 790.81 | 0.49 | < 1% |
| 5 | Mixed Sand and Gravel Beaches | 3,590.56 | 2.23 | 1% |
| 4 | Coarse Grained Sand Beaches | 121.83 | 0.08 | < 1% |
| Total ESI Shoreline: | | 242,166.01 | 150.47 | |
| Total Shoreline: | | 163,181.81 | 101.40 | |

Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov





Map 23A

NY/ NJ Metropolitan Area



SEE BACK OF MAP
for details about mapped species and other
species that occur in the mapped area.
Data Published: February 2016

0 Not for Navigation 1 Miles
0 1 Kilometers

1:50,000



Map 23A
New York and New Jersey Metropolitan Area

BIOLOGICAL RESOURCES

Note: An asterisk (*) indicates that life stage occurs in this range but not in all months included

DISPLAYED ON MAP

BIRDS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--------|------------|--------------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 311 | Waterfowl | Canada goose | Wintering | | | 10000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Waterfowl | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |

FISH

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------|------------|------------------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|--------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 508 | Diadromous | Alewife | Nursery Area | | | - | | | | | | | | | | | | | - | - | - | - | - |
| | Diadromous | Alewife | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |
| | Diadromous | American shad | Nursery Area | | | - | | | | | | | | | | | | | - | - | - | - | - |
| | Diadromous | American shad | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |
| | Diadromous | Blueback herring | Nursery Area | | | - | | | | | | | | | | | | | - | - | - | - | - |
| | Diadromous | Blueback herring | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |
| 510 | Diadromous | Alewife | Nursery Area | | | - | | | | | | | | | | | | | - | - | - | - | - |
| | Diadromous | Alewife | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |
| | Diadromous | American shad | Nursery Area | | | - | | | | | | | | | | | | | - | - | - | - | - |
| | Diadromous | American shad | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |
| 511 | Diadromous | Blueback herring | Nursery Area | | | - | | | | | | | | | | | | | - | - | - | - | - |
| | Diadromous | Blueback herring | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |

HABITATS & RARE PLANTS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | | | | |
|--------|------------|------------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 520 | Plant | Endangered plant | Vulnerable Occurrence | E/E | | - | | | | | | | | | | | | | - | - | - | - |
| 525 | Plant | Rare plant | Vulnerable Occurrence | C/C | | - | | | | | | | | | | | | | - | - | - | - |

REPTILES & AMPHIBIANS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Hatch | Internest | Juveniles | Adults |
|--------|------------|--------------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|-------|-----------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 603 | Turtle | Eastern box turtle | Vulnerable Occurrence | C/C | | - | | | | | | | | | | | | | - | - | - | - | Apr-Nov |

INVERTEBRATES

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------|------------|-------------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 662 | Insect | Leonard's skipper | Vulnerable Occurrence | -/C | | - | | | | | | | | | | | | | Aug-Sep | Aug-Sep | Jan-Dec | Jul-Aug | Aug-Sep |

ALSO PRESENT IN MAPPED AREA (GENERAL DISTRIBUTION)

BIRDS

 **Subelement**
Waterfowl



Nest - **Mig.(S)** - **Mig.(F)** **Molt** -

FISH

 **Subelement**
Diadromous



Spawn - **Eggs** - **Larvae** - **Juveniles** Jan-Dec **Adults** Sep-Nov

INVERTEBRATES

 **Subelement**
Crab

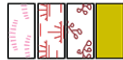


Spawn May-Oct **Eggs** - **Larvae** - **Juveniles** Jan-Dec **Adults** Jan-Dec

For additional information about species locations and extent, reference the underlying GIS data available from response.restoration.noaa.gov

SHORELINE RESOURCES

ESI POLYGON HABITAT TYPES



| ESI Rank | Habitat Classification | Area (Acres) | Area (Sq. Miles) |
|----------|--------------------------|--------------|------------------|
| 10B | Freshwater Marshes | 58.94 | 0.09 |
| 10C | Swamps | 423.56 | 0.66 |
| 10D | Scrub and Shrub Wetlands | 59.43 | 0.09 |
| 7 | Exposed Tidal Flats | 6.79 | 0.01 |

ESI SHORELINE HABITAT TYPES



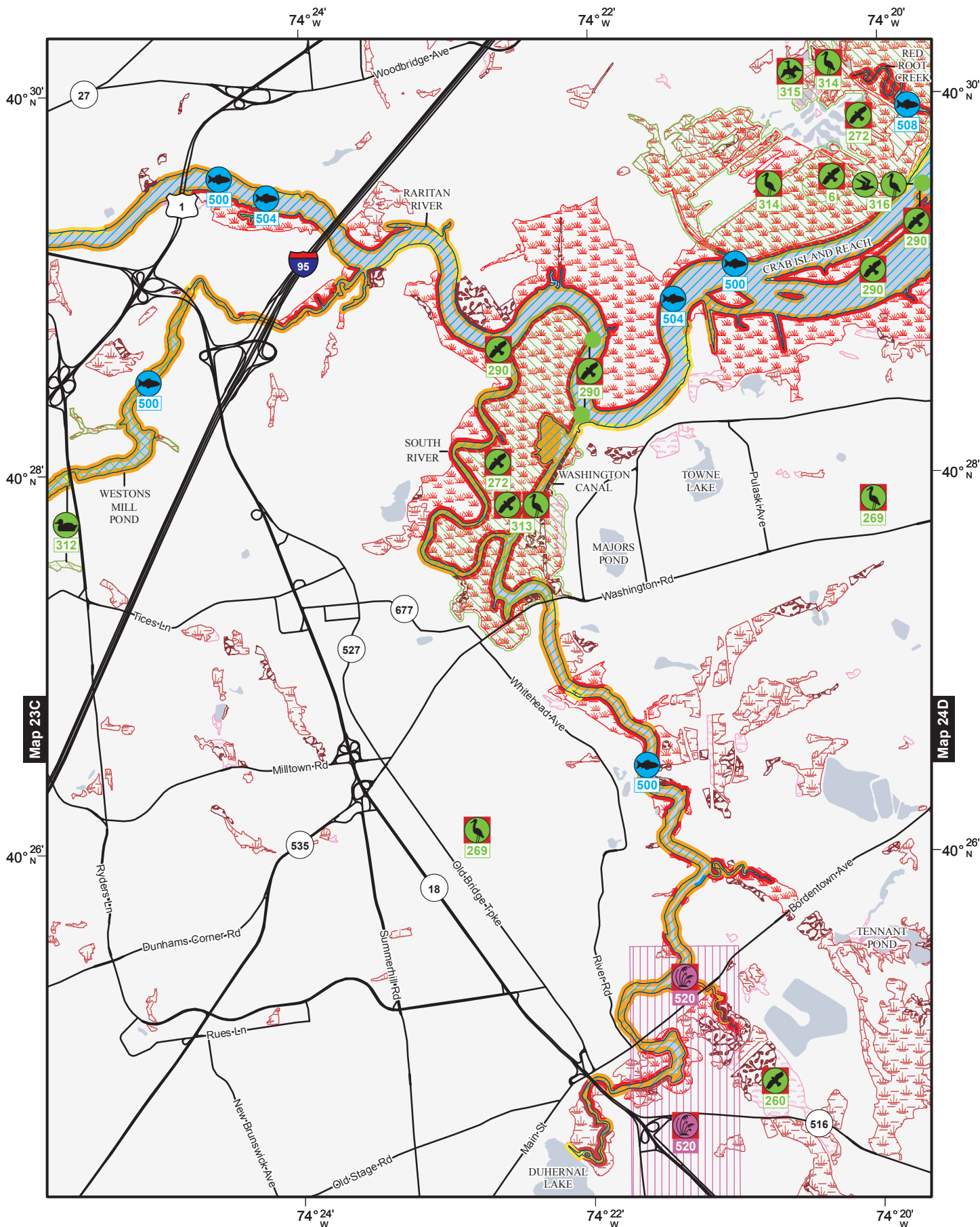
| ESI Rank | Shoreline Habitat Classification | Length (Meters) | Length (Miles) | % of ESI Shoreline |
|----------|--------------------------------------|-----------------|----------------|--------------------|
| 10B | Freshwater Marshes | 32.14 | 0.02 | < 1% |
| 10C | Swamps | 5,484.98 | 3.41 | 10% |
| 9B | Vegetated Low Banks | 43,582.64 | 27.08 | 80% |
| 8B | Sheltered, Solid Man-Made Structures | 865.66 | 0.54 | 2% |
| 7 | Exposed Tidal Flats | 790.81 | 0.49 | 1% |
| 5 | Mixed Sand and Gravel Beaches | 3,590.56 | 2.23 | 7% |

Total ESI Shoreline: 54,346.80 Total ESI Shoreline: 33.77
Total Shoreline: 45,192.39 Total Shoreline: 28.08

Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov

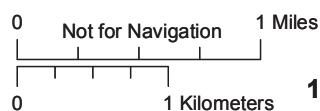




Map 23B
NY/ NJ Metropolitan Area



SEE BACK OF MAP
 for details about mapped species and other
 species that occur in the mapped area.
 Data Published: February 2016



1:50,000



Map 23B
New York and New Jersey Metropolitan Area

BIOLOGICAL RESOURCES

Note: An asterisk (*) indicates that life stage occurs in this range but not in all months included

DISPLAYED ON MAP

BIRDS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--------|------------|---------------------|--------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 6 | Raptor | Northern harrier | Nesting | T/E | | - | | | | | | | | | | | | | Apr-Aug | - | - | - |
| 260 | Raptor | Endangered raptor 2 | Nesting | T/E | | 1 Pair | | | | | | | | | | | | | - | - | - | - |
| 269 | Wading | YC night-heron | Nesting | -/T | | - | | | | | | | | | | | | | Apr-Aug | - | - | - |
| 272 | Raptor | Northern harrier | Nesting | T/E | | 1 Pair | | | | | | | | | | | | | Apr-Aug | - | - | - |
| 290 | Raptor | Threatened raptor | Nesting | -/T | | 1 Pair | | | | | | | | | | | | | Apr-Jul | - | - | - |
| 312 | Waterfowl | Canada goose | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Common merganser | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Snow goose | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| 313 | Raptor | Northern harrier | Nesting | T/E | | - | | | | | | | | | | | | | Apr-Aug | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | 3 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 4 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | | 4 | | | | | | | | | | | | | - | - | - | - |
| | Wading | YC night-heron | Concentration Area | -/T | | 2 | | | | | | | | | | | | | - | - | - | - |
| 314 | Wading | BC night-heron | Concentration Area | -/T | | 3 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Glossy ibis | Concentration Area | -/C | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | 15 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 92 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Green heron | Concentration Area | | | 6 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Little blue heron | Concentration Area | -/C | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | | 53 | | | | | | | | | | | | | - | - | - | - |
| | Wading | YC night-heron | Concentration Area | -/T | | 1 | | | | | | | | | | | | | - | - | - | - |
| 315 | Diving | Pied-billed grebe | Nesting | T/E | | 1 Pair | | | | | | | | | | | | | Mar-Jun | - | - | - |
| 316 | Bird | Colonial waterbirds | Roosting | | | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Roosting | | | 35 | | | | | | | | | | | | | - | - | - | - |

FISH

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------|------------|------------------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 500 | Diadromous | Alewife | Nursery Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | Jun-Aug | Aug-Oct | - |
| | Diadromous | Alewife | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | - | - | - | Mar-Jun |
| | Diadromous | Blueback herring | Nursery Area | | | - | | | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - |
| | Diadromous | Blueback herring | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |
| 504 | Diadromous | American shad | Nursery Area | | | - | | | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - |
| | Diadromous | American shad | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |
| 508 | Diadromous | Alewife | Nursery Area | | | - | | | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - |
| | Diadromous | Alewife | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |
| | Diadromous | American shad | Nursery Area | | | - | | | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - |

FISH (continued)


| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------|------------|------------------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| | Diadromous | American shad | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |
| | Diadromous | Blueback herring | Nursery Area | | | - | | | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - |
| | Diadromous | Blueback herring | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |

HABITATS & RARE PLANTS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------|------------|------------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|-------|------|--------|-----------|--------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 520 | Plant | Endangered plant | Vulnerable Occurrence | E/E | | - | | | | | | | | | | | | | - | - | - | - | - |

WIDESPREAD IN MAPPED AREA (> 10 SQUARE KILOMETERS)

BIRDS

| <div></div> <div>Subelement</div> | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--|--------------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|---------|---------|------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| Waterfowl | Canada goose | Wintering | | | 10000S | | | | | | | | | | | | | | - | - | - |
| | Waterfowl | Wintering | | | 100S | | | | | | | | | | | | | | - | - | - |

HABITATS & RARE PLANTS


| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Mig.(S) | Mig.(F) | Molt | | |
|---|---------|-------------------|-----------------------|-----|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|------|---|---|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Plant | Rare plant | Vulnerable Occurrence | C/C | - | | | | | | | | | | | | | | - | - | - | - |

ALSO PRESENT IN MAPPED AREA (GENERAL DISTRIBUTION)

BIRDS

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|---|-----------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|---------|---------|------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Waterfowl | | | | | | | | | | | | | - | - | - | - |

FISH

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|-------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Diadromous | | | | | | | | | | | | | - | - | Jun-Jul | Apr-Nov | Mar-Jun |
| | Alewife | | | | | | | | | | | | | - | - | Apr-Aug | Jan-Dec | Sep-Nov |
| | American eel | | | | | | | | | | | | | - | - | - | Jan-Dec | Sep-Nov |
| | American eel | | | | | | | | | | | | | - | - | - | Jan-Dec | Sep-Nov |
| | American shad | | | | | | | | | | | | | - | - | - | Jan-Dec | Apr-Aug |
| | Blueback herring | | | | | | | | | | | | | - | - | May-Jun | May-Nov | Mar-Jul |
| | Striped bass | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Atlantic herring | | | | | | | | | | | | | - | - | Apr-May | Jan-May | Jan-May |
| | Atlantic menhaden | | | | | | | | | | | | | - | - | Apr-Jul | Apr-Nov | May-Nov |
| | Bay anchovy | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jul-Dec | May-Nov |
| | Bluefish | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Northern kingfish | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Scup | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Spot | | | | | | | | | | | | | - | - | - | Jun-Nov | Jun-Nov |
| | Summer flounder | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |

New York and New Jersey Metropolitan Area: Map 23B

FISH (continued)

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Eggs | Larvae | Juveniles | Adults |
|--------------------|-----------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| | Weakfish | | | | | | | | | | | | | Jun-Aug | Jun-Aug | Jun-Nov | May-Dec |
| | White perch | | | | | | | | | | | | | May-Jun | May-Jun | Jan-Dec | Jan-Dec |
| | Windowpane | | | | | | | | | | | | | - | Apr-Nov | Jan-Dec | Jan-Dec |
| | Winter flounder | | | | | | | | | | | | | Nov-Apr | Nov-May | Jan-Dec | Oct-Jun |
| Estuarine Resident | Killifish | | | | | | | | | | | | | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | Silversides | | | | | | | | | | | | | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | Atlantic tomcod | | | | | | | | | | | | | Dec-Feb | Jan-Aug | Jan-Dec | Jan-Dec |
| Marine Benthic | Tautog | | | | | | | | | | | | | Jun | Jun | Apr-Dec | Apr-Nov |

INVERTEBRATES

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Eggs | Larvae | Juveniles | Adults |
|------------|-----------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|--------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| Crab | Blue crab | | | | | | | | | | | | | May-Oct | - | Jan-Dec | Jan-Dec |

For additional information about species locations and extent, reference the underlying GIS data available from response.restoration.noaa.gov

SHORELINE RESOURCES

| ESI POLYGON HABITAT TYPES | | |
|---------------------------|---------------------------------|--------------|
| ESI Rank | Habitat Classification | Area (Acres) |
| 10A | Salt and Brackish Water Marshes | 2,247.05 |
| 10B | Freshwater Marshes | 187.34 |
| 10C | Swamps | 878.34 |
| 10D | Scrub and Shrub Wetlands | 262.87 |
| 9A | Sheltered Tidal Flats | 37.46 |

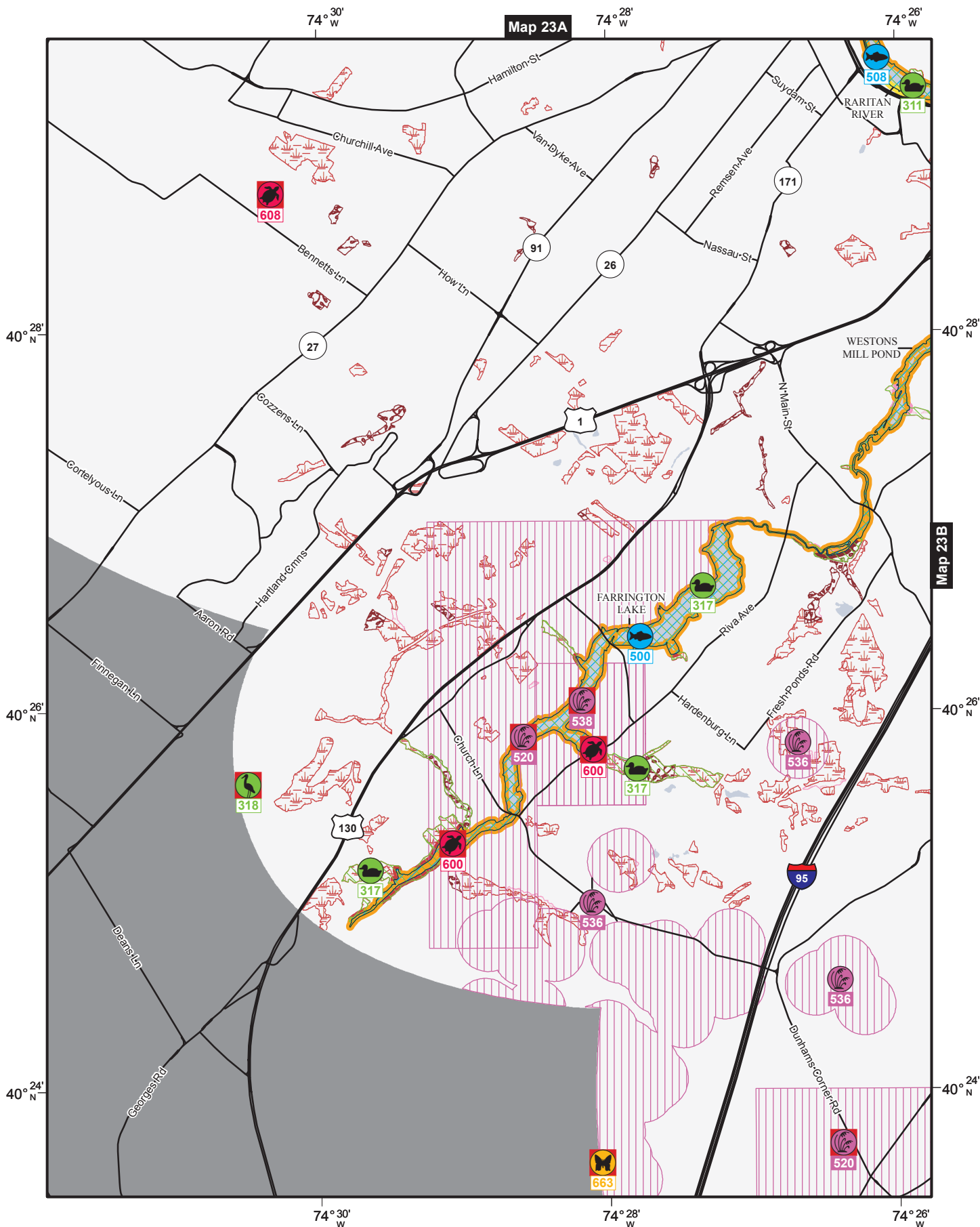
| ESI SHORELINE HABITAT TYPES | | |
|-----------------------------|--------------------------------------|-----------------|
| ESI Rank | Shoreline Habitat Classification | Length (Meters) |
| 10A | Salt and Brackish Water Marshes | 52,860.35 |
| 10B | Freshwater Marshes | 281.45 |
| 10C | Swamps | 3,218.89 |
| 10D | Scrub and Shrub Wetlands | 3,104.18 |
| 9A | Sheltered Tidal Flats | 4,718.39 |
| 9B | Vegetated Low Banks | 83,853.11 |
| 8B | Sheltered, Solid Man-Made Structures | 3,461.74 |
| 8C | Sheltered Riprap | 3,455.69 |
| 4 | Coarse Grained Sand Beaches | 121.83 |

Total ESI Shoreline: 155,075.63
Total ESI Shoreline: 96.36
Total Shoreline: 90,297.87
Total Shoreline: 56.11

Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov





Map 23C

NY/ NJ Metropolitan Area



SEE BACK OF MAP
for details about mapped species and other
species that occur in the mapped area.
Data Published: February 2016

0 Not for Navigation 1 Miles
0 1 Kilometers

1:50,000



Map 23C
New York and New Jersey Metropolitan Area

BIOLOGICAL RESOURCES

Note: An asterisk (*) indicates that life stage occurs in this range but not in all months included

DISPLAYED ON MAP

BIRDS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--------|------------|------------------|-------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 311 | Waterfowl | Canada goose | Wintering | | | 10000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Waterfowl | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| 317 | Waterfowl | Canada goose | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Common merganser | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Snow goose | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Waterfowl | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| 318 | Wading | Great blue heron | Nesting | -/C | | - | | | | | | | | | | | | | Mar-Jul | - | - | - |

FISH

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------|------------|------------------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 500 | Diadromous | Alewife | Nursery Area | | | - | | | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - |
| | Diadromous | Alewife | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |
| 508 | Diadromous | Blueback herring | Nursery Area | | | - | | | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - |
| | Diadromous | Blueback herring | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |
| | Diadromous | Alewife | Nursery Area | | | - | | | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - |
| | Diadromous | Alewife | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |
| | Diadromous | American shad | Nursery Area | | | - | | | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - |
| | Diadromous | American shad | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |
| | Diadromous | Blueback herring | Nursery Area | | | - | | | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - |
| | Diadromous | Blueback herring | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |

HABITATS & RARE PLANTS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Hatch | Internest | Juveniles | Adults |
|--------|------------|------------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|-------|-----------|-----------|--------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 520 | Plant | Endangered plant | Vulnerable Occurrence | E/E | | - | | | | | | | | | | | | | - | - | - | - | - |
| 536 | Wetland | Vernal pool | Vulnerable Occurrence | | | - | | | | | | | | | | | | | - | - | - | - | - |
| 538 | Wetland | Swamp-pink | Vulnerable Occurrence | -/E | T | - | | | | | | | | | | | | | - | - | - | - | - |

REPTILES & AMPHIBIANS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Hatch | Internest | Juveniles | Adults |
|--------|------------|----------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|-------|-----------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 600 | Turtle | Wood turtle | Vulnerable Occurrence | C/T | | - | | | | | | | | | | | | | - | - | - | Mar-Nov | Mar-Nov |
| 608 | Turtle | Spotted turtle | Vulnerable Occurrence | C/C | | - | | | | | | | | | | | | | - | - | - | Mar-Nov | Mar-Nov |

INVERTEBRATES

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------|------------|-------------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| 663 | Insect | Myrina Fritillary | Vulnerable Occurrence | -/T | | - | J | F | M | A | M | J | J | A | S | O | N | D | May-Sep | May-Sep | Jan-Dec | - | May-Sep |

WIDESPREAD IN MAPPED AREA (> 10 SQUARE KILOMETERS)

HABITATS & RARE PLANTS

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|-------|------|--------|-----------|--------|
|  Plant | Rare plant | Vulnerable Occurrence | C/C | | - | J | F | M | A | M | J | J | A | S | O | N | D | - | - | - | - | - |

ALSO PRESENT IN MAPPED AREA (GENERAL DISTRIBUTION)

BIRDS

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|---|-----------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|---------|---------|------|
|  Waterfowl | Waterfowl | J | F | M | A | M | J | J | A | S | O | N | D | - | - | - | - |

FISH

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--|--------------|------------------|---|---|---|---|---|---|---|---|---|---|---|-------|------|--------|-----------|---------|
|  Diadromous | American eel | J | F | M | A | M | J | J | A | S | O | N | D | - | - | - | Jan-Dec | Sep-Nov |

INVERTEBRATES

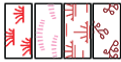
| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--|-----------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|------|--------|-----------|---------|
|  Crab | Blue crab | J | F | M | A | M | J | J | A | S | O | N | D | May-Oct | - | - | Jan-Dec | Jan-Dec |

For additional information about species locations and extent, reference the underlying GIS data available from response.restoration.noaa.gov

SHORELINE RESOURCES

ESI POLYGON HABITAT TYPES

| ESI Rank | Habitat Classification | Area (Acres) | Area (Sq. Miles) |
|----------|---------------------------------|--------------|------------------|
| 10A | Salt and Brackish Water Marshes | 2.89 | 0.00 |
| 10B | Freshwater Marshes | 33.24 | 0.05 |
| 10C | Swamps | 818.87 | 1.28 |
| 10D | Scrub and Shrub Wetlands | 122.05 | 0.19 |



ESI SHORELINE HABITAT TYPES

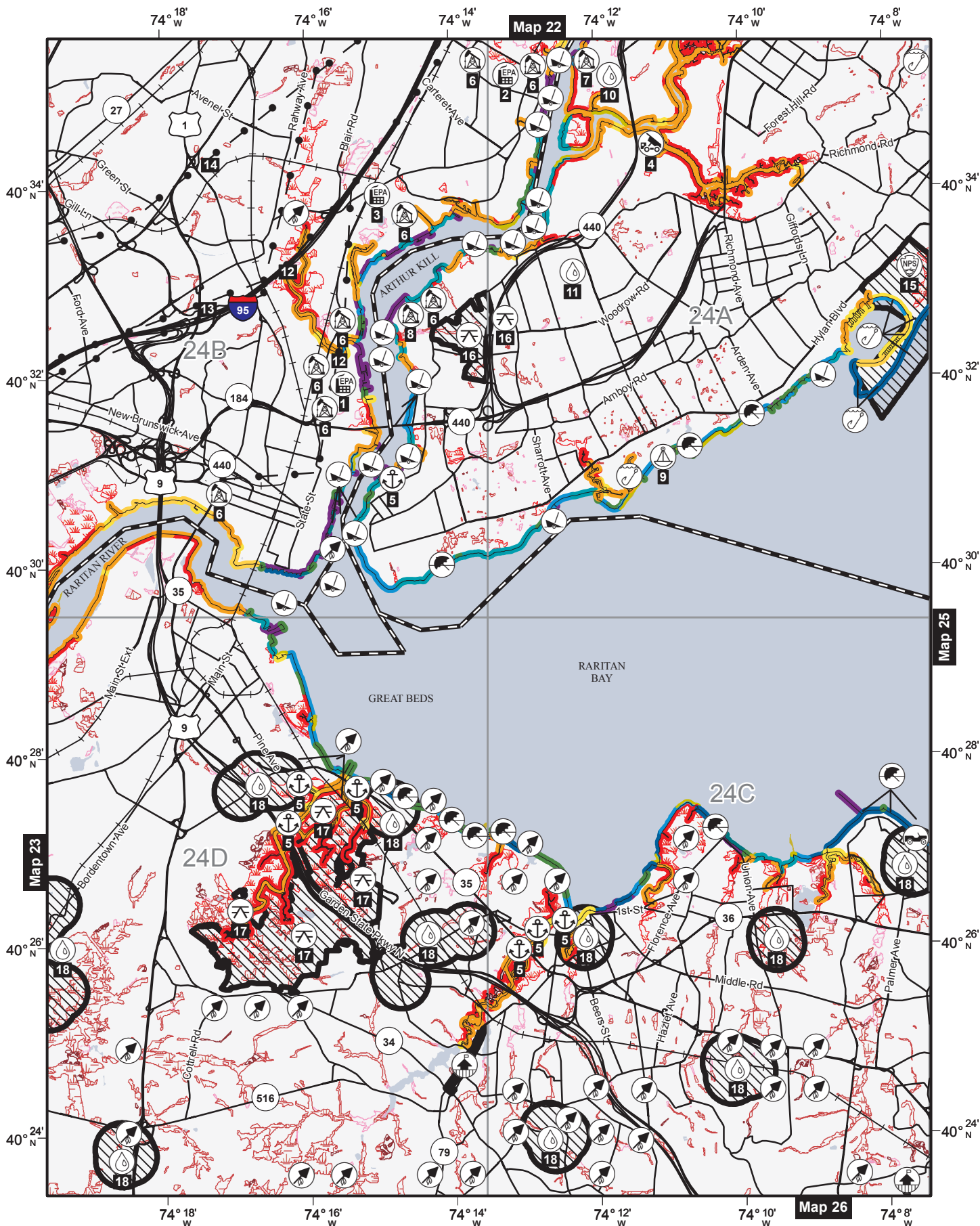
| ESI Rank | Shoreline Habitat Classification | Length (Meters) | Length (Miles) | % of ESI Shoreline |
|----------|--------------------------------------|-----------------|----------------|--------------------|
| 10A | Salt and Brackish Water Marshes | 204.71 | 0.13 | 1% |
| 10B | Freshwater Marshes | 1,814.61 | 1.13 | 6% |
| 10C | Swamps | 2,188.92 | 1.36 | 7% |
| 10D | Scrub and Shrub Wetlands | 842.52 | 0.52 | 3% |
| 9B | Vegetated Low Banks | 27,146.43 | 16.87 | 83% |
| 8B | Sheltered, Solid Man-Made Structures | 500.28 | 0.31 | 2% |
| 8C | Sheltered Riprap | 43.28 | 0.03 | < 1% |

Total ESI Shoreline: 32,740.74 Total ESI Shoreline: 20.34
Total Shoreline: 27,689.99 Total Shoreline: 17.21

Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov





Map 24

NY/ NJ Metropolitan Area



SEE BACK OF MAP
for details about mapped resources and
other resources that occur in mapped area.
Data Published: February 2016

0 Not for Navigation 2 Miles
0 2 Kilometers

1:100,000



Map 24
New York and New Jersey Metropolitan Area

HUMAN USE RESOURCES

| DISPLAYED ON MAP (POINTS) | | | |
|---------------------------|---------------------------|--------------------------------------|--------------|
| Map ID | Type | Name | Phone |
| 1 | EPA FACILITY | BUCKEYE PERTH AMBOY TERMINAL | 732-738-2037 |
| 2 | EPA FACILITY | KINDER MORGAN CARTERET FACILITY | 732-541-5161 |
| 3 | EPA FACILITY | PORT READING COMPLEX | 732-750-7861 |
| 4 | LANDFILL | NYCDOS/GSF FRESH KILLS GAS PLANT | 718-984-7733 |
| 5 | MARINA | MARINA | |
| 6 | OIL FACILITY | PETROLEUM PRODUCT TERMINAL | |
| 7 | OIL FACILITY | ARTHUR KILL POWER | |
| 8 | OIL FACILITY | KINDER MORGAN STATEN ISLAND TERMINAL | |
| 9 | REPEATED MEASUREMENT SITE | MUSSEL WATCH SITE - HRRB | 301-713-3028 |
| 10 | WATER INTAKE | ARTHUR KILL GENERATING STATION | |
| 11 | WATER INTAKE | SOUTH SHORE GOLF COURSE | |

| DISPLAYED ON MAP (LINES) | | | |
|--------------------------|----------|-----------------|-------|
| Map ID | Type | Name | Phone |
| 12 | PIPELINE | COLONIAL | |
| 13 | PIPELINE | HARBOR PIPELINE | |
| 14 | PIPELINE | BUCKEYE | |

| DISPLAYED ON MAP (POLYGONS) | | | |
|-----------------------------|---------------|------------------------------------|--------------|
| Map ID | Type | Name | Phone |
| 15 | NATIONAL PARK | GATEWAY NATIONAL RECREATION AREA | 713-354-4525 |
| 16 | STATE PARK | CLAY PIT PONDS STATE PARK PRESERVE | |
| 17 | STATE PARK | CHEESEQUAKE STATE PARK | |
| 18 | WATER INTAKE | WATER INTAKE AREA | |

| ALSO PRESENT IN MAPPED AREA (POLYGONS) | | | |
|--|-----------------------------|--|--------------|
| Type | Name | Contact | Phone |
| ESSENTIAL HABITAT | EFH AREA | CHRIS BRUCE | 434-951-0565 |
| ESSENTIAL HABITAT | IMPORTANT BIRD AREA | IMPORTANT BIRD AREAS PROGRAM COORDINATOR | 607-254-2437 |
| ESSENTIAL HABITAT | IMPORTANT BIRD AREA | GYLLA MACGREGOR | |
| ESSENTIAL HABITAT | SIGNIFICANT COASTAL HABITAT | NYS DEPARTMENT OF STATE COORDINATOR | 518-474-6000 |

JURISDICTIONS

| | | | |
|--------------|--|-------|-----------|
| COUNTY: | MIDDLESEX COUNTY, MONMOUTH COUNTY, RICHMOND COUNTY, UNION COUNTY | FEMA: | REGION II |
| COAST GUARD: | DISTRICT 1, SECTOR NEW YORK | EPA: | REGION 2 |
| USACE: | NORTH ATLANTIC DIVISION, NEW YORK DISTRICT | | |

SHORELINE RESOURCES

ESI POLYGON HABITAT TYPES

| ESI Rank | Habitat Classification | Area (Acres) | Area (Sq. Miles) |
|----------|---------------------------------|--------------|------------------|
| 10A | Salt and Brackish Water Marshes | 3,177.06 | 4.96 |
| 10B | Freshwater Marshes | 676.30 | 1.06 |
| 10C | Swamps | 2,809.74 | 4.39 |
| 10D | Scrub and Shrub Wetlands | 251.36 | 0.39 |
| 9A | Sheltered Tidal Flats | 37.73 | 0.06 |
| 7 | Exposed Tidal Flats | 81.86 | 0.13 |

ESI SHORELINE HABITAT TYPES

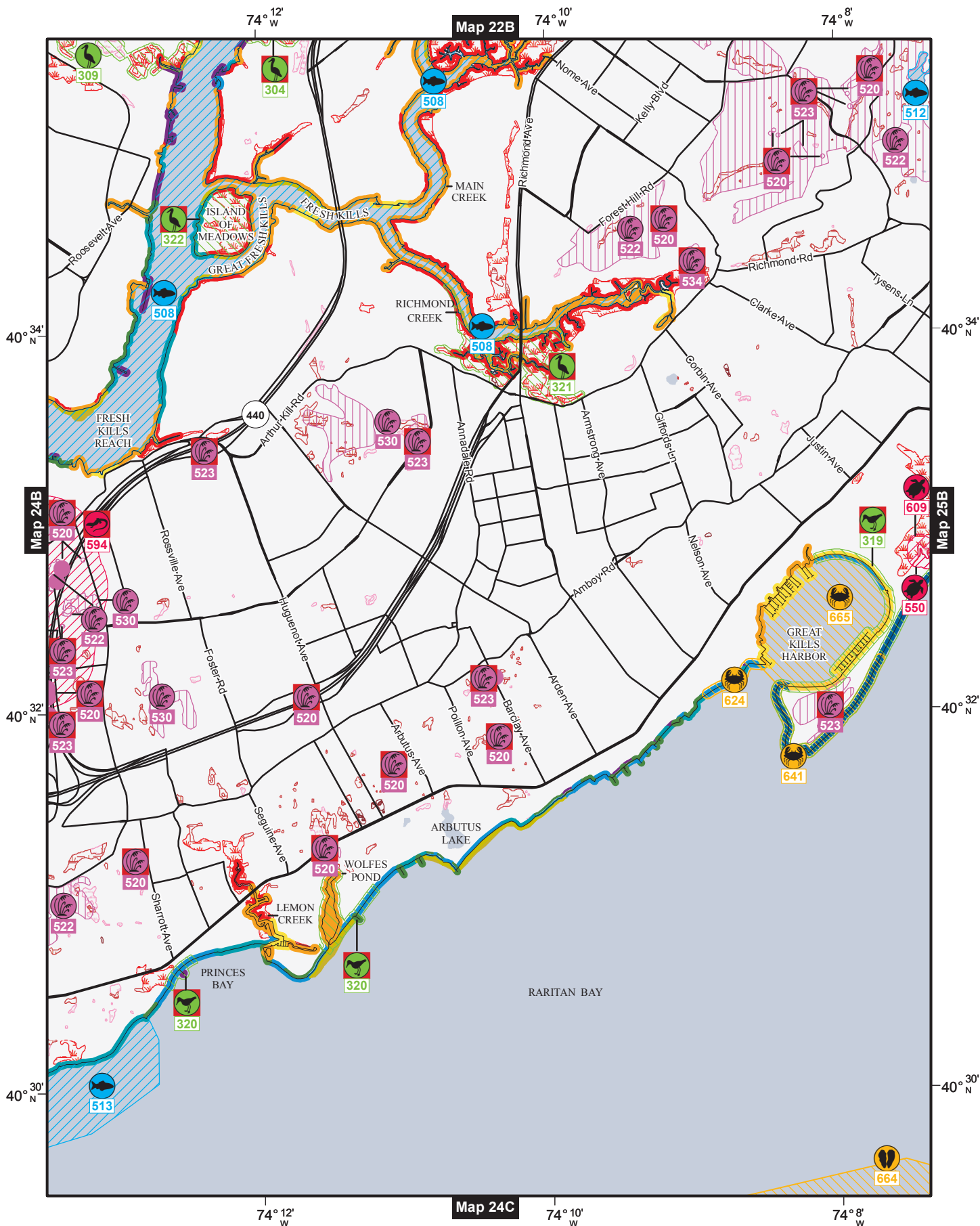
| ESI Rank | Shoreline Habitat Classification | Length (Meters) | Length (Miles) | % of ESI Shoreline |
|----------|--------------------------------------|-----------------|----------------|--------------------|
| 10A | Salt and Brackish Water Marshes | 101,003.34 | 62.76 | 28% |
| 10B | Freshwater Marshes | 367.80 | 0.23 | < 1% |
| 10C | Swamps | 385.38 | 0.24 | < 1% |
| 10D | Scrub and Shrub Wetlands | 343.70 | 0.21 | < 1% |
| 9A | Sheltered Tidal Flats | 5,808.26 | 3.61 | 2% |
| 9B | Vegetated Low Banks | 135,929.76 | 84.46 | 37% |
| 8B | Sheltered, Solid Man-Made Structures | 22,442.13 | 13.94 | 6% |
| 8C | Sheltered Riprap | 4,563.58 | 2.84 | 1% |
| 7 | Exposed Tidal Flats | 7,631.02 | 4.74 | 2% |
| 6B | Riprap | 14,529.39 | 9.03 | 4% |
| 5 | Mixed Sand and Gravel Beaches | 17,261.68 | 10.73 | 5% |
| 4 | Coarse Grained Sand Beaches | 18,063.06 | 11.22 | 5% |
| 3A | Fine to Medium Grained Sand Beaches | 11,737.97 | 7.29 | 3% |
| 1B | Exposed, Solid Man-Made Structures | 22,534.97 | 14.00 | 6% |

Total ESI Shoreline: 362,602.05
Total ESI Shoreline: 225.31
Total Shoreline: 229,567.94
Total Shoreline: 142.65

Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov





Map 24A

NY/ NJ Metropolitan Area



SEE BACK OF MAP
for details about mapped species and other
species that occur in the mapped area.
Data Published: February 2016

0 Not for Navigation 1 Miles
0 1 Kilometers

1:50,000



Map 24A
New York and New Jersey Metropolitan Area

BIOLOGICAL RESOURCES

Note: An asterisk (*) indicates that life stage occurs in this range but not in all months included

DISPLAYED ON MAP

BIRDS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--------|------------|------------------------|--------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 304 | Wading | BC night-heron | Concentration Area | -/T | | 2 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | 2 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 6 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | | 2 | | | | | | | | | | | | | - | - | - | - |
| | Wading | YC night-heron | Concentration Area | -/T | | 7 | | | | | | | | | | | | | - | - | - | - |
| 309 | Wading | Wading birds | Concentration Area | | | High | | | | | | | | | | | | | - | - | - | - |
| 319 | Shorebird | American oystercatcher | Migration | -/C | | 1S | | | | | | | | | | | | | - | Aug-Sep | | - |
| | Shorebird | Red knot | Migration | -/E | T | 1S | | | | | | | | | | | | | - | Apr-May | Jul-Sep | - |
| 320 | Shorebird | Semipalmated sandpiper | Migration | -/C | | 10S | | | | | | | | | | | | | - | Apr-May | Aug-Sep | - |
| 321 | Wading | BC night-heron | Concentration Area | -/T | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Glossy ibis | Concentration Area | -/C | | 3 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | 2 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 6 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Little blue heron | Concentration Area | -/C | | 1 | | | | | | | | | | | | | - | - | - | - |
| 322 | Wading | Snowy egret | Concentration Area | -/C | | 6 | | | | | | | | | | | | | - | - | - | - |
| | Wading | BC night-heron | Nesting | -/T | | - | | | | | | | | | | | | | Mar-Jul | - | - | - |
| | Wading | Cattle egret | Nesting | -/T | | - | | | | | | | | | | | | | Apr-Aug | - | - | - |
| | Wading | Glossy ibis | Nesting | -/C | | - | | | | | | | | | | | | | Apr-Aug | - | - | - |
| | Wading | Little blue heron | Nesting | -/C | | - | | | | | | | | | | | | | Apr-Aug | - | - | - |
| | Wading | Snowy egret | Nesting | -/C | | - | | | | | | | | | | | | | Apr-Aug | - | - | - |
| | Wading | YC night-heron | Nesting | -/T | | - | | | | | | | | | | | | | Apr-Aug | - | - | - |

FISH

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------|------------|------------------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 508 | Diadromous | Alewife | Nursery Area | | | - | | | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - |
| | Diadromous | Alewife | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |
| | Diadromous | American shad | Nursery Area | | | - | | | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - |
| | Diadromous | American shad | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |
| | Diadromous | Blueback herring | Nursery Area | | | - | | | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - |
| 512 | Diadromous | Blueback herring | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |
| | Freshwater | Bluegill | Harvest Area | | | - | | | | | | | | | | | | | Apr-Jun | Apr-Jun | Apr-Aug | Jan-Dec | Jan-Dec |
| | Freshwater | Chain pickerel | Harvest Area | | | - | | | | | | | | | | | | | Apr-Jun | Apr-Jun | Apr-Aug | Jan-Dec | Jan-Dec |
| | Freshwater | Largemouth bass | Harvest Area | | | - | | | | | | | | | | | | | Apr-Jun | Apr-Jun | Apr-Aug | Jan-Dec | Jan-Dec |
| | Freshwater | Pumpkinseed | Harvest Area | | | - | | | | | | | | | | | | | Apr-Jun | Apr-Jun | Apr-Aug | Jan-Dec | Jan-Dec |
| 513 | Diadromous | Alewife | Migration | | | - | | | | | | | | | | | | | - | - | - | - | Mar-Jun |
| | Diadromous | American shad | Migration | | | - | | | | | | | | | | | | | - | - | - | - | Mar-Jun |
| | Diadromous | Blueback herring | Migration | | | - | | | | | | | | | | | | | - | - | - | - | Mar-Jun |

HABITATS & RARE PLANTS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | |
|--------|------------|------------------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D |
| 520 | Plant | Endangered plant | Vulnerable Occurrence | E/E | - | - | | | | | | | | | | | | |
| 522 | Upland | Rare upland community | Vulnerable Occurrence | | - | - | | | | | | | | | | | | |
| 523 | Plant | Threatened plant | Vulnerable Occurrence | T/- | - | - | | | | | | | | | | | | |
| 530 | Wetland | Rare wetland community | Vulnerable Occurrence | | - | - | | | | | | | | | | | | |
| 534 | Plant | Threatened plant | Vulnerable Occurrence | T/- | - | - | | | | | | | | | | | | |
| | Upland | Rare upland community | Vulnerable Occurrence | | - | - | | | | | | | | | | | | |

REPTILES & AMPHIBIANS


| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Hatch | Internest | Juveniles | Adults |
|--------|------------|------------------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---------|----------|------|---------|-----------|-----------|--------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 550 | Turtle | Common snapping turtle | Nesting | | - | - | | | | | | | | | | | Jun-Jul | Apr-Nov* | - | - | Jun-Jul | | |
| 594 | Reptile | Threatened reptile 3 | Vulnerable Occurrence | T/- | - | - | | | | | | | | | | | Apr-Aug | Jun-Sep | - | Jan-Dec | Jan-Dec | | |
| 609 | Turtle | Painted turtle | Nesting | | - | - | | | | | | | | | | | Jun-Jul | Aug-Sep | - | - | Jun-Jul | | |

INVERTEBRATES

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------|------------|-----------------|--------------------|---|----------|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|---------|-----------|--------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 624 | Crab | Horseshoe crab | Spawning Area | | - | - | | | | | | | | | | | | May-Jun | May-Jul | - | - | May-Jun | |
| 641 | Crab | Horseshoe crab | Spawning Area | | High | High | | | | | | | | | | | | May-Jun | May-Jul | - | - | May-Jun | |
| 664 | Bivalve | Northern quahog | Concentration Area | | Historic | Historic | | | | | | | | | | | | Jun-Sep | Jun-Sep | Jun-Sep | Jan-Dec | Jan-Dec | |
| | Bivalve | Softshell clam | Concentration Area | | Historic | Historic | | | | | | | | | | | | May-Oct | May-Oct | May-Oct | Jan-Dec | Jan-Dec | |
| 665 | Crab | Blue crab | Spawning Area | | High | High | | | | | | | | | | | | - | Jun-Oct | - | - | - | |

WIDESPREAD IN MAPPED AREA (> 10 SQUARE KILOMETERS)


BIRDS

| <div></div> | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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FISH

|  | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|------------|-------------------|----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|-------|------|---------|-----------|--------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| | Diadromous | Atlantic sturgeon | General Distribution | -/E | E | Rare | | | | | | | | | | | | | - | - | Jan-Dec | Jan-Dec | |

REPTILES & AMPHIBIANS



| Subelement | Species | Mapping Qualifier | S | | F | | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Hatch | Internest | Juveniles | Adults | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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|  | Green sea turtle | General Distribution | | | | | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | </ |

MARINE MAMMALS

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Mating | Calving | Pupping | Molt | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | Humpback whale | General Distribution | E/E | E | Common | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | </ |



ALSO PRESENT IN MAPPED AREA (GENERAL DISTRIBUTION)

FISH




| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|-------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|----------|----------|----------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Diadromous | | | | | | | | | | | | | - | - | - | Jan-Dec | Feb-Jun |
| | Alewife | | | | | | | | | | | | | - | - | Jun-Jul | Apr-Nov | Mar-Jun |
| | Alewife | | | | | | | | | | | | | - | - | - | Jan-Dec | Sep-Nov |
| | American eel | | | | | | | | | | | | | - | - | Apr-Aug | Jan-Dec | Sep-Nov |
| | American eel | | | | | | | | | | | | | - | - | - | Jan-Dec | Sep-Nov |
| | American shad | | | | | | | | | | | | | - | - | - | Apr-Jun | Apr-May |
| | American shad | | | | | | | | | | | | | - | - | - | Jan-Dec | Apr-Aug |
| | Blueback herring | | | | | | | | | | | | | - | - | May-Jun | May-Nov | Mar-Jul |
| | Blueback herring | | | | | | | | | | | | | - | - | - | May-Nov | Mar-Jul |
| | Striped bass | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
|  | Atlantic croaker | | | | | | | | | | | | | - | - | Sep-Nov | Jul-Nov | Jul-Nov |
| | Atlantic herring | | | | | | | | | | | | | - | - | Apr-May | Jan-May | Jan-May |
| | Atlantic menhaden | | | | | | | | | | | | | May-Oct* | May-Oct* | May-Oct* | Apr-Nov | Apr-Nov |
| | Atlantic menhaden | | | | | | | | | | | | | - | - | Apr-Jul | Apr-Nov | May-Nov |
| | Bay anchovy | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jul-Dec | May-Nov |
| | Bay anchovy | | | | | | | | | | | | | May-Aug | May-Aug | Jun-Sep | Jul-Mar | Jan-Dec |
| | Black drum | | | | | | | | | | | | | - | - | - | Jul-Nov | Jul-Nov |
| | Black sea bass | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov |
| | Bluefish | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Northern kingfish | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | Northern kingfish | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Northern puffer | | | | | | | | | | | | | May-Aug | Jun-Oct | Jun-Oct | May-Oct | May-Oct |
| | Scup | | | | | | | | | | | | | Jul | Jul | Jul | Jun-Oct | Jun-Oct |
| | Scup | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Spot | | | | | | | | | | | | | - | - | - | Jun-Nov | Jun-Nov |
| | Summer flounder | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Weakfish | | | | | | | | | | | | | Jun-Aug | Jun-Aug | Jun-Aug | Jun-Nov | May-Dec |
| | White perch | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | White perch | | | | | | | | | | | | | May-Jun | May-Jun | May-Jun | Jan-Dec | Jan-Dec |
| | Windowpane | | | | | | | | | | | | | Apr-Jul | Apr-Jul | Apr-Oct | Jan-Dec | Jan-Dec |

New York and New Jersey Metropolitan Area: Map 24A


FISH (continued)

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|---------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|----------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Winduppane | | | | | | | | | | | | | - | - | Apr-Nov | Jan-Dec | Jan-Dec |
| | Winter flounder | | | | | | | | | | | | | Nov-Apr | Nov-Apr | Nov-May | Jan-Dec | Oct-Jun |
| | Killifish | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | Northern pipefish | | | | | | | | | | | | | May-Jul | - | May-Aug | Apr-Dec | Jan-Dec |
|  | Silversides | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | American sand lance | | | | | | | | | | | | | Nov-Apr | Nov-Apr | Nov-Apr | Nov-Apr | Nov-Apr |
| | Atlantic cod | | | | | | | | | | | | | - | - | - | Nov-Apr | - |
| | Atlantic tomcod | | | | | | | | | | | | | Dec-Feb | Dec-Mar | Jan-Aug | Jan-Dec | Jan-Dec |
| | Atlantic tomcod | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Pollock | | | | | | | | | | | | | - | - | - | Mar-Jun | - |
| | Red hake | | | | | | | | | | | | | - | - | - | Nov-May | Nov-May |
| | Smooth dogfish | | | | | | | | | | | | | May-Jun | May-Oct | - | Apr-Oct | Apr-Oct |
| | Tautog | | | | | | | | | | | | | - | Jun | Jun | Apr-Dec | Apr-Nov |
| | Tautog | | | | | | | | | | | | | May | May | May | Jan-Dec | Apr-Nov |
| | Atlantic mackerel | | | | | | | | | | | | | - | - | - | Apr-Nov* | Apr-Nov* |
| | Butterfish | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov |

INVERTEBRATES

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Blue mussel | | | | | | | | | | | | | Apr-Nov | Apr-Nov | Apr-Nov | Jan-Dec | Jan-Dec |
| | Northern quahog | | | | | | | | | | | | | Jun-Sep | Jun-Sep | Jun-Sep | Jan-Dec | Jan-Dec |
| | Softshell clam | | | | | | | | | | | | | May-Oct | May-Oct | May-Oct | Jan-Dec | Jan-Dec |
|  | Blue crab | | | | | | | | | | | | | May-Oct | - | - | Jan-Dec | Jan-Dec |
| | Blue crab | | | | | | | | | | | | | May-Oct | Jun-Oct | Jun-Oct | Jan-Dec | Jan-Dec |
| | Horseshoe crab | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
|  | American lobster | | | | | | | | | | | | | Jun-Sep | Jun-Sep | Jun-Oct | Jan-Dec | Jan-Dec |

MARINE MAMMALS

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Mating | Calving | Pupping | Molt |
|---|--------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|--------|---------|---------|------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Bottlenose dolphin | | | | | | | | | | | | | - | - | - | - |
| | Harbor porpoise | | | | | | | | | | | | | - | - | - | - |

For additional information about species locations and extent, reference the underlying GIS data available from response.restoration.noaa.gov

SHORELINE RESOURCES

ESI POLYGON HABITAT TYPES

| ESI Rank | Habitat Classification | Area (Acres) | Area (Sq. Miles) |
|----------|---------------------------------|--------------|------------------|
| 10A | Salt and Brackish Water Marshes | 527.69 | 0.82 |
| 10B | Freshwater Marshes | 72.43 | 0.11 |
| 10C | Swamps | 179.02 | 0.28 |
| 10D | Scrub and Shrub Wetlands | 7.21 | 0.01 |
| 9A | Sheltered Tidal Flats | 20.27 | 0.03 |
| 7 | Exposed Tidal Flats | 45.17 | 0.07 |

ESI SHORELINE HABITAT TYPES

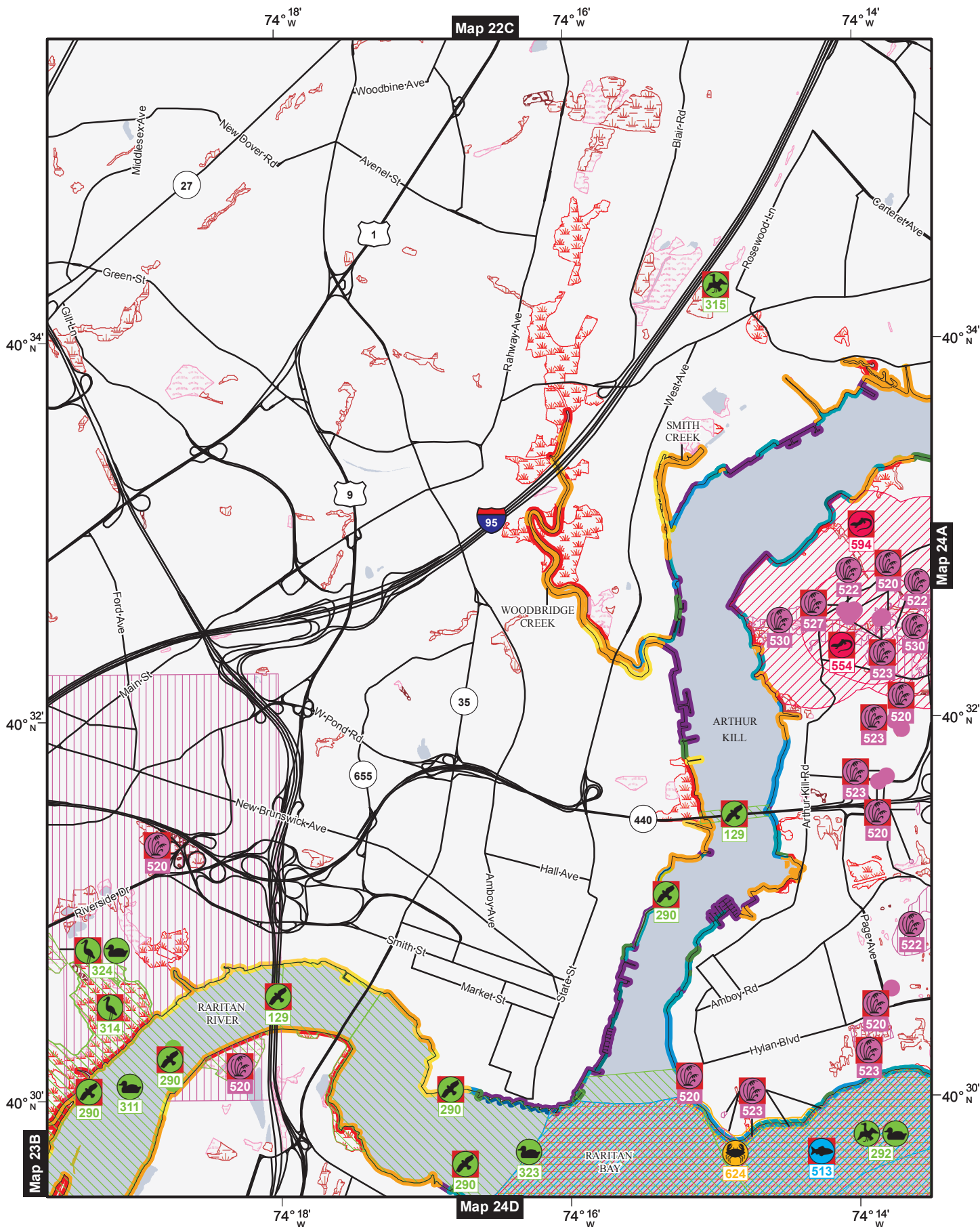
| ESI Rank | Shoreline Habitat Classification | Length (Meters) | Length (Miles) | % of ESI Shoreline |
|----------|--------------------------------------|-----------------|----------------|--------------------|
| 10A | Salt and Brackish Water Marshes | 33,754.51 | 20.97 | 26% |
| 10D | Scrub and Shrub Wetlands | 224.89 | 0.14 | < 1% |
| 9A | Sheltered Tidal Flats | 2,686.70 | 1.67 | 2% |
| 9B | Vegetated Low Banks | 48,563.67 | 30.18 | 38% |
| 8B | Sheltered, Solid Man-Made Structures | 9,061.02 | 5.63 | 7% |
| 8C | Sheltered Riprap | 1,061.33 | 0.66 | 1% |
| 7 | Exposed Tidal Flats | 4,976.34 | 3.09 | 4% |
| 6B | Riprap | 5,045.00 | 3.13 | 4% |
| 5 | Mixed Sand and Gravel Beaches | 8,437.19 | 5.24 | 7% |
| 4 | Coarse Grained Sand Beaches | 6,855.63 | 4.26 | 5% |
| 3A | Fine to Medium Grained Sand Beaches | 3,151.34 | 1.96 | 2% |
| 1B | Exposed, Solid Man-Made Structures | 4,012.18 | 2.49 | 3% |

Total ESI Shoreline: 127,829.81 Total ESI Shoreline: 79.43
 Total Shoreline: 79,389.74 Total Shoreline: 49.33

Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov

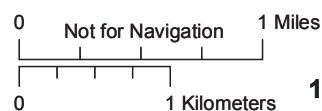




Map 24B
NY/ NJ Metropolitan Area



SEE BACK OF MAP
 for details about mapped species and other
 species that occur in the mapped area.
 Data Published: February 2016



1:50,000



Map 24B
New York and New Jersey Metropolitan Area

BIOLOGICAL RESOURCES

Note: An asterisk (*) indicates that life stage occurs in this range but not in all months included

DISPLAYED ON MAP

BIRDS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--------|------------|----------------------|--------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 129 | Raptor | Endangered raptor 1 | Nesting | E/E | | 1 Pair | | | | | | | | | | | | | Mar-Jul | - | - | - |
| 290 | Raptor | Threatened raptor | Nesting | -/T | | 1 Pair | | | | | | | | | | | | | Apr-Jul | - | - | - |
| 292 | Diving | D. crested cormorant | Wintering | | | High | | | | | | | | | | | | | - | - | - | - |
| | Diving | Great cormorant | Wintering | | | High | | | | | | | | | | | | | - | - | - | - |
| | Diving | Horned grebe | Migration | | | High | | | | | | | | | | | | | - | - | Oct-Nov | - |
| | Diving | Red-throated loon | Migration | | | High | | | | | | | | | | | | | - | - | Oct-Nov | - |
| | Waterfowl | Waterfowl | Wintering | | | High | | | | | | | | | | | | | - | - | - | - |
| 311 | Waterfowl | Canada goose | Wintering | | | 10000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Waterfowl | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| 314 | Wading | BC night-heron | Concentration Area | -/T | | 3 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Glossy ibis | Concentration Area | -/C | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | 15 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 92 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Green heron | Concentration Area | | | 6 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Little blue heron | Concentration Area | -/C | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | | 53 | | | | | | | | | | | | | - | - | - | - |
| | Wading | YC night-heron | Concentration Area | -/T | | 1 | | | | | | | | | | | | | - | - | - | - |
| 315 | Diving | Pied-billed grebe | Nesting | T/E | | 1 Pair | | | | | | | | | | | | | Mar-Jun | - | - | - |
| 323 | Waterfowl | American black duck | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Brant | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Bufflehead | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Canada goose | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Long-tailed duck | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Mallard | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Scaup | Wintering | | | 10000S | | | | | | | | | | | | | - | - | - | - |
| 324 | Wading | BC night-heron | Concentration Area | -/T | | 3 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Glossy ibis | Concentration Area | -/C | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | 15 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 92 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Green heron | Concentration Area | | | 6 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Little blue heron | Concentration Area | -/C | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | | 53 | | | | | | | | | | | | | - | - | - | - |
| | Wading | YC night-heron | Concentration Area | -/T | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Canada goose | Wintering | | | 10000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Waterfowl | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |

FISH

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Eggs | Larvae | Juveniles | Adults |
|--------|------------|-------------------|----------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|--------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 415 | Diadromous | Atlantic sturgeon | General Distribution | - | E | Rare | | | | | | | | | | | | | - | - | Jan-Dec | Jan-Dec |
| 513 | Diadromous | Alewife | Migration | | | - | | | | | | | | | | | | | - | - | Mar-Jun | Mar-Jun |
| | Diadromous | American shad | Migration | | | - | | | | | | | | | | | | | - | - | Mar-Jun | Mar-Jun |
| | Diadromous | Blueback herring | Migration | | | - | | | | | | | | | | | | | - | - | Mar-Jun | Mar-Jun |

HABITATS & RARE PLANTS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Eggs | Larvae | Juveniles | Adults |
|--------|------------|------------------------|-----------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|--------|-----------|--------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 520 | Plant | Endangered plant | Vulnerable Occurrence | E | E | - | | | | | | | | | | | | | - | - | - | - |
| 522 | Upland | Rare upland community | Vulnerable Occurrence | | | - | | | | | | | | | | | | | - | - | - | - |
| 523 | Plant | Threatened plant | Vulnerable Occurrence | T | - | - | | | | | | | | | | | | | - | - | - | - |
| 527 | Plant | Endangered plant | Vulnerable Occurrence | E | E | - | | | | | | | | | | | | | - | - | - | - |
| | Plant | Threatened plant | Vulnerable Occurrence | T | - | - | | | | | | | | | | | | | - | - | - | - |
| 530 | Wetland | Rare wetland community | Vulnerable Occurrence | | | - | | | | | | | | | | | | | - | - | - | - |

REPTILES & AMPHIBIANS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Hatch | Internest | Juveniles | Adults |
|--------|------------|------------------------|-----------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|-----------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 554 | Reptile | Endangered reptile 1 | Vulnerable Occurrence | E | - | - | | | | | | | | | | | | | - | - | - | Apr-Nov |
| 560 | Turtle | Green sea turtle | General Distribution | T | T | - | | | | | | | | | | | | | - | - | May-Nov | May-Nov |
| | Turtle | K. ridley sea turtle | General Distribution | E | E | - | | | | | | | | | | | | | - | - | May-Nov | - |
| | Turtle | Leatherback sea turtle | General Distribution | E | E | - | | | | | | | | | | | | | - | - | May-Nov | May-Nov |
| | Turtle | Loggerhead sea turtle | General Distribution | T | E | - | | | | | | | | | | | | | - | - | May-Nov | May-Nov |
| 594 | Reptile | Threatened reptile 3 | Vulnerable Occurrence | T | - | - | | | | | | | | | | | | | Apr-Aug | Jun-Sep | Jan-Dec | Jan-Dec |


INVERTEBRATES

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Eggs | Larvae | Juveniles | Adults |
|--------|------------|----------------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|--------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 624 | Crab | Horseshoe crab | Spawning Area | | | - | | | | | | | | | | | | | May-Jun | - | - | May-Jun |

MARINE MAMMALS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Calving | Pupping | Molt |
|--------|------------|----------------|----------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | |
| 687 | Whale | Humpback whale | General Distribution | E | E | Common | | | | | | | | | | | | | - | - | - |

FISH


| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|------------------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Alewife | Nursery Area | | | - | | | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - |
| | Alewife | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |
| | American shad | Nursery Area | | | - | | | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - |
| | American shad | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |
| | Blueback herring | Nursery Area | | | - | | | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - |
| | Blueback herring | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |

ALSO PRESENT IN MAPPED AREA (GENERAL DISTRIBUTION)

BIRDS




| Subelement | Species | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|---|-----------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|---------|---------|------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Waterfowl | | | | | | | | | | | | | - | - | - | - |

FISH

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|-------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|----------|----------|----------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Alewife | | | | | | | | | | | | | - | - | - | Jan-Dec | Feb-Jun |
| | Alewife | | | | | | | | | | | | | - | - | Jun-Jul | Apr-Nov | Mar-Jun |
| | American eel | | | | | | | | | | | | | - | - | - | Jan-Dec | Sep-Nov |
| | American eel | | | | | | | | | | | | | - | - | Apr-Aug | Jan-Dec | Sep-Nov |
| | American shad | | | | | | | | | | | | | - | - | - | Apr-Jun | Apr-May |
| | American shad | | | | | | | | | | | | | - | - | - | Jan-Dec | Apr-Aug |
| | Blueback herring | | | | | | | | | | | | | - | - | - | May-Nov | Mar-Jul |
| | Blueback herring | | | | | | | | | | | | | - | - | May-Jun | May-Nov | Mar-Jul |
| | Striped bass | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Striped bass | | | | | | | | | | | | | - | - | Sep-Nov | Jul-Nov | Jul-Nov |
| Estuarine Nursery | Atlantic croaker | | | | | | | | | | | | | - | - | Apr-May | Jan-May | Jan-May |
| | Atlantic herring | | | | | | | | | | | | | - | - | Apr-Jul | Apr-Nov | May-Nov |
| | Atlantic menhaden | | | | | | | | | | | | | May-Oct* | May-Oct* | May-Oct* | Apr-Nov | Apr-Nov |
| | Atlantic menhaden | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jul-Dec | May-Nov |
| | Bay anchovy | | | | | | | | | | | | | May-Aug | May-Aug | Jun-Sep | Jul-Mar | Jan-Dec |
| | Bay anchovy | | | | | | | | | | | | | - | - | - | Jul-Nov | Jul-Nov |
| | Black drum | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov |
| | Black sea bass | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Bluefish | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | Bluefish | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Northern kingfish | | | | | | | | | | | | | May-Aug | Jun-Oct | Jun-Oct | May-Oct | May-Oct |
| | Northern kingfish | | | | | | | | | | | | | Jul | Jul | Jul | Jun-Oct | Jun-Oct |
| | Northern puffer | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Northern puffer | | | | | | | | | | | | | - | - | - | Jun-Nov | Jun-Nov |
| | Scup | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Scup | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Spot | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Spot | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Summer flounder | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Summer flounder | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |

New York and New Jersey Metropolitan Area: Map 24B

FISH (continued)

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|---------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|----------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| | Weakfish | | | | | | | | | | | | | Jun-Aug | Jun-Aug | Jun-Aug | Jun-Nov | May-Dec |
| | White perch | | | | | | | | | | | | | May-Jun | May-Jun | May-Jun | Jan-Dec | Jan-Dec |
| | White perch | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Windowpane | | | | | | | | | | | | | - | - | Apr-Nov | Jan-Dec | Jan-Dec |
| | Winter flounder | | | | | | | | | | | | | Apr-Jul | Apr-Jul | Apr-Oct | Jan-Dec | Jan-Dec |
|  | Killifish | | | | | | | | | | | | | Nov-Apr | Nov-Apr | Nov-May | Jan-Dec | Oct-Jun |
| | Northern pipefish | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | Killifish | | | | | | | | | | | | | May-Jul | - | May-Aug | Apr-Dec | Apr-Dec |
|  | Silversides | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | American sand lance | | | | | | | | | | | | | Nov-Apr | Nov-Apr | Nov-Apr | Nov-Apr | Nov-Apr |
| | Atlantic cod | | | | | | | | | | | | | - | - | - | Nov-Apr | - |
| | Atlantic tomcod | | | | | | | | | | | | | Dec-Feb | Dec-Mar | Jan-Aug | Jan-Dec | Jan-Dec |
| | Atlantic tomcod | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
|  | Pollock | | | | | | | | | | | | | - | - | - | Mar-Jun | - |
| | Red hake | | | | | | | | | | | | | - | - | - | Nov-May | Nov-May |
| | Smooth dogfish | | | | | | | | | | | | | May-Jun | May-Oct | - | Apr-Oct | Apr-Oct |
| | Tautog | | | | | | | | | | | | | May | May | May | Jan-Dec | Apr-Nov |
| | Tautog | | | | | | | | | | | | | - | Jun | Jun | Apr-Dec | Apr-Nov |
| | Atlantic mackerel | | | | | | | | | | | | | - | - | - | Apr-Nov* | Apr-Nov* |
| | Butterfish | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov |

INVERTEBRATES

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Blue mussel | | | | | | | | | | | | | Apr-Nov | Apr-Nov | Apr-Nov | Jan-Dec | Jan-Dec |
| | Northern quahog | | | | | | | | | | | | | Jun-Sep | Jun-Sep | Jun-Sep | Jan-Dec | Jan-Dec |
|  | Softshell clam | | | | | | | | | | | | | May-Oct | May-Oct | May-Oct | Jan-Dec | Jan-Dec |
| | Blue crab | | | | | | | | | | | | | May-Oct | - | - | Jan-Dec | Jan-Dec |
|  | Blue crab | | | | | | | | | | | | | May-Oct | Jun-Oct | Jun-Oct | Jan-Dec | Jan-Dec |
| | Horseshoe crab | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | American lobster | | | | | | | | | | | | | Jun-Sep | Jun-Sep | Jun-Oct | Jan-Dec | Jan-Dec |

MARINE MAMMALS

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Mating | Calving | Pupping | Molt |
|---|--------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|--------|---------|---------|------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Bottlenose dolphin | | | | | | | | | | | | | - | - | - | - |
| | Harbor porpoise | | | | | | | | | | | | | - | - | - | - |

For additional information about species locations and extent, reference the underlying GIS data available from response.restoration.noaa.gov

SHORELINE RESOURCES

ESI POLYGON HABITAT TYPES

| ESI Rank | Habitat Classification | Area (Acres) | Area (Sq. Miles) |
|----------|---------------------------------|--------------|------------------|
| 10A | Salt and Brackish Water Marshes | 567.93 | 0.89 |
| 10B | Freshwater Marshes | 285.99 | 0.45 |
| 10C | Swamps | 367.19 | 0.57 |
| 10D | Scrub and Shrub Wetlands | 22.59 | 0.04 |
| 9A | Sheltered Tidal Flats | 12.71 | 0.02 |
| 7 | Exposed Tidal Flats | 5.86 | 0.01 |

ESI SHORELINE HABITAT TYPES

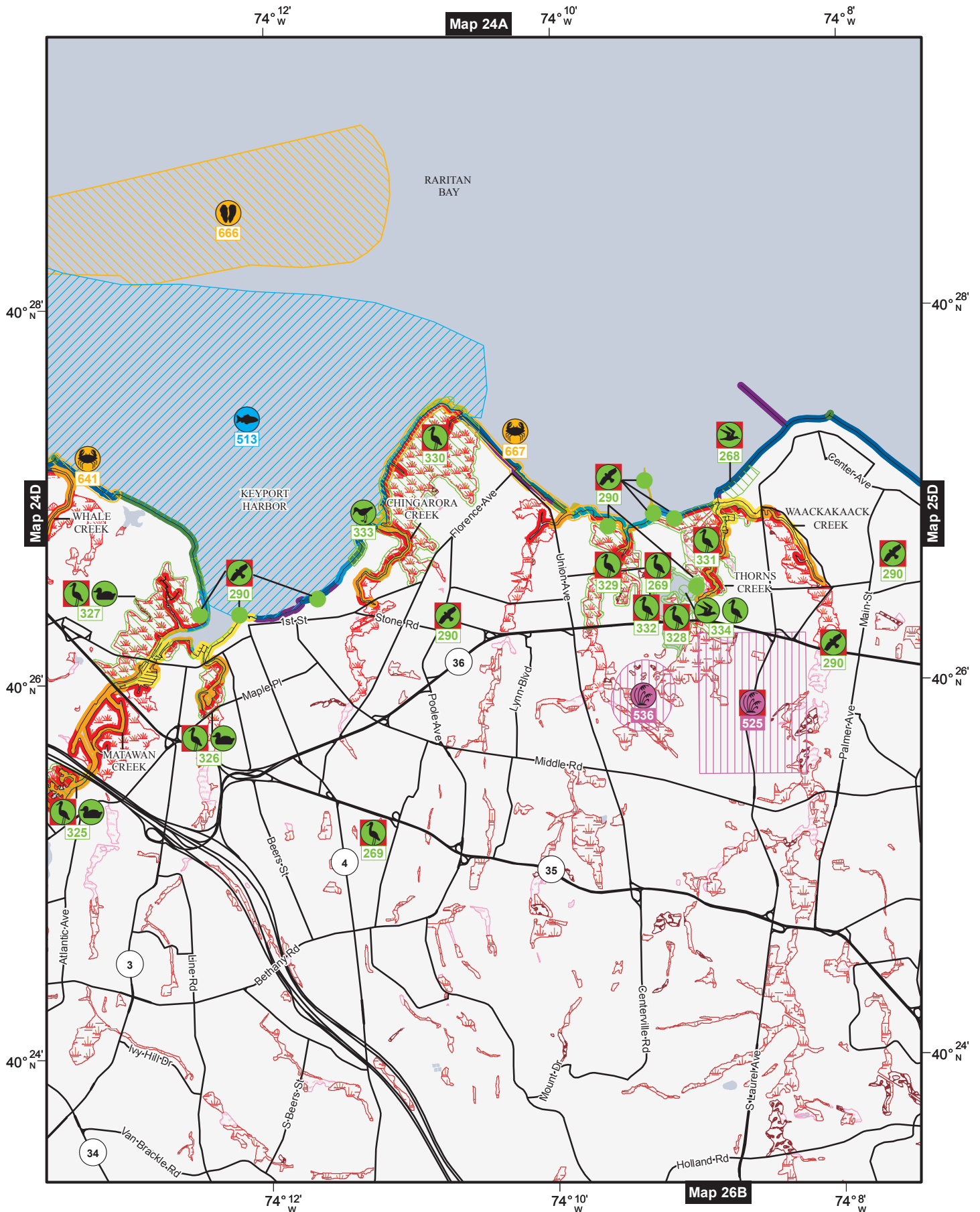
| ESI Rank | Shoreline Habitat Classification | Length (Meters) | Length (Miles) | % of ESI Shoreline |
|----------|--------------------------------------|-----------------|----------------|--------------------|
| 10A | Salt and Brackish Water Marshes | 13,035.02 | 8.10 | 16% |
| 10B | Freshwater Marshes | 289.58 | 0.18 | < 1% |
| 10C | Swamps | 310.72 | 0.19 | < 1% |
| 9A | Sheltered Tidal Flats | 2,573.02 | 1.60 | 3% |
| 9B | Vegetated Low Banks | 28,386.59 | 17.64 | 34% |
| 8B | Sheltered, Solid Man-Made Structures | 5,047.55 | 3.14 | 6% |
| 8C | Sheltered Riprap | 3,069.02 | 1.91 | 4% |
| 7 | Exposed Tidal Flats | 425.78 | 0.26 | 1% |
| 6B | Riprap | 3,335.66 | 2.07 | 4% |
| 5 | Mixed Sand and Gravel Beaches | 6,778.07 | 4.21 | 8% |
| 4 | Coarse Grained Sand Beaches | 5,064.88 | 3.15 | 6% |
| 3A | Fine to Medium Grained Sand Beaches | 1,029.84 | 0.64 | 1% |
| 1B | Exposed, Solid Man-Made Structures | 14,460.48 | 8.99 | 17% |

Total ESI Shoreline: 83,806.23 Total ESI Shoreline: 52.07
 Total Shoreline: 60,271.30 Total Shoreline: 37.45

Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov

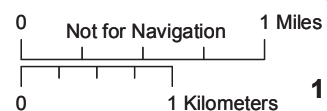




Map 24C
NY/ NJ Metropolitan Area



SEE BACK OF MAP
 for details about mapped species and other
 species that occur in the mapped area.
 Data Published: February 2016



1:50,000



Map 24C
New York and New Jersey Metropolitan Area

BIOLOGICAL RESOURCES

Note: An asterisk (*) indicates that life stage occurs in this range but not in all months included

DISPLAYED ON MAP

BIRDS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--------|------------|------------------------|--------------------|-----|--------|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 268 | Gull/Tern | Least tern | Nesting | T/E | - | - | | | | | | | | | | | | | May-Sep | - | - | - |
| 269 | Wading | YC night-heron | Nesting | -/T | - | - | | | | | | | | | | | | | Apr-Aug | - | - | - |
| 290 | Raptor | Threatened raptor | Nesting | -/T | 1 Pair | - | | | | | | | | | | | | | Apr-Jul | - | - | - |
| 325 | Wading | BC night-heron | Concentration Area | -/T | 2 | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | 10 | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | -/C | 27 | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | 19 | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | YC night-heron | Concentration Area | -/T | 3 | - | | | | | | | | | | | | | - | - | - | - |
| 326 | Waterfowl | Red-breasted merganser | Wintering | -/T | 100S | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | BC night-heron | Concentration Area | -/T | 3 | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | 3 | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | -/C | 16 | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | Green heron | Concentration Area | -/C | 1 | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | Little blue heron | Concentration Area | -/C | 1 | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | 9 | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | Tricolored heron | Concentration Area | -/C | 2 | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | YC night-heron | Concentration Area | -/T | 5 | - | | | | | | | | | | | | | - | - | - | - |
| 327 | Waterfowl | Red-breasted merganser | Wintering | -/T | 100S | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | BC night-heron | Concentration Area | -/T | 2 | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | 3 | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | -/C | 23 | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | Green heron | Concentration Area | -/C | 1 | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | 4 | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | Tricolored heron | Concentration Area | -/C | 2 | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | YC night-heron | Concentration Area | -/T | 5 | - | | | | | | | | | | | | | - | - | - | - |
| 328 | Waterfowl | Red-breasted merganser | Wintering | -/T | 100S | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | BC night-heron | Concentration Area | -/T | 2 | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | 3 | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | -/C | 16 | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | Green heron | Concentration Area | -/C | 1 | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | Little blue heron | Concentration Area | -/C | 1 | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | 2 | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | YC night-heron | Concentration Area | -/T | 1 | - | | | | | | | | | | | | | - | - | - | - |
| 329 | Wading | BC night-heron | Concentration Area | -/T | 6 | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | Glossy ibis | Concentration Area | -/C | 4 | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | 3 | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | -/C | 7 | - | | | | | | | | | | | | | - | - | - | - |

BIRDS (continued)

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--------|------------|---------------------|--------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| | Wading | Green heron | Concentration Area | | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | | 4 | | | | | | | | | | | | | - | - | - | - |
| 330 | Wading | YC night-heron | Concentration Area | -/T | | 4 | | | | | | | | | | | | | - | - | - | - |
| | Wading | BC night-heron | Concentration Area | -/T | | 3 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | 6 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 17 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Green heron | Concentration Area | | | 3 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | | 28 | | | | | | | | | | | | | - | - | - | - |
| 331 | Wading | YC night-heron | Concentration Area | -/T | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | BC night-heron | Concentration Area | -/T | | 5 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | 2 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 6 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Green heron | Concentration Area | | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Little blue heron | Concentration Area | -/C | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | YC night-heron | Concentration Area | -/T | | 2 | | | | | | | | | | | | | - | - | - | - |
| 332 | Wading | BC night-heron | Nesting | -/T | | - | | | | | | | | | | | | Mar-Jul | - | - | - | - |
| 333 | Shorebird | Shorebirds | Migration | | | High | | | | | | | | | | | | | Mar-May | Aug-Oct | - | - |
| 334 | Bird | Colonial waterbirds | Roosting | | | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Roosting | | | 50 | | | | | | | | | | | | | - | - | - | - |

FISH

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------|------------|------------------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|-------|------|--------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 513 | Diadromous | Alewife | Migration | | | - | | | | | | | | | | | | | - | - | - | - | Mar-Jun |
| | Diadromous | American shad | Migration | | | - | | | | | | | | | | | | | - | - | - | - | Mar-Jun |
| | Diadromous | Blueback herring | Migration | | | - | | | | | | | | | | | | | - | - | - | - | Mar-Jun |



HABITATS & RARE PLANTS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | | | |
|--------|------------|-------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | |
| 525 | Plant | Rare plant | Vulnerable Occurrence | C/C | | - | | | | | | | | | | | | | - | - | - |
| 536 | Wetland | Vernal pool | Vulnerable Occurrence | | | - | | | | | | | | | | | | | - | - | - |

INVERTEBRATES

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------|------------|----------------|--------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 641 | Crab | Horseshoe crab | Spawning Area | | | High | | | | | | | | | | | | | May-Jun | May-Jul | - | - | May-Jun |
| 666 | Bivalve | Blue mussel | Concentration Area | | | Historic | | | | | | | | | | | | | Apr-Sep | Apr-Sep | Apr-Sep | Jan-Dec | Jan-Dec |
| 667 | Crab | Horseshoe crab | Spawning Area | | | Low | | | | | | | | | | | | | May-Jun | May-Jul | - | - | May-Jun |


BIRDS

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|---|-----------|----------------------|-----------|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|---------|---------|------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Diving | D. crested cormorant | Wintering | | High | | | | | | | | | | | | | - | - | - | - |
| | | Great cormorant | Wintering | | High | | | | | | | | | | | | | - | - | - | - |
| | | Horned grebe | Migration | | High | | | | | | | | | | | | | - | Oct-Nov | - | - |
| | | Red-throated loon | Migration | | High | | | | | | | | | | | | | - | Oct-Nov | - | - |
|  | Waterfowl | American black duck | Wintering | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | | Brant | Wintering | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | | Bufflehead | Wintering | | 100S | | | | | | | | | | | | | - | - | - | - |
| | | Canada goose | Wintering | | 100S | | | | | | | | | | | | | - | - | - | - |
| | | Long-tailed duck | Wintering | | 100S | | | | | | | | | | | | | - | - | - | - |
| | | Mallard | Wintering | | 100S | | | | | | | | | | | | | - | - | - | - |
| | | Scaup | Wintering | | 10000S | | | | | | | | | | | | | - | - | - | - |
| | | Waterfowl | Wintering | | High | | | | | | | | | | | | | - | - | - | - |

FISH

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|------------|-------------------|----------------------|-----|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|-------|------|--------|-----------|---------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Diadromous | Atlantic sturgeon | General Distribution | -/E | Rare | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |

REPTILES & AMPHIBIANS

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Hatch | Internest | Juveniles | Adults |
|---|---------|------------------------|----------------------|-----|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|-------|-----------|-----------|---------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Turtle | Green sea turtle | General Distribution | T/T | - | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | | K. ridley sea turtle | General Distribution | E/E | - | | | | | | | | | | | | | - | - | - | May-Nov | - |
| | | Leatherback sea turtle | General Distribution | E/E | - | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | | Loggerhead sea turtle | General Distribution | T/E | - | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |

INVERTEBRATES

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|---------|-------------------|--------------------|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Bivalve | Northern quahog | Concentration Area | | Historic | | | | | | | | | | | | | Jun-Sep | Jun-Sep | Jun-Sep | Jan-Dec | Jan-Dec |
| | | Softshell clam | Concentration Area | | Historic | | | | | | | | | | | | | May-Oct | May-Oct | May-Oct | Jan-Dec | Jan-Dec |

MARINE MAMMALS

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Mating | Calving | Pupping | Molt |
|---|---------|-------------------|----------------------|-----|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|--------|---------|---------|------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Whale | Humpback whale | General Distribution | E/E | Common | | | | | | | | | | | | | - | - | - | - |






BIRDS

Monthly Presence




| Subelement | Species | J | F | M | A | M | J | J | A | S | O | N | D | Nest | Mig.(S) | Mig.(F) | Molt |
|---|-----------|---|---|---|---|---|---|---|---|---|---|---|---|------|---------|---------|------|
|  Waterfowl | Waterfowl | | | | | | | | | | | | | - | - | - | - |

FISH


Monthly Presence

| Subelement | Species | J | F | M | A | M | J | J | A | S | O | N | D | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|---------------------|---|---|---|---|---|---|---|---|---|---|---|---|----------|----------|----------|-----------|----------|
|  | Alewife | | | | | | | | | | | | | - | - | - | Jan-Dec | Feb-Jun |
| | American eel | | | | | | | | | | | | | - | - | Apr-Aug | Jan-Dec | Sep-Nov |
| | American eel | | | | | | | | | | | | | - | - | - | Jan-Dec | Sep-Nov |
| | American shad | | | | | | | | | | | | | - | - | - | Apr-Jun | Apr-May |
| | Blueback herring | | | | | | | | | | | | | - | - | - | May-Nov | Mar-Jul |
|  | Striped bass | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Atlantic croaker | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Atlantic herring | | | | | | | | | | | | | - | - | Sep-Nov | Jul-Nov | Jul-Nov |
| | Atlantic menhaden | | | | | | | | | | | | | - | - | Apr-May | Jan-May | Jan-May |
| | Bay anchovy | | | | | | | | | | | | | May-Oct* | May-Oct* | May-Oct* | Apr-Nov | Apr-Nov |
| | Black drum | | | | | | | | | | | | | May-Aug | May-Aug | Jun-Sep | Jul-Mar | Jan-Dec |
| | Black sea bass | | | | | | | | | | | | | - | - | - | Jul-Nov | Jul-Nov |
| | Bluefish | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov |
| | Northern kingfish | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Northern puffer | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
|  | Scup | | | | | | | | | | | | | May-Aug | Jun-Oct | Jun-Oct | May-Oct | May-Oct |
| | Spot | | | | | | | | | | | | | Jul | Jul | Jul | Jun-Oct | Jun-Oct |
| | Summer flounder | | | | | | | | | | | | | - | - | - | Jun-Nov | Jun-Nov |
| | Weakfish | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | White perch | | | | | | | | | | | | | Jun-Aug | Jun-Aug | Jun-Aug | Jun-Nov | May-Dec |
| | Windowpane | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Winter flounder | | | | | | | | | | | | | Apr-Jul | Apr-Jul | Apr-Oct | Jan-Dec | Jan-Dec |
| | Killifish | | | | | | | | | | | | | Nov-Apr | Nov-Apr | Nov-May | Jan-Dec | Oct-Jun |
| | Northern pipefish | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | Silversides | | | | | | | | | | | | | May-Jul | - | May-Aug | Apr-Dec | Apr-Dec |
|  | American sand lance | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | Atlantic cod | | | | | | | | | | | | | Nov-Apr | Nov-Apr | Nov-Apr | Nov-Apr | Nov-Apr |
| | Atlantic tomcod | | | | | | | | | | | | | - | - | - | Nov-Apr | - |
| | Pollock | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Red hake | | | | | | | | | | | | | - | - | - | Mar-Jun | - |
|  | Smooth dogfish | | | | | | | | | | | | | - | - | - | Nov-May | Nov-May |
| | Tautog | | | | | | | | | | | | | May-Jun | May-Oct | - | Apr-Oct | Apr-Oct |
| | Atlantic mackerel | | | | | | | | | | | | | May | May | May | Jan-Dec | Apr-Nov |
| | Butterfish | | | | | | | | | | | | | - | - | - | Apr-Nov* | Apr-Nov* |
| | Butterfish | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov |

INVERTEBRATES

| | Subelement | Species | Monthly Presence | | | | | | | | | | | | Eggs | Larvae | Juveniles | Adults |
|---|------------|------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|-----------|---------|
| | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Bivalve | Blue mussel | | | | | | | | | | | | | Apr-Nov | Apr-Nov | Jan-Dec | Jan-Dec |
| | | Northern quahog | | | | | | | | | | | | | Jun-Sep | Jun-Sep | Jan-Dec | Jan-Dec |
|  | Crab | Softshell clam | | | | | | | | | | | | | May-Oct | May-Oct | Jan-Dec | Jan-Dec |
| | | Blue crab | | | | | | | | | | | | | May-Oct | Jun-Oct | Jan-Dec | Jan-Dec |
| | | Blue crab | | | | | | | | | | | | | May-Oct | - | Jan-Dec | Jan-Dec |
|  | Lobster | Horseshoe crab | | | | | | | | | | | | - | - | Jan-Dec | Jan-Dec | |
| | | American lobster | | | | | | | | | | | | | Jun-Sep | Jun-Oct | Jan-Dec | Jan-Dec |

MARINE MAMMALS

| <div></div> Subelement | Species | Monthly Presence | | | | | | | | | | | | Mating | Calving | Pupping | Molt |
|--|--------------------|-------------------------|---|---|---|---|---|---|---|---|---|---|---|--------|---------|---------|------|
| | | J F M A M J J A S O N D | | | | | | | | | | | | | | | |
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| | Bottlenose dolphin | | | | | | | | | | | | | | | | - |
| | Harbor porpoise | | | | | | | | | | | | | | | | - |

For additional information about species locations and extent, reference the underlying GIS data available from response.restoration.noaa.gov

SHORELINE RESOURCES

ESI POLYGON HABITAT TYPES

| ESI Rank | Habitat Classification | Area (Acres) | Area (Sq. Miles) |
|----------|---------------------------------|--------------|------------------|
| 10A | Salt and Brackish Water Marshes | 702.20 | 1.10 |
| 10B | Freshwater Marshes | 144.01 | 0.23 |
| 10C | Swamps | 694.41 | 1.09 |
| 10D | Scrub and Shrub Wetlands | 72.12 | 0.11 |
| 7 | Exposed Tidal Flats | 11.28 | 0.02 |

ESI SHORELINE HABITAT TYPES

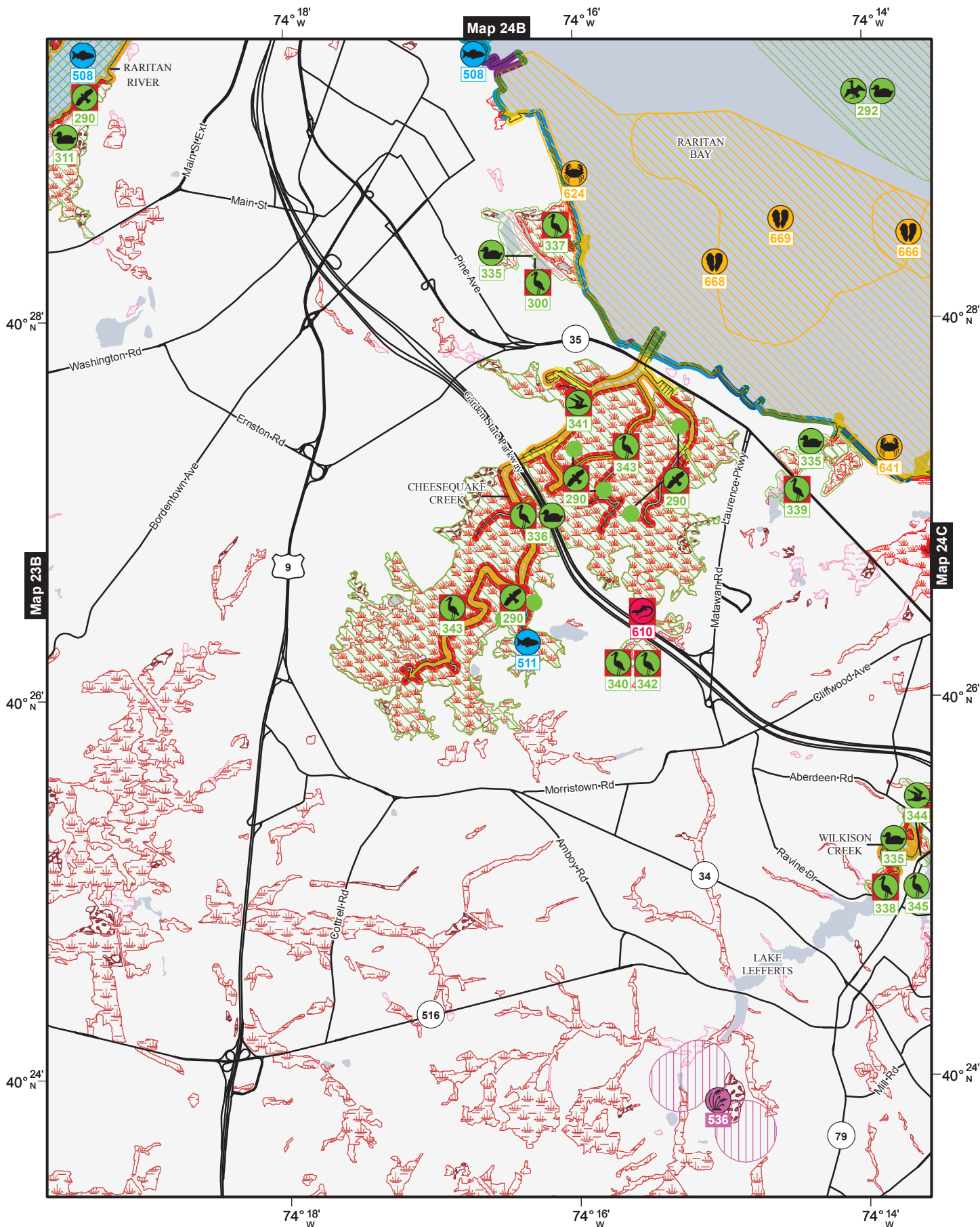
| ESI Rank | Shoreline Habitat Classification | Length (Meters) | Length (Miles) | % of ESI Shoreline |
|----------|--------------------------------------|-----------------|----------------|--------------------|
| 10A | Salt and Brackish Water Marshes | 23,982.53 | 14.90 | 33% |
| 10B | Freshwater Marshes | 78.22 | 0.05 | < 1% |
| 10D | Scrub and Shrub Wetlands | 49.73 | 0.03 | < 1% |
| 9B | Vegetated Low Banks | 26,457.06 | 16.44 | 37% |
| 8B | Sheltered, Solid Man-Made Structures | 5,472.43 | 3.40 | 8% |
| 8C | Sheltered Riprap | 256.48 | 0.16 | < 1% |
| 7 | Exposed Tidal Flats | 889.58 | 0.55 | 1% |
| 6B | Riprap | 2,494.23 | 1.55 | 3% |
| 5 | Mixed Sand and Gravel Beaches | 1,245.51 | 0.77 | 2% |
| 4 | Coarse Grained Sand Beaches | 2,400.13 | 1.49 | 3% |
| 3A | Fine to Medium Grained Sand Beaches | 6,117.66 | 3.80 | 8% |
| 1B | Exposed, Solid Man-Made Structures | 2,605.52 | 1.62 | 4% |

Total ESI Shoreline: 72,049.07 Total ESI Shoreline: 44.77
 Total Shoreline: 44,713.26 Total Shoreline: 27.78

Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov

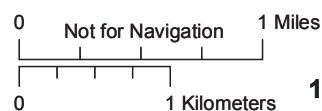




Map 24D
NY/ NJ Metropolitan Area



SEE BACK OF MAP
 for details about mapped species and other
 species that occur in the mapped area.
 Data Published: February 2016



1:50,000

Map 24D
New York and New Jersey Metropolitan Area

BIOLOGICAL RESOURCES

Note: An asterisk (*) indicates that life stage occurs in this range but not in all months included

DISPLAYED ON MAP

BIRDS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--------|------------|------------------------|--------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 290 | Raptor | Threatened raptor | Nesting | -/T | | 1 Pair | | | | | | | | | | | | | Apr-Jul | - | - | - |
| 292 | Diving | D. crested cormorant | Wintering | | | High | | | | | | | | | | | | | - | - | - | - |
| | Diving | Great cormorant | Wintering | | | High | | | | | | | | | | | | | - | - | - | - |
| | Diving | Horned grebe | Migration | | | High | | | | | | | | | | | | | - | - | Oct-Nov | - |
| | Diving | Red-throated loon | Migration | | | High | | | | | | | | | | | | | - | - | Oct-Nov | - |
| 300 | Waterfowl | Waterfowl | Wintering | | | High | | | | | | | | | | | | | - | - | - | - |
| | Wading | Least bittern | Nesting | T/C | | - | | | | | | | | | | | | Apr-Sep | - | - | - | - |
| 311 | Waterfowl | Canada goose | Wintering | | | 10000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Waterfowl | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| 335 | Waterfowl | Red-breasted merganser | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| 336 | Wading | BC night-heron | Concentration Area | -/T | | 7 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | 7 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 39 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Green heron | Concentration Area | | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Little blue heron | Concentration Area | -/C | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | YC night-heron | Concentration Area | -/T | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Red-breasted merganser | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| 337 | Wading | BC night-heron | Concentration Area | -/T | | 8 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | 3 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 28 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Green heron | Concentration Area | | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Little blue heron | Concentration Area | -/C | | 3 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | | 11 | | | | | | | | | | | | | - | - | - | - |
| 338 | Wading | BC night-heron | Concentration Area | -/T | | 2 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | 10 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 27 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | | 19 | | | | | | | | | | | | | - | - | - | - |
| 339 | Wading | YC night-heron | Concentration Area | -/T | | 3 | | | | | | | | | | | | | - | - | - | - |
| | Wading | BC night-heron | Concentration Area | -/T | | 3 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Glossy ibis | Concentration Area | -/C | | 17 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | 7 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 30 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Little blue heron | Concentration Area | -/C | | 2 | | | | | | | | | | | | | - | - | - | - |
| 340 | Wading | Snowy egret | Concentration Area | -/C | | 14 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 28 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Green heron | Concentration Area | | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Little blue heron | Concentration Area | -/C | | 1 | | | | | | | | | | | | | - | - | - | - |

BIRDS (continued)

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--------|------------|---------------------|--------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| | Wading | YC night-heron | Concentration Area | -/T | | 1 | | | | | | | | | | | | | - | - | - | - |
| 341 | Wading | Glossy ibis | Concentration Area | -/C | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Roosting | | | 73 | | | | | | | | | | | | | - | - | - | - |
| 342 | Wading | BC night-heron | Concentration Area | -/T | | 6 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | 6 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | | 5 | | | | | | | | | | | | | - | - | - | - |
| 343 | Wading | Snowy egret | Concentration Area | -/C | | 6 | | | | | | | | | | | | | - | - | - | - |
| 344 | Bird | Colonial waterbirds | Roosting | | | - | | | | | | | | | | | | | - | - | - | - |
| 345 | Wading | Great egret | Roosting | | | 83 | | | | | | | | | | | | | - | - | - | - |

FISH

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 508 | Diadromous | Alewife | Nursery Area | - | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

HABITATS & RARE PLANTS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | | | | | |
|--------|------------|-------------|-----------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 536 | Wetland | Vernal pool | Vulnerable Occurrence | | | - | J | F | M | A | M | J | J | A | S | O | N | D | - | - | - | - | - |


REPTILES & AMPHIBIANS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Hatch | Internest | Juveniles | Adults |
|--------|------------|-----------------------|-------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|-----------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 610 | Amphibian | Pine Barrens treefrog | Nesting | -/T | | - | | | | | | | | | | | | | May-Jun | May-Jul | - | - | May-Jun |


INVERTEBRATES

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------|------------|-----------------|--------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 624 | Crab | Horseshoe crab | Spawning Area | | | - | | | | | | | | | | | | | May-Jun | May-Jul | - | - | May-Jun |
| 641 | Crab | Horseshoe crab | Spawning Area | | | High | | | | | | | | | | | | | May-Jun | May-Jul | - | - | May-Jun |
| 666 | Bivalve | Blue mussel | Concentration Area | | | Historic | | | | | | | | | | | | | Apr-Sep | Apr-Sep | Apr-Sep | Jan-Dec | Jan-Dec |
| 668 | Bivalve | Northern quahog | Concentration Area | | | Historic | | | | | | | | | | | | | Jun-Sep | Jun-Sep | Jun-Sep | Jan-Dec | Jan-Dec |
| 669 | Bivalve | Softshell clam | Concentration Area | | | Historic | | | | | | | | | | | | | May-Oct | May-Oct | May-Oct | Jan-Dec | Jan-Dec |

BIRDS

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Eggs | Larvae | Juveniles | Molt |
|---|-----------|---------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|------|--------|-----------|------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Waterfowl | American black duck | | | 1000S | | | | | | | | | | | | | - | - | - | - | - |
| | | Brant | | | 1000S | | | | | | | | | | | | | - | - | - | - | - |
| | | Bufflehead | | | 100S | | | | | | | | | | | | | - | - | - | - | - |
| | | Canada goose | | | 100S | | | | | | | | | | | | | - | - | - | - | - |
| | | Long-tailed duck | | | 100S | | | | | | | | | | | | | - | - | - | - | - |
| | | Mallard | | | 100S | | | | | | | | | | | | | - | - | - | - | - |
| | Scaup | Wintering | | | 10000S | | | | | | | | | | | | | - | - | - | - | - |


FISH

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|------------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|-------|------|--------|-----------|---------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Diadromous | Alewife | | | - | | | | | | | | | | | | | - | - | - | - | Mar-Jun |
| | | American shad | | | - | | | | | | | | | | | | | - | - | - | - | Mar-Jun |
| | | Atlantic sturgeon | | | Rare | | | | | | | | | | | | | - | - | - | - | Jan-Dec |
| | | Blueback herring | | | - | | | | | | | | | | | | | - | - | - | - | Mar-Jun |

HABITATS & RARE PLANTS

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Eggs | Larvae | Juveniles | Adults |
|---|------------------|-----------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|------|--------|-----------|--------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Endangered plant | Vulnerable Occurrence | | | - | | | | | | | | | | | | | - | - | - | - | - |
| | Rare plant | Vulnerable Occurrence | | | - | | | | | | | | | | | | | - | - | - | - | - |

REPTILES & AMPHIBIANS

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Hatch | Internest | Juveniles | Adults |
|--|---------|------------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|-------|-----------|-----------|---------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Turtle | Green sea turtle | | | - | | | | | | | | | | | | | - | - | - | - | May-Nov |
| | | K. ridley sea turtle | | | - | | | | | | | | | | | | | - | - | - | - | May-Nov |
| | | Leatherback sea turtle | | | - | | | | | | | | | | | | | - | - | - | - | May-Nov |
| | | Loggerhead sea turtle | | | - | | | | | | | | | | | | | - | - | - | - | May-Nov |

MARINE MAMMALS






| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Mating | Calving | Pupping | Molt |
|---|---------|----------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|--------|---------|---------|------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Whale | Humpback whale | | | Common | | | | | | | | | | | | | - | - | - | - |
| | | General Distribution | | | Common | | | | | | | | | | | | | - | - | - | - |

ALSO PRESENT IN MAPPED AREA (GENERAL DISTRIBUTION)

BIRDS

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|---|-----------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|---------|---------|------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  Waterfowl | Waterfowl | | | | | | | | | | | | | - | - | - | - |

FISH

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|---------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|-------|------|---------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Alewife | | | | | | | | | | | | | - | - | - | Jan-Dec | Feb-Jun |
| | Alewife | | | | | | | | | | | | | - | - | Jun-Jul | Apr-Nov | Mar-Jun |
| | American eel | | | | | | | | | | | | | - | - | - | Jan-Dec | Sep-Nov |
| | American eel | | | | | | | | | | | | | - | - | Apr-Aug | Jan-Dec | Sep-Nov |
| | American shad | | | | | | | | | | | | | - | - | - | Apr-Jun | Apr-May |
| | American shad | | | | | | | | | | | | | - | - | - | Jan-Dec | Apr-Aug |
| | Blueback herring | | | | | | | | | | | | | - | - | - | May-Nov | Mar-Jul |
| | Blueback herring | | | | | | | | | | | | | - | - | May-Jun | May-Nov | Mar-Jul |
| | Striped bass | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Striped bass | | | | | | | | | | | | | - | - | - | Jul-Nov | Jul-Nov |
|  | Atlantic croaker | | | | | | | | | | | | | - | - | - | Jan-May | Jan-May |
| | Atlantic croaker | | | | | | | | | | | | | - | - | - | Apr-May | Jan-May |
| | Atlantic herring | | | | | | | | | | | | | - | - | - | Apr-Jul | May-Nov |
| | Atlantic menhaden | | | | | | | | | | | | | - | - | - | May-Oct* | Apr-Nov |
| | Atlantic menhaden | | | | | | | | | | | | | - | - | - | May-Oct* | Apr-Nov |
| | Bay anchovy | | | | | | | | | | | | | - | - | - | Jul-Dec | May-Nov |
| | Bay anchovy | | | | | | | | | | | | | - | - | - | Jul-Mar | Jan-Dec |
| | Black drum | | | | | | | | | | | | | - | - | - | Jul-Nov | Jul-Nov |
| | Black sea bass | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov |
| | Bluefish | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
|  | Northern kingfish | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | Northern kingfish | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Northern puffer | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Northern puffer | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Scup | | | | | | | | | | | | | - | - | - | Jun-Nov | Jun-Nov |
| | Scup | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Spot | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Spot | | | | | | | | | | | | | - | - | - | Jun-Nov | Jun-Nov |
| | Summer flounder | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Weakfish | | | | | | | | | | | | | - | - | - | Jun-Nov | Jun-Nov |
|  | White perch | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | White perch | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Windowpane | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Windowpane | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Winter flounder | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Killifish | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Northern pipefish | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Silversides | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | American sand lance | | | | | | | | | | | | | - | - | - | Nov-Apr | Nov-Apr |
| | Atlantic cod | | | | | | | | | | | | | - | - | - | Nov-Apr | Nov-Apr |
|  | Atlantic tomcod | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Atlantic tomcod | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |

FISH (continued)

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Eggs | Larvae | Juveniles | Adults |
|------------|-------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|--------|-----------|----------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| | Atlantic tomcod | | | | | | | | | | | | | - | - | Jan-Dec | Jan-Dec |
| | Pollock | | | | | | | | | | | | | - | - | Mar-Jun | - |
| | Red hake | | | | | | | | | | | | | - | - | Nov-May | Nov-May |
| | Smooth dogfish | | | | | | | | | | | | | May-Oct | - | Apr-Oct | Apr-Oct |
| | Tautog | | | | | | | | | | | | | May | May | Jan-Dec | Apr-Nov |
| | Tautog | | | | | | | | | | | | | Jun | Jun | Apr-Dec | Apr-Nov |
| | Atlantic mackerel | | | | | | | | | | | | | - | - | Apr-Nov* | Apr-Nov* |
| | Butterfish | | | | | | | | | | | | | - | - | Apr-Nov | Apr-Nov |

INVERTEBRATES

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Eggs | Larvae | Juveniles | Adults |
|------------|------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| | Blue mussel | | | | | | | | | | | | | Apr-Nov | Apr-Nov | Jan-Dec | Jan-Dec |
| | Northern quahog | | | | | | | | | | | | | Jun-Sep | Jun-Sep | Jan-Dec | Jan-Dec |
| | Softshell clam | | | | | | | | | | | | | May-Oct | May-Oct | Jan-Dec | Jan-Dec |
| | Blue crab | | | | | | | | | | | | | May-Oct | - | Jan-Dec | Jan-Dec |
| | Blue crab | | | | | | | | | | | | | May-Oct | Jun-Oct | Jan-Dec | Jan-Dec |
| | Horseshoe crab | | | | | | | | | | | | | - | - | Jan-Dec | Jan-Dec |
| | American lobster | | | | | | | | | | | | | Jun-Sep | Jun-Oct | Jan-Dec | Jan-Dec |

MARINE MAMMALS

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Mating | Calving | Pupping | Molt |
|------------|--------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|--------|---------|---------|------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| | Bottlenose dolphin | | | | | | | | | | | | | - | - | - | - |
| | Harbor porpoise | | | | | | | | | | | | | - | - | - | - |

For additional information about species locations and extent, reference the underlying GIS data available from response.restoration.noaa.gov

SHORELINE RESOURCES

ESI POLYGON HABITAT TYPES

| ESI Rank | Habitat Classification | Area (Acres) | Area (Sq. Miles) |
|----------|---------------------------------|--------------|------------------|
| 10A | Salt and Brackish Water Marshes | 1,380.54 | 2.16 |
| 10B | Freshwater Marshes | 174.09 | 0.27 |
| 10C | Swamps | 1,568.21 | 2.45 |
| 10D | Scrub and Shrub Wetlands | 149.44 | 0.23 |
| 9A | Sheltered Tidal Flats | 4.75 | 0.01 |
| 7 | Exposed Tidal Flats | 19.57 | 0.03 |

ESI SHORELINE HABITAT TYPES

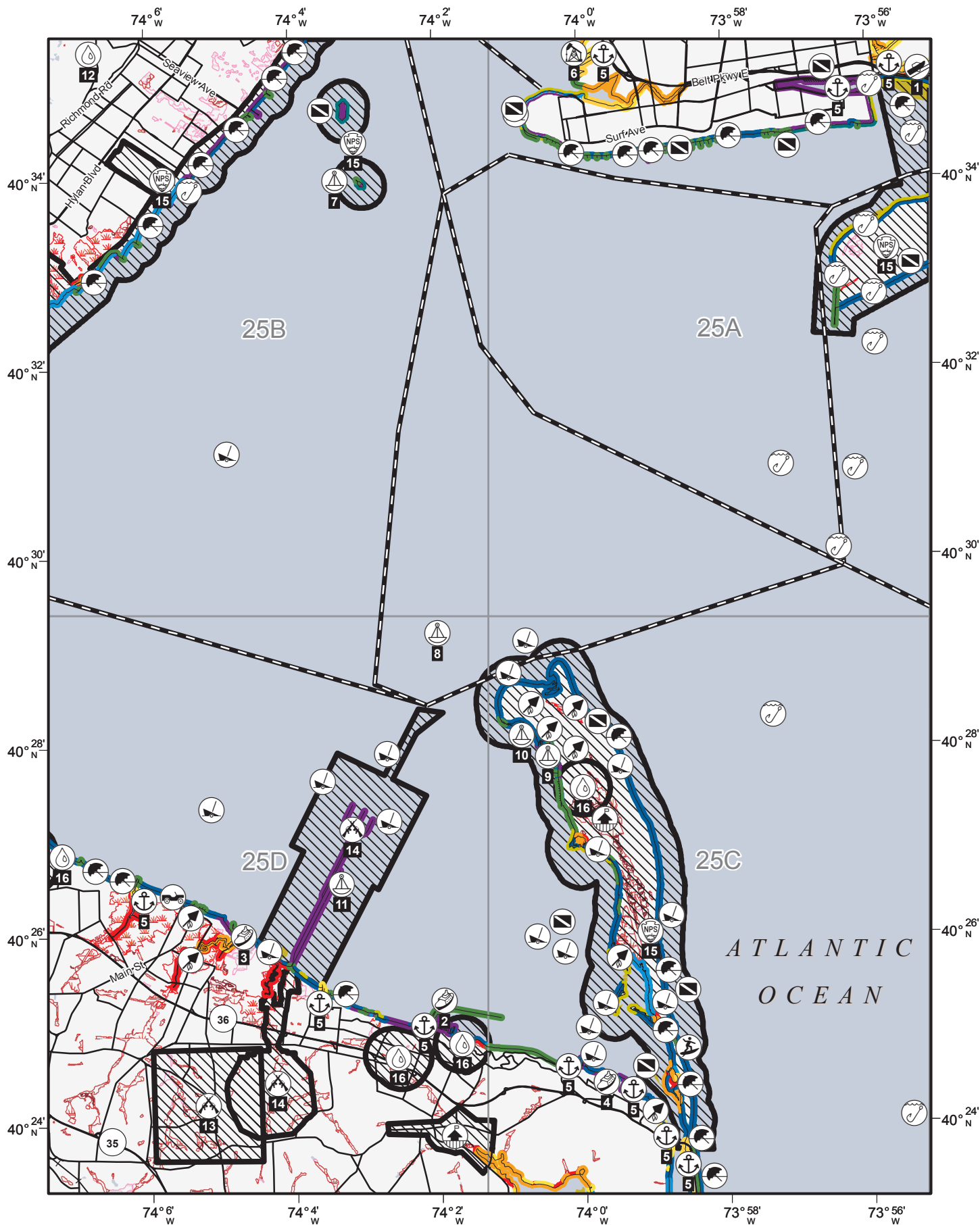
| ESI Rank | Shoreline Habitat Classification | Length (Meters) | Length (Miles) | % of ESI Shoreline |
|----------|--------------------------------------|-----------------|----------------|--------------------|
| 10A | Salt and Brackish Water Marshes | 30,268.16 | 18.81 | 38% |
| 10C | Swamps | 74.66 | 0.05 | < 1% |
| 10D | Scrub and Shrub Wetlands | 69.08 | 0.04 | < 1% |
| 9A | Sheltered Tidal Flats | 548.54 | 0.34 | 1% |
| 9B | Vegetated Low Banks | 32,570.06 | 20.24 | 41% |
| 8B | Sheltered, Solid Man-Made Structures | 2,861.58 | 1.78 | 4% |
| 8C | Sheltered Riprap | 176.75 | 0.11 | < 1% |
| 7 | Exposed Tidal Flats | 1,342.44 | 0.83 | 2% |
| 6B | Riprap | 3,654.50 | 2.27 | 5% |
| 5 | Mixed Sand and Gravel Beaches | 800.91 | 0.50 | 1% |
| 4 | Coarse Grained Sand Beaches | 3,742.42 | 2.33 | 5% |
| 3A | Fine to Medium Grained Sand Beaches | 1,438.69 | 0.89 | 2% |
| 1B | Exposed, Solid Man-Made Structures | 1,461.60 | 0.91 | 2% |

Total ESI Shoreline: 79,009.41 Total ESI Shoreline: 49.09
 Total Shoreline: 45,246.10 Total Shoreline: 28.11

Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov





Map 25

NY/ NJ Metropolitan Area



SEE BACK OF MAP
for details about mapped resources and
other resources that occur in mapped area.
Data Published: February 2016

0 Not for Navigation 2 Miles
0 2 Kilometers

1:100,000



Map 25
New York and New Jersey Metropolitan Area

HUMAN USE RESOURCES

| DISPLAYED ON MAP (POINTS) | | | | |
|--|--------------------------------|---|------------------------------|--------------|
| Map ID | Type | Name | Contact | Phone |
| 1 | BOAT RAMP | PLUMB BEACH | MARK CHRISTIANO | 713-354-4525 |
| 2 | FERRY | ATLANTIC HIGHLANDS FERRY TERMINAL | | |
| 3 | FERRY | BELFORD-HARBOR WAY FERRY TERMINAL | | |
| 4 | FERRY | HIGHLANDS FERRY TERMINAL | | |
| 5 | MARINA | MARINA | | |
| 6 | OIL FACILITY | BAYSIDE FUEL OIL DEPOT CORP. | | |
| 7 | REPEATED MEASUREMENT SITE | MUSSEL WATCH SITE - HRLB | MUSSEL WATCH PROJECT MANAGER | 301-713-3028 |
| 8 | REPEATED MEASUREMENT SITE | MUSSEL WATCH SITE - NYSH | MUSSEL WATCH PROJECT MANAGER | 301-713-3028 |
| 9 | REPEATED MEASUREMENT SITE | SANDY HOOK | | 301-713-2815 |
| 10 | REPEATED MEASUREMENT SITE | STATION SDHN4 - 8531680 - SANDY HOOK, NJ | | 228-688-2805 |
| 11 | REPEATED MEASUREMENT SITE | EXPERIMENTAL OYSTER RESTORATION SITE | DEBBIE MANS | 732-888-9870 |
| 12 | WATER INTAKE | RICHMOND COUNTY COUNTRY CLUB | | |
| DISPLAYED ON MAP (POLYGONS) | | | | |
| Map ID | Type | Name | Contact | Phone |
| 13 | MILITARY | EARLE NAVAL WEAPONS STATION | | |
| 14 | MILITARY | NAVAL WEAPONS STATION EARLE (WATERFRONT UNIT) | | |
| 15 | NATIONAL PARK | GATEWAY NATIONAL RECREATION AREA | MARK CHRISTIANO | 713-354-4525 |
| 16 | WATER INTAKE | WATER INTAKE AREA | | |
| ALSO PRESENT IN MAPPED AREA (POINTS) | | | | |
| Type | Name | Contact | Phone | |
| COAST GUARD | COAST GUARD STATION SANDY HOOK | COMMANDING OFFICER | 732-872-3428 | |
| ALSO PRESENT IN MAPPED AREA (POLYGONS) | | | | |
| Type | Name | Contact | Phone | |
| ESSENTIAL HABITAT | EFH AREA | CHRIS BRUCE | 434-951-0565 | |
| ESSENTIAL HABITAT | IMPORTANT BIRD AREA | IMPORTANT BIRD AREAS PROGRAM COORDINATOR | 607-254-2437 | |
| ESSENTIAL HABITAT | IMPORTANT BIRD AREA | GYLLA MACGREGOR | | |
| ESSENTIAL HABITAT | SIGNIFICANT COASTAL HABITAT | NYS DEPARTMENT OF STATE COORDINATOR | 518-474-6000 | |
| JURISDICTIONS | | | | |

SHORELINE RESOURCES

ESI POLYGON HABITAT TYPES

| ESI Rank | Habitat Classification | Area (Acres) | Area (Sq. Miles) |
|----------|---------------------------------|--------------|------------------|
| 10A | Salt and Brackish Water Marshes | 888.58 | 1.39 |
| 10B | Freshwater Marshes | 259.49 | 0.41 |
| 10C | Swamps | 860.62 | 1.34 |
| 10D | Scrub and Shrub Wetlands | 112.81 | 0.18 |
| 9A | Sheltered Tidal Flats | 39.15 | 0.06 |
| 7 | Exposed Tidal Flats | 232.14 | 0.36 |

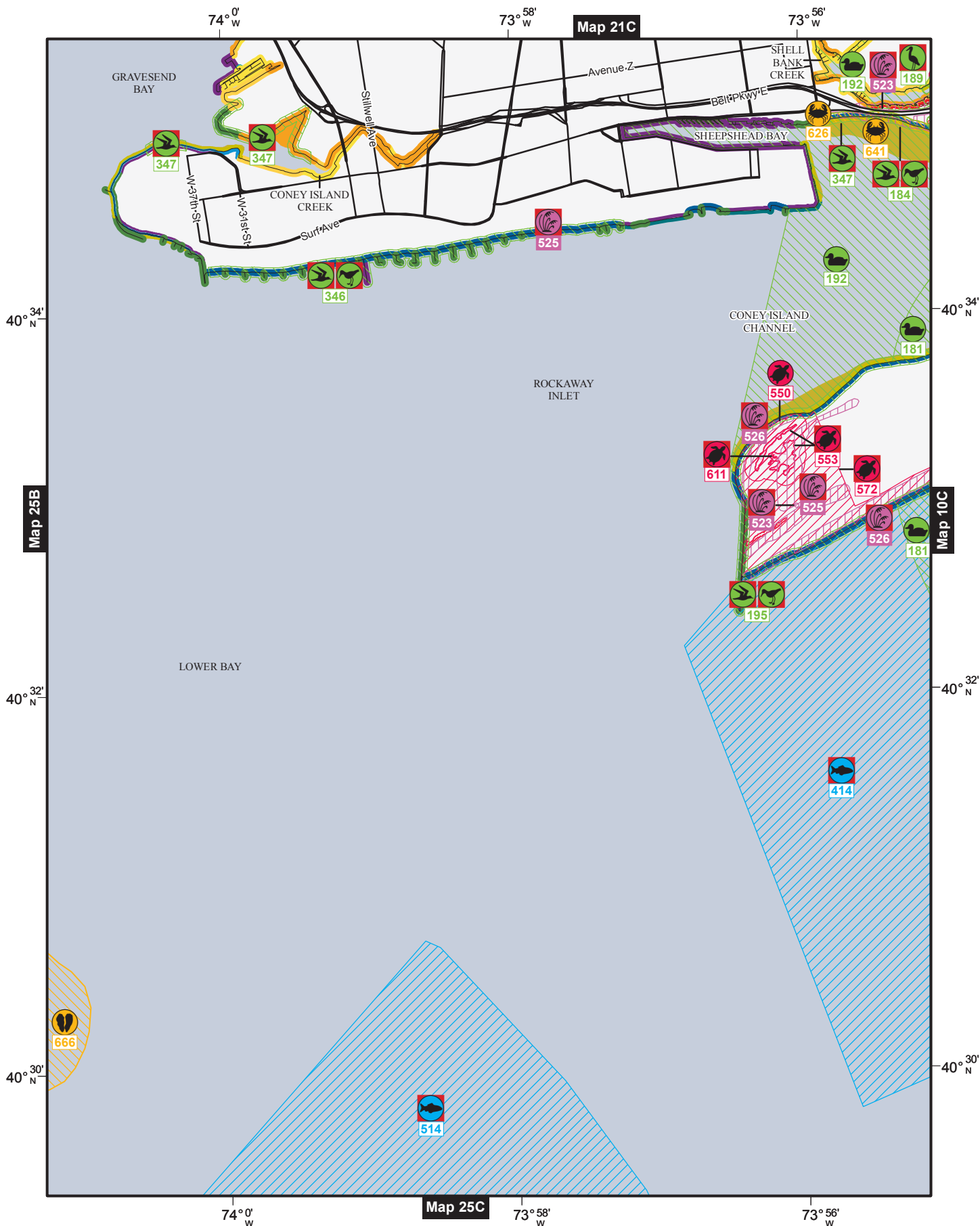
ESI SHORELINE HABITAT TYPES

| ESI Rank | Shoreline Habitat Classification | Length (Meters) | Length (Miles) | % of ESI Shoreline |
|----------------------|--------------------------------------|-----------------|----------------|--------------------|
| 10A | Salt and Brackish Water Marshes | 18,182.97 | 11.30 | 9% |
| 10C | Swamps | 437.93 | 0.27 | < 1% |
| 9A | Sheltered Tidal Flats | 5,891.38 | 3.66 | 3% |
| 9B | Vegetated Low Banks | 23,599.58 | 14.66 | 12% |
| 8B | Sheltered, Solid Man-Made Structures | 14,777.99 | 9.18 | 7% |
| 8C | Sheltered Riprap | 2,768.71 | 1.72 | 1% |
| 7 | Exposed Tidal Flats | 12,828.98 | 7.97 | 6% |
| 6B | Riprap | 20,288.63 | 12.61 | 10% |
| 5 | Mixed Sand and Gravel Beaches | 331.00 | 0.21 | < 1% |
| 4 | Coarse Grained Sand Beaches | 9,927.92 | 6.17 | 5% |
| 3A | Fine to Medium Grained Sand Beaches | 55,298.91 | 34.36 | 28% |
| 1B | Exposed, Solid Man-Made Structures | 33,994.33 | 21.12 | 17% |
| Total ESI Shoreline: | | 198,328.34 | 123.24 | |
| Total Shoreline: | | 142,784.86 | 88.72 | |

Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov



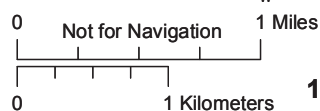


Map 25A

NY/ NJ Metropolitan Area



SEE BACK OF MAP
for details about mapped species and other
species that occur in the mapped area.
Data Published: February 2016



1:50,000



Map 25A
New York and New Jersey Metropolitan Area

BIOLOGICAL RESOURCES

Note: An asterisk (*) indicates that life stage occurs in this range but not in all months included

DISPLAYED ON MAP

BIRDS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--------|------------|------------------------|--------------------|-----|---|-----------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 181 | Waterfowl | Black scoter | Concentration Area | | | High | | | | | | | | | | | | | - | - | - | - |
| 184 | Gull/Tern | Black skimmer | Migration | C/E | | 10S | | | | | | | | | | | | | - | May | Aug-Oct | - |
| | Shorebird | American oystercatcher | Migration | -/C | | 10S | | | | | | | | | | | | | - | - | Aug-Sep | - |
| | Shorebird | Red knot | Migration | -/E | T | 1S | | | | | | | | | | | | | - | Apr-May | Jul-Sep | - |
| | Shorebird | Sanderling | Migration | -/C | | 1000S | | | | | | | | | | | | | - | Apr-May | Aug-Sep | - |
| | Shorebird | Semipalmated sandpiper | Migration | -/C | | 100S | | | | | | | | | | | | | - | Apr-May | Aug-Sep | - |
| 189 | Wading | BC night-heron | Concentration Area | -/T | | 3 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | 4 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 13 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Green heron | Concentration Area | | | 2 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Little blue heron | Concentration Area | -/C | | 3 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | | 11 | | | | | | | | | | | | | - | - | - | - |
| | Wading | YC night-heron | Concentration Area | -/T | | 4 | | | | | | | | | | | | | - | - | - | - |
| 192 | Waterfowl | American black duck | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Brant | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Bufflehead | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Canada goose | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Long-tailed duck | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Ruddy duck | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Scaup | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Snow goose | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Waterfowl | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| 195 | Gull/Tern | Black skimmer | Nesting | C/E | | 100-500 Pairs | | | | | | | | | | | | | Apr-Aug | - | - | - |
| | Gull/Tern | Common tern | Nesting | T/C | | 1000-2000 Pairs | | | | | | | | | | | | | May-Sep | - | - | - |
| | Gull/Tern | Least tern | Nesting | T/E | | 300-400 Pairs | | | | | | | | | | | | | May-Sep | - | - | - |
| | Gull/Tern | Roseate tern | Migration | E/E | E | 1S | | | | | | | | | | | | | - | May | Aug-Sep | - |
| | Shorebird | American oystercatcher | Migration | -/C | | 100S | | | | | | | | | | | | | - | - | Aug-Sep | - |
| | Shorebird | American oystercatcher | Nesting | -/C | | 10-25 Pairs | | | | | | | | | | | | | Apr-Aug | - | - | - |
| | Shorebird | Piping plover | Migration | E/E | T | 1S | | | | | | | | | | | | | - | - | Aug-Sep | - |
| | Shorebird | Piping plover | Nesting | E/E | T | 10-25 Pairs | | | | | | | | | | | | | Apr-Aug | - | - | - |
| | Shorebird | Red knot | Migration | -/E | T | 1S | | | | | | | | | | | | | - | Apr-May | Jul-Sep | - |
| | Shorebird | Sanderling | Migration | -/C | | 1000S | | | | | | | | | | | | | - | Apr-May | Aug-Sep | - |
| 346 | Shorebird | Semipalmated sandpiper | Migration | -/C | | 10S | | | | | | | | | | | | | - | Apr-May | Aug-Sep | - |
| | Gull/Tern | Black skimmer | Migration | -/C | | 100S | | | | | | | | | | | | | - | May | Aug-Oct | - |
| | Shorebird | American oystercatcher | Migration | -/C | | 1S | | | | | | | | | | | | | - | - | Aug-Sep | - |
| | Gull/Tern | Black skimmer | Migration | C/E | | 100S | | | | | | | | | | | | | - | May | Aug-Oct | - |
| | Gull/Tern | Black skimmer | Migration | C/E | | 100S | | | | | | | | | | | | | - | May | Aug-Oct | - |

FISH

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------|------------|-------------------|----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|-------|------|--------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 414 | Diadromous | Atlantic sturgeon | Concentration Area | -/E | E | High | | | | | | | | | | | | | - | - | - | May-Nov* | - |
| 514 | Diadromous | Atlantic sturgeon | General Distribution | -/E | E | Medium | | | | | | | | | | | | | - | - | - | Jan-Dec | Oct-Jun |

HABITATS & RARE PLANTS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------|------------|-------------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|-------|------|--------|-----------|--------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 523 | Plant | Threatened plant | Vulnerable Occurrence | T/- | | - | | | | | | | | | | | | | - | - | - | - | - |
| 525 | Plant | Rare plant | Vulnerable Occurrence | C/C | | - | | | | | | | | | | | | | - | - | - | - | - |
| 526 | Wetland | Seabeach amaranth | Vulnerable Occurrence | T/E | T | - | | | | | | | | | | | | | - | - | - | - | - |

REPTILES & AMPHIBIANS



| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Hatch | Internest | Juveniles | Adults |
|--------|------------|-------------------------|-----------------------|-----|---|--------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|----------|-----------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 550 | Turtle | Common snapping turtle | Nesting | | | - | | | | | | | | | | | | | Jun-Jul | Apr-Nov* | - | - | Jun-Jul |
| 553 | Turtle | Eastern box turtle | Vulnerable Occurrence | C/C | | Thermal Regulation | | | | | | | | | | | | | - | - | - | - | Jul-Sep |
| 572 | Turtle | Eastern box turtle | General Distribution | C/C | | Present And Active | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov |
| | Turtle | Eastern box turtle | Nesting | C/C | | - | | | | | | | | | | | | | Jun-Jul | Apr-Nov* | - | - | Jun-Jul |
| 578 | Turtle | N. diamondback terrapin | Nesting | | | 50-100 | | | | | | | | | | | | | Jun-Jul | Apr-Nov* | - | - | Jun-Jul |
| 611 | Turtle | Common snapping turtle | Nesting | | | - | | | | | | | | | | | | | Jun-Jul | Apr-Nov* | - | - | Jun-Jul |
| | Turtle | Eastern box turtle | General Distribution | C/C | | Present And Active | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov |
| | Turtle | Eastern box turtle | Nesting | C/C | | - | | | | | | | | | | | | | Jun-Jul | Apr-Nov* | - | - | Jun-Jul |

INVERTEBRATES


| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------|--------------|----------------------------|-----------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|----------|----------|----------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 626 | Invertebrate | R, L.T, or LE invertebrate | Vulnerable Occurrence | | | - | | | | | | | | | | | | | Apr-Jun | Apr-Jun | Jan-Dec | - | Jan-Dec |
| 641 | Crab | Horseshoe crab | Spawning Area | | | High | | | | | | | | | | | | | May-Jun | May-Jul | - | - | May-Jun |
| 666 | Bivalve | Blue mussel | Concentration Area | | | Historic | | | | | | | | | | | | | Apr-Sep | Apr-Sep | Apr-Sep | Jan-Dec | Jan-Dec |
| 670 | Bivalve | Atlantic surfclam | Concentration Area | | | Historic | | | | | | | | | | | | | Jun-Oct* | Jun-Oct* | Jun-Oct* | Jan-Dec | Jan-Dec |

WIDESPREAD IN MAPPED AREA (> 10 SQUARE KILOMETERS)


BIRDS

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|---|-----------|----------------------|----------------------|-----|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|---------|---------|------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Diving | D. crested cormorant | Wintering | | High | | | | | | | | | | | | - | - | - | | |
| | | Great cormorant | Wintering | | High | | | | | | | | | | | | - | - | - | | |
| | | Horned grebe | Migration | | High | | | | | | | | | | | | - | - | - | | |
| | | Red-throated loon | Migration | | High | | | | | | | | | | | | - | - | - | | |
|  | Gull/Tern | Common tern | General Distribution | T/C | Present | | | | | | | | | | | | - | - | - | | |
| | Waterfowl | Waterfowl | Wintering | | High | | | | | | | | | | | | - | - | - | | |


FISH

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Eggs | Larvae | Juveniles | Adults |
|---|------------|-------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|--------|-----------|---------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Diadromous | Atlantic sturgeon | -/E | E | Rare | | | | | | | | | | | | | - | - | Jan-Dec | Jan-Dec |
| | | Atlantic sturgeon | -/E | E | Low | | | | | | | | | | | | | - | - | Jan-Dec | Oct-Jun |
| | | Atlantic sturgeon | -/E | E | High | | | | | | | | | | | | | - | - | May-Jul | May-Jul |

REPTILES & AMPHIBIANS



| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Hatch | Internest | Juveniles | Adults |
|---|---------|------------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|-------|-----------|-----------|---------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Turtle | Green sea turtle | T/T | T | - | | | | | | | | | | | | | - | - | May-Nov | May-Nov |
| | | K. ridley sea turtle | E/E | E | - | | | | | | | | | | | | | - | - | May-Nov | - |
| | | Leatherback sea turtle | E/E | E | - | | | | | | | | | | | | | - | - | May-Nov | May-Nov |
| | | Loggerhead sea turtle | T/E | T | - | | | | | | | | | | | | | - | - | May-Nov | May-Nov |

MARINE MAMMALS


| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Mating | Calving | Pupping | Molt |
|---|---------|-------------------|-----|---|-------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|--------|---------|---------|------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Whale | Fin whale | E/E | E | Common | | | | | | | | | | | | | - | - | - | - |
| | | Humpback whale | E/E | E | Common | | | | | | | | | | | | | - | - | - | - |
| | | N.A. right whale | E/E | E | Uncommon, Regular | | | | | | | | | | | | | - | - | - | - |

ALSO PRESENT IN MAPPED AREA (GENERAL DISTRIBUTION)







BIRDS

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--|-----------|----------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|---------|---------|------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Alcid | Razorbill | | | | | | | | | | | | | | | | - | - | - | - |
| | Gull/Tern | Bonaparte's gull | | | | | | | | | | | | | | | | - | - | - | - |
|  | | G. black-backed gull | | | | | | | | | | | | | | | | - | - | - | - |
| | | Herring gull | | | | | | | | | | | | | | | | - | - | - | - |
| | Pelagic | Northern gannet | | | | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Black scoter | | | | | | | | | | | | | | | | - | - | - | - |
| | | Common eider | | | | | | | | | | | | | | | | - | - | - | - |
| | | Long-tailed duck | | | | | | | | | | | | | | | | - | - | - | - |
| | | Surf scoter | | | | | | | | | | | | | | | | - | - | - | - |
| | | White-winged scoter | | | | | | | | | | | | | | | | - | - | - | - |


FISH

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Eggs | Larvae | Juveniles | Adults |
|---|------------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|---------|-----------|---------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Diadromous | Alewife | | | | | | | | | | | | | | | | - | - | Jan-Dec | Feb-Jun |
| | | Alewife | | | | | | | | | | | | | | | | - | - | Nov-Apr | Nov-Apr |
| | | American eel | | | | | | | | | | | | | | | | - | Apr-Aug | Jan-Dec | Sep-Nov |
| | | American eel | | | | | | | | | | | | | | | | - | Jan-Feb | - | Sep-Dec |
| | | American shad | | | | | | | | | | | | | | | | - | - | Apr-Jun | Apr-May |
| | | American shad | | | | | | | | | | | | | | | | - | - | Nov-Apr | Nov-Apr |





FISH (continued)

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|---------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|----------|----------|----------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Blueback herring | | | | | | | | | | | | | - | - | - | Nov-Apr | Nov-Apr |
| | Blueback herring | | | | | | | | | | | | | - | - | - | May-Nov | Mar-Jul |
| | Striped bass | | | | | | | | | | | | | - | - | - | Mar-Nov | Mar-Nov |
| | Striped bass | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Atlantic croaker | | | | | | | | | | | | | - | - | - | - | Jun-Dec |
| | Atlantic croaker | | | | | | | | | | | | | - | - | Sep-Nov | Jul-Nov | Jul-Nov |
| | Atlantic herring | | | | | | | | | | | | | - | - | - | Nov-May | Nov-May |
| | Atlantic herring | | | | | | | | | | | | | - | - | Apr-May | Jan-May | Jan-May |
| | Atlantic menhaden | | | | | | | | | | | | | Sep-Dec | Sep-Dec | Oct-Dec | Oct-Apr | Oct-Apr |
| | Atlantic menhaden | | | | | | | | | | | | | May-Oct* | May-Oct* | May-Oct* | Apr-Nov | Apr-Nov |
|  | Bay anchovy | | | | | | | | | | | | | May-Nov | May-Nov | May-Dec | Jan-Dec | Jan-Dec |
| | Bay anchovy | | | | | | | | | | | | | May-Aug | May-Aug | Jun-Sep | Jul-Mar | Jan-Dec |
| | Black drum | | | | | | | | | | | | | - | - | - | Jul-Nov | Jul-Nov |
| | Black drum | | | | | | | | | | | | | - | - | - | - | Mar-Oct |
| | Black sea bass | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov |
| | Black sea bass | | | | | | | | | | | | | May-Oct | May-Oct | May-Nov | Mar-Nov | Mar-Nov |
| | Bluefish | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Bluefish | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | Northern kingfish | | | | | | | | | | | | | - | - | - | Jun-Nov | Jun-Nov |
| | Northern kingfish | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
|  | Northern puffer | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | Northern puffer | | | | | | | | | | | | | May-Aug | Jun-Oct | Jun-Oct | May-Oct | May-Oct |
| | Scup | | | | | | | | | | | | | Jul | Jul | Jul | Jun-Oct | Jun-Oct |
| | Scup | | | | | | | | | | | | | - | - | - | Apr-Dec | Apr-Dec |
| | Spot | | | | | | | | | | | | | - | - | - | Jun-Nov | Jun-Nov |
| | Spot | | | | | | | | | | | | | - | - | - | Sep-Nov | Jun-Nov |
| | Spot | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Summer flounder | | | | | | | | | | | | | Sep-Nov | Sep-Nov | Sep-Dec | Apr-Nov | Apr-Nov |
| | Summer flounder | | | | | | | | | | | | | Jun-Aug | Jun-Aug | Jun-Aug | Jun-Nov | May-Dec |
| | Weakfish | | | | | | | | | | | | | Apr-Sep | Apr-Sep | May-Sep | Apr-Nov | Apr-Nov |
|  | Weakfish | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | White perch | | | | | | | | | | | | | Mar-Nov* | Mar-Nov* | Apr-Nov* | Jan-Dec | Jan-Dec |
| | Windowpane | | | | | | | | | | | | | Apr-Jul | Apr-Jul | Apr-Oct | Jan-Dec | Jan-Dec |
| | Windowpane | | | | | | | | | | | | | Nov-Apr | Nov-Apr | Nov-May | Jan-Dec | Jan-Dec |
| | Winter flounder | | | | | | | | | | | | | - | - | - | Oct-Jun | Oct-Jun |
| | Winter flounder | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Atlantic silverside | | | | | | | | | | | | | - | - | - | Jan-Apr | Jan-Apr |
| | Killifish | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | Northern pipefish | | | | | | | | | | | | | May-Jul | - | May-Aug | Apr-Dec | Apr-Dec |
| | Silversides | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
|  | American sand lance | | | | | | | | | | | | | Nov-Apr | Nov-Apr | Nov-Apr | Nov-Apr | Nov-Apr |
| | American sand lance | | | | | | | | | | | | | - | - | - | - | Oct-Jun |
| | American sand lance | | | | | | | | | | | | | - | - | - | - | Nov-Apr |
| | American sand lance | | | | | | | | | | | | | - | - | - | - | Nov-Apr |
| | American sand lance | | | | | | | | | | | | | - | - | - | - | Nov-Apr |
| | American sand lance | | | | | | | | | | | | | - | - | - | - | Nov-Apr |
| | American sand lance | | | | | | | | | | | | | - | - | - | - | Nov-Apr |
| | American sand lance | | | | | | | | | | | | | - | - | - | - | Nov-Apr |
| | American sand lance | | | | | | | | | | | | | - | - | - | - | Nov-Apr |
| | American sand lance | | | | | | | | | | | | | - | - | - | - | Nov-Apr |
|  | Atlantic cod | | | | | | | | | | | | | - | - | - | - | Nov-Apr |
| | Atlantic cod | | | | | | | | | | | | | - | - | - | - | Nov-Apr |
| | Atlantic cod | | | | | | | | | | | | | - | - | - | - | Nov-Apr |
| | Atlantic cod | | | | | | | | | | | | | - | - | - | - | Nov-Apr |
| | Atlantic cod | | | | | | | | | | | | | - | - | - | - | Nov-Apr |
| | Atlantic tomcod | | | | | | | | | | | | | - | - | - | - | Jan-Dec |
| | Atlantic tomcod | | | | | | | | | | | | | - | - | - | - | Jan-Dec |
| | Atlantic tomcod | | | | | | | | | | | | | - | - | - | - | Jan-Dec |
| | Atlantic tomcod | | | | | | | | | | | | | - | - | - | - | Jan-Dec |
| | Atlantic tomcod | | | | | | | | | | | | | - | - | - | - | Jan-Dec |

FISH (continued)

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|-------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|----------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Goosefish | | | | | | | | | | | | | - | - | - | - | Jan-Jun |
| | Little skate | | | | | | | | | | | | | Jan-Dec | Jan-Dec | - | Jan-Dec | Jan-Dec |
| | Ocean pout | | | | | | | | | | | | | - | - | - | Dec-Aug | Dec-Aug |
| | Pollock | | | | | | | | | | | | | - | - | - | Mar-Jun | - |
| | Red hake | | | | | | | | | | | | | Jun-Sep | Jun-Sep | Jul-Oct | Jan-Dec | Jan-Dec |
| | Red hake | | | | | | | | | | | | | - | - | - | Nov-May | Nov-May |
| | Silver hake | | | | | | | | | | | | | May-Oct | May-Oct | May-Oct | Jan-Dec | Jan-Dec |
| | Smooth dogfish | | | | | | | | | | | | | May-Jun | May-Oct | - | Apr-Oct | Apr-Oct |
| | Tautog | | | | | | | | | | | | | May | May | May | Jan-Dec | Apr-Nov |
| | Tautog | | | | | | | | | | | | | May-Aug | May-Aug | Jun-Aug | Jan-Dec | Jan-Dec |
| | Tautog | | | | | | | | | | | | | May-Aug | May-Aug | Jun-Aug | Mar-Nov | Mar-Nov |
| | Winter skate | | | | | | | | | | | | | - | - | - | Sep-May | Sep-Nov |
| | Atlantic mackerel | | | | | | | | | | | | | - | - | - | Nov-Apr* | Nov-Apr* |
| | Atlantic mackerel | | | | | | | | | | | | | - | - | - | Apr-Nov* | Apr-Nov* |
| | Bluefin tuna | | | | | | | | | | | | | - | - | - | Jun-Sep | - |
| | Butterfish | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov |
| | Butterfish | | | | | | | | | | | | | May-Aug | May-Aug | May-Oct | May-Dec | May-Dec |
| | Dusky shark | | | | | | | | | | | | | - | - | - | May-Sep | May-Sep |
| | Sand tiger | | | | | | | | | | | | | - | - | - | Jun-Oct | - |
| | Sandbar shark | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Shortfin mako | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Skipjack tuna | | | | | | | | | | | | | - | - | - | Jun-Sep | Jun-Sep |
| | Spiny dogfish | | | | | | | | | | | | | - | - | - | Oct-Apr | Oct-Apr |
| | Thresher shark | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | Tiger shark | | | | | | | | | | | | | - | - | - | Jul-Oct | - |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | |

INVERTEBRATES

| | | Monthly Presence | | | | | | | | | | | | | | | | | |
|---|---|------------------|---|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| Subelement | | Species | J | F | M | A | M | J | J | A | S | O | N | D | Spawn | Eggs | Larvae | Juveniles | Adults |
|  | Bivalve | Blue mussel | | | | | | | | | | | | | Apr-Nov | Apr-Nov | Apr-Nov | Jan-Dec | Jan-Dec |
| | | Northern quahog | | | | | | | | | | | | | Jun-Sep | Jun-Sep | Jun-Sep | Jan-Dec | Jan-Dec |
| | | Softshell clam | | | | | | | | | | | | | May-Oct | May-Oct | May-Oct | Jan-Dec | Jan-Dec |
|  | Cephalopod | Longfin squid | | | | | | | | | | | | | - | - | - | - | Jan-Dec |
| |  | Blue crab | | | | | | | | | | | | | May-Oct | Jun-Oct | Jun-Oct | Jan-Dec | Jan-Dec |
| | | Blue crab | | | | | | | | | | | | | - | - | Jun-Oct | - | Aug-Mar |
| | Horseshoe crab | | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Horseshoe crab | | | | | | | | | | | | | | - | - | - | Aug-Mar | Aug-Mar |
| | American lobster | | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
|  | Lobster | American lobster | | | | | | | | | | | | | Jun-Sep | Jun-Sep | Jun-Oct | Jan-Dec | Jan-Dec |
| | | American lobster | | | | | | | | | | | | | | | | Jan-Dec | Jan-Dec |

MARINE MAMMALS

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Mating | Calving | Pupping | Molt |
|---|--------------------|-------------------------|---|---|---|---|---|---|---|---|---|---|---|--------|---------|---------|------|
| | | J F M A M J J A S O N D | | | | | | | | | | | | | | | |
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  Dolphin | Bottlenose dolphin | | | | | | | | | | | | | | | | - |
| | Harbor porpoise | | | | | | | | | | | | | | | | - |

For additional information about species locations and extent, reference the underlying GIS data available from response.restoration.noaa.gov

SHORELINE RESOURCES

ESI POLYGON HABITAT TYPES



| ESI Rank | Habitat Classification | Area (Acres) | Area (Sq. Miles) |
|----------|---------------------------------|--------------|------------------|
| 10A | Salt and Brackish Water Marshes | 6.04 | 0.01 |
| 10B | Freshwater Marshes | 14.78 | 0.02 |
| 10D | Scrub and Shrub Wetlands | 0.48 | 0.00 |
| 9A | Sheltered Tidal Flats | 19.07 | 0.03 |
| 7 | Exposed Tidal Flats | 157.81 | 0.25 |

ESI SHORELINE HABITAT TYPES

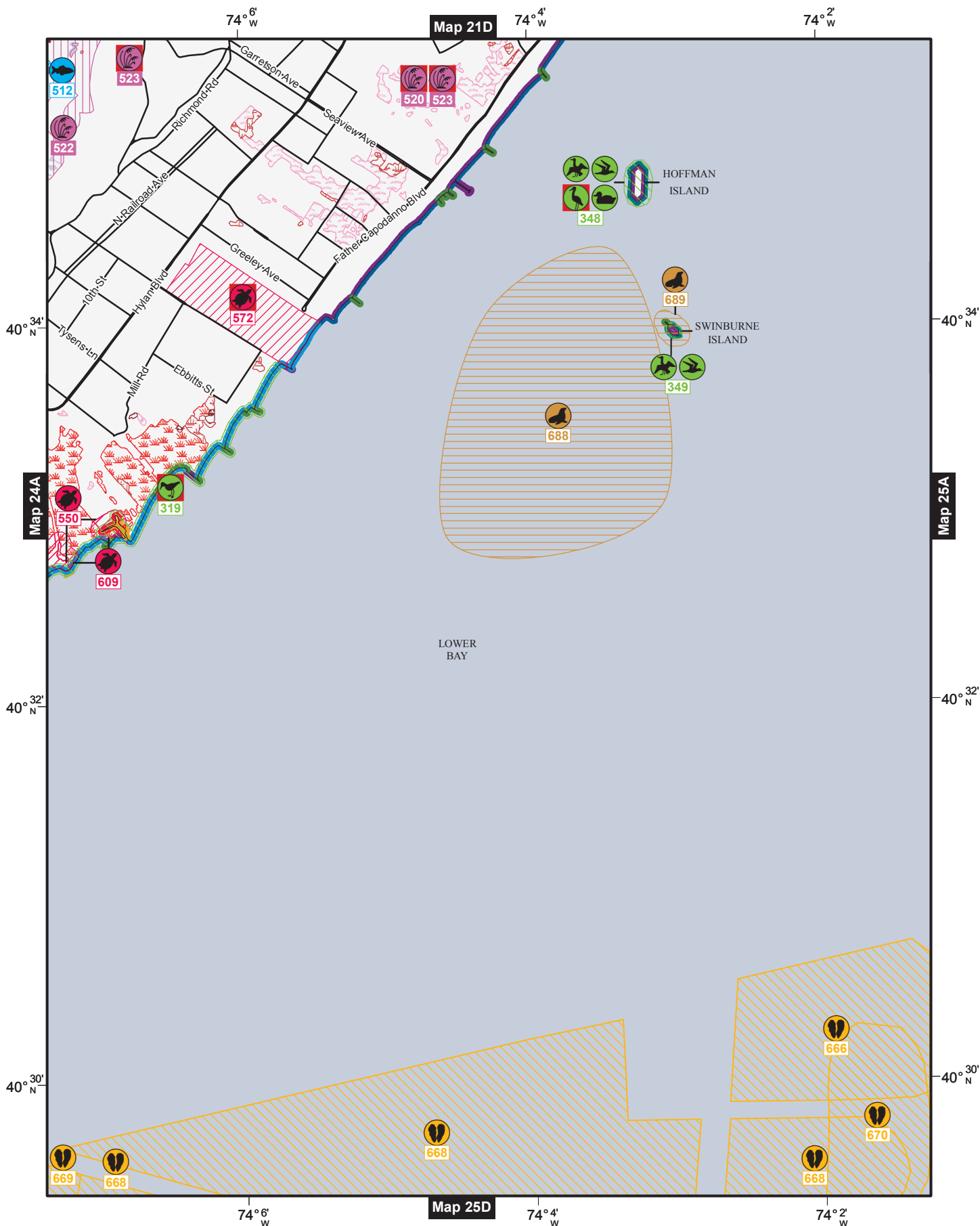
| ESI Rank | Shoreline Habitat Classification | Length (Meters) | Length (Miles) | % of ESI Shoreline |
|----------|--------------------------------------|-----------------|----------------|--------------------|
| 10A | Salt and Brackish Water Marshes | 826.64 | 0.51 | 1% |
| 9A | Sheltered Tidal Flats | 1,840.52 | 1.14 | 3% |
| 9B | Vegetated Low Banks | 5,308.63 | 3.30 | 9% |
| 8B | Sheltered, Solid Man-Made Structures | 6,876.87 | 4.27 | 12% |
| 8C | Sheltered Riprap | 2,414.30 | 1.50 | 4% |
| 7 | Exposed Tidal Flats | 7,079.93 | 4.40 | 13% |
| 6B | Riprap | 7,227.57 | 4.49 | 13% |
| 5 | Mixed Sand and Gravel Beaches | 14.29 | 0.01 | < 1% |
| 4 | Coarse Grained Sand Beaches | 1,980.29 | 1.23 | 4% |
| 3A | Fine to Medium Grained Sand Beaches | 11,517.57 | 7.16 | 21% |
| 1B | Exposed, Solid Man-Made Structures | 10,920.30 | 6.79 | 19% |

Total ESI Shoreline: 56,006.91 Total ESI Shoreline: 34.80
Total Shoreline: 41,379.15 Total Shoreline: 25.71

Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov

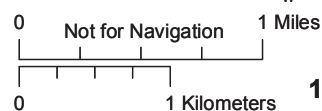




Map 25B
NY/ NJ Metropolitan Area



SEE BACK OF MAP
 for details about mapped species and other
 species that occur in the mapped area.
 Data Published: February 2016



1:50,000



Map 25B
New York and New Jersey Metropolitan Area

BIOLOGICAL RESOURCES

Note: An asterisk (*) indicates that life stage occurs in this range but not in all months included

DISPLAYED ON MAP

BIRDS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--------|------------|------------------------|-------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 319 | Shorebird | American oystercatcher | Migration | -/C | | 1S | | | | | | | | | | | | | - | - | Aug-Sep | - |
| | Shorebird | Red knot | Migration | -/E | T | 1S | | | | | | | | | | | | | - | Apr-May | Jul-Sep | - |
| 348 | Diving | D. crested cormorant | Nesting | | | 100-500 Pairs | | | | | | | | | | | | | Jun-Sep | - | - | - |
| | Gull/Tern | G. black-backed gull | Nesting | | | 100-500 Pairs | | | | | | | | | | | | | Apr-Jul | - | - | - |
| | Gull/Tern | Herring gull | Nesting | | | 50-100 Pairs | | | | | | | | | | | | | Apr-Sep | - | - | - |
| | Wading | BC night-heron | Nesting | -/T | | 100-300 Pairs | | | | | | | | | | | | | Apr-Aug | - | - | - |
| | Wading | Glossy ibis | Nesting | -/C | | 50-100 Pairs | | | | | | | | | | | | | Apr-Aug | - | - | - |
| | Wading | Great egret | Nesting | | | 100-200 Pairs | | | | | | | | | | | | | Apr-Aug | - | - | - |
| | Wading | Little blue heron | Nesting | -/C | | 1-5 Pairs | | | | | | | | | | | | | Apr-Aug | - | - | - |
| | Wading | Snowy egret | Nesting | -/C | | 50-100 Pairs | | | | | | | | | | | | | Apr-Aug | - | - | - |
| | Wading | Tricolored heron | Nesting | -/C | | - | | | | | | | | | | | | | Apr-Aug | - | - | - |
| | Wading | YC night-heron | Nesting | -/T | | 3 Pairs | | | | | | | | | | | | | Apr-Aug | - | - | - |
| | Waterfowl | Canada goose | Nesting | | | 3 Pairs | | | | | | | | | | | | | Mar-Jun | - | - | - |
| | Waterfowl | Mallard | Nesting | | | 1 Pair | | | | | | | | | | | | | Mar-Sep | - | - | - |
| 349 | Diving | D. crested cormorant | Nesting | | | 100-500 Pairs | | | | | | | | | | | | | Jun-Sep | - | - | - |
| | Gull/Tern | G. black-backed gull | Nesting | | | 50-100 Pairs | | | | | | | | | | | | | Apr-Jul | - | - | - |
| | Gull/Tern | Herring gull | Nesting | | | 50-100 Pairs | | | | | | | | | | | | | Apr-Sep | - | - | - |

FISH

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------|------------|-----------------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 512 | Freshwater | Bluegill | Harvest Area | | | - | | | | | | | | | | | | | Apr-Jun | Apr-Jun | Apr-Aug | Jan-Dec | Jan-Dec |
| | Freshwater | Chain pickerel | Harvest Area | | | - | | | | | | | | | | | | | Apr-Jun | Apr-Jun | Apr-Aug | Jan-Dec | Jan-Dec |
| | Freshwater | Largemouth bass | Harvest Area | | | - | | | | | | | | | | | | | Apr-Jun | Apr-Jun | Apr-Aug | Jan-Dec | Jan-Dec |
| | Freshwater | Pumpkinseed | Harvest Area | | | - | | | | | | | | | | | | | Apr-Jun | Apr-Jun | Apr-Aug | Jan-Dec | Jan-Dec |

HABITATS & RARE PLANTS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--------|------------|-----------------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 520 | Plant | Endangered plant | Vulnerable Occurrence | E/E | | - | | | | | | | | | | | | | - | - | - | - |
| 522 | Upland | Rare upland community | Vulnerable Occurrence | | | - | | | | | | | | | | | | | - | - | - | - |
| 523 | Plant | Threatened plant | Vulnerable Occurrence | T/- | | - | | | | | | | | | | | | | - | - | - | - |

REPTILES & AMPHIBIANS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Hatch | Internest | Juveniles | Adults |
|--------|------------|------------------------|----------------------|-----|---|--------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|----------|-----------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 550 | Turtle | Common snapping turtle | Nesting | | | - | | | | | | | | | | | | | Jun-Jul | Apr-Nov* | - | - | Jun-Jul |
| 572 | Turtle | Eastern box turtle | General Distribution | C/C | | Present And Active | | | | | | | | | | | | | Jun-Jul | Apr-Nov* | - | Apr-Nov | Apr-Nov |
| 609 | Turtle | Painted turtle | Nesting | | | - | | | | | | | | | | | | | Jun-Jul | Aug-Sep | - | - | Jun-Jul |

INVERTEBRATES



| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------|------------|-------------------|--------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|----------|----------|----------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 666 | Bivalve | Blue mussel | Concentration Area | | | Historic | | | | | | | | | | | | | Apr-Sep | Apr-Sep | Apr-Sep | Jan-Dec | Jan-Dec |
| 668 | Bivalve | Northern quahog | Concentration Area | | | Historic | | | | | | | | | | | | | Jun-Sep | Jun-Sep | Jun-Sep | Jan-Dec | Jan-Dec |
| 669 | Bivalve | Softshell clam | Concentration Area | | | Historic | | | | | | | | | | | | | May-Oct | May-Oct | May-Oct | Jan-Dec | Jan-Dec |
| 670 | Bivalve | Atlantic surfclam | Concentration Area | | | Historic | | | | | | | | | | | | | Jun-Oct* | Jun-Oct* | Jun-Oct* | Jan-Dec | Jan-Dec |

MARINE MAMMALS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Mating | Calving | Pupping | Molt |
|--------|------------|-------------|--------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|--------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 688 | Pinniped | Seals | Concentration Area | | | High | | | | | | | | | | | | - | - | - | | |
| 689 | Pinniped | Gray seal | Haul Out | | | Few | | | | | | | | | | | | - | - | - | | |
| | Pinniped | Harbor seal | Haul Out | | | 20-30 Avg | | | | | | | | | | | | - | - | - | | |

WIDESPREAD IN MAPPED AREA (> 10 SQUARE KILOMETERS)


BIRDS

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|---|-----------|----------------------|-----------|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|---------|---------|------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Diving | D. crested cormorant | Wintering | | | High | | | | | | | | | | | | | - | - | |
| | | Great cormorant | Wintering | | | High | | | | | | | | | | | | | - | - | |
| | | Horned grebe | Migration | | | High | | | | | | | | | | | | | - | - | |
| | | Red-throated loon | Migration | | | High | | | | | | | | | | | | | - | - | |
|  | Waterfowl | Waterfowl | Wintering | | | High | | | | | | | | | | | | | - | - | |

FISH

| Subelement | Species | Mapping Qualifier | S -/E | F E | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--|-------------------|----------------------|----------|--------|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|-------|------|--------|-----------|---------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  Diadromous | Atlantic sturgeon | General Distribution | | | Rare | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |

REPTILES & AMPHIBIANS

| Subelement | Species | Mapping Qualifier | S | | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Hatch | Internest | Juveniles | Adults |
|---|---------|------------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|-------|-----------|-----------|--------|
| | | | F | T | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Turtle | Green sea turtle | T/T | | - | | | | | | | | | | | | | - | - | May-Nov | May-Nov | |
| | | K. ridley sea turtle | E/E | E | - | | | | | | | | | | | | | - | - | May-Nov | - | |
| | | Leatherback sea turtle | E/E | E | - | | | | | | | | | | | | | - | - | May-Nov | May-Nov | |
| | | Loggerhead sea turtle | T/E | T | - | | | | | | | | | | | | | - | - | May-Nov | May-Nov | |

MARINE MAMMALS

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Mating | Calving | Pupping | Molt |
|------------|---------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|--------|---------|---------|------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |

| | | | | | | | | | | | | | | | | | | | | | |
|-------|----------------|----------------------|-----|---|--------|--|--|--|--|--|--|--|--|--|--|--|--|---|---|---|---|
| Whale | Humpback whale | General Distribution | E/E | E | Common | | | | | | | | | | | | | - | - | - | - |
|-------|----------------|----------------------|-----|---|--------|--|--|--|--|--|--|--|--|--|--|--|--|---|---|---|---|

ALSO PRESENT IN MAPPED AREA (GENERAL DISTRIBUTION)

BIRDS

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|------------|---------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|---------|---------|------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |

| | | | | | | | | | | | | | | | | | |
|-----------|-----------------|--|--|--|--|--|--|--|--|--|--|--|--|---|---------|---|---|
| Shorebird | Ruddy turnstone | | | | | | | | | | | | | - | Apr-May | - | - |
| Waterfowl | Black scoter | | | | | | | | | | | | | - | - | - | - |

FISH

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|------------|---------|------------------|---|---|---|---|---|---|---|---|---|---|---|-------|------|--------|-----------|--------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |




| | | | | | | | | | | | | | | | | | | |
|--------------------|---------------------|--|--|--|--|--|--|--|--|--|--|--|--|----------|----------|----------|---------|---------|
| Diadromous | Alewife | | | | | | | | | | | | | - | - | - | Jan-Dec | Feb-Jun |
| | American eel | | | | | | | | | | | | | - | - | Apr-Aug | Jan-Dec | Sep-Nov |
| | American shad | | | | | | | | | | | | | - | - | - | Apr-Jun | Apr-May |
| | Blueback herring | | | | | | | | | | | | | - | - | - | May-Nov | Mar-Jul |
| | Striped bass | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Atlantic croaker | | | | | | | | | | | | | - | - | Sep-Nov | Jul-Nov | Jul-Nov |
| | Atlantic herring | | | | | | | | | | | | | - | - | Apr-May | Jan-May | Jan-May |
| | Atlantic menhaden | | | | | | | | | | | | | May-Oct* | May-Oct* | May-Oct* | Apr-Nov | Apr-Nov |
| | Bay anchovy | | | | | | | | | | | | | May-Aug | May-Aug | Jun-Sep | Jul-Mar | Jan-Dec |
| | Black drum | | | | | | | | | | | | | - | - | - | Jul-Nov | Jul-Nov |
| Estuarine Nursery | Black sea bass | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov |
| | Bluefish | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Northern kingfish | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | Northern puffer | | | | | | | | | | | | | May-Aug | Jun-Oct | Jun-Oct | May-Oct | May-Oct |
| | Scup | | | | | | | | | | | | | Jul | Jul | Jul | Jun-Oct | Jun-Oct |
| | Spot | | | | | | | | | | | | | - | - | - | Jun-Nov | Jun-Nov |
| | Summer flounder | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Weakfish | | | | | | | | | | | | | Jun-Aug | Jun-Aug | Jun-Aug | Jun-Nov | May-Dec |
| | White perch | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Windowpane | | | | | | | | | | | | | Apr-Jul | Apr-Jul | Apr-Oct | Jan-Dec | Jan-Dec |
| Estuarine Resident | Winter flounder | | | | | | | | | | | | | Nov-Apr | Nov-Apr | Nov-May | Jan-Dec | Oct-Jun |
| | Killifish | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | Northern pipefish | | | | | | | | | | | | | May-Jul | - | May-Aug | Apr-Dec | Apr-Dec |
| | Silversides | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | American sand lance | | | | | | | | | | | | | Nov-Apr | Nov-Apr | Nov-Apr | Nov-Apr | Nov-Apr |
| Marine Benthic | Atlantic cod | | | | | | | | | | | | | - | - | - | Nov-Apr | - |
| | Atlantic tomcod | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Pollock | | | | | | | | | | | | | - | - | - | Mar-Jun | - |
| | Red hake | | | | | | | | | | | | | - | - | - | Nov-May | Nov-May |
| | Smooth dogfish | | | | | | | | | | | | | May-Jun | May-Oct | - | Apr-Oct | Apr-Oct |
| | Tautog | | | | | | | | | | | | | May | May | May | Jan-Dec | Apr-Nov |

New York and New Jersey Metropolitan Area: Map 25B


FISH (continued)

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Eggs | Larvae | Juveniles | Adults |
|---|-------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|--------|-----------|--------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Marine Pelagic | | | | | | | | | | | | | | | | |
| | Atlantic mackerel | | | | | | | | | | | | | | | | |
| | Butterfish | | | | | | | | | | | | | | | | |

INVERTEBRATES

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Eggs | Larvae | Juveniles | Adults |
|---|------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|--------|-----------|--------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Bivalve | | | | | | | | | | | | | | | | |
| | Blue mussel | | | | | | | | | | | | | | | | |
| | Northern quahog | | | | | | | | | | | | | | | | |
| | Softshell clam | | | | | | | | | | | | | | | | |
|  | Crab | | | | | | | | | | | | | | | | |
| | Blue crab | | | | | | | | | | | | | | | | |
| | Horseshoe crab | | | | | | | | | | | | | | | | |
|  | Lobster | | | | | | | | | | | | | | | | |
| | American lobster | | | | | | | | | | | | | | | | |

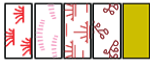
MARINE MAMMALS

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Mating | Calving | Pupping | Molt |
|---|--------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|--------|---------|---------|------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Dolphin | | | | | | | | | | | | | | | | |
| | Bottlenose dolphin | | | | | | | | | | | | | | | | |
| | Harbor porpoise | | | | | | | | | | | | | | | | |

For additional information about species locations and extent, reference the underlying GIS data available from response.restoration.noaa.gov

ESI POLYGON HABITAT TYPES

| ESI Rank | Habitat Classification | Area (Acres) | Area (Sq. Miles) |
|----------|---------------------------------|--------------|------------------|
| 10A | Salt and Brackish Water Marshes | 222.50 | 0.35 |
| 10B | Freshwater Marshes | 149.67 | 0.23 |
| 10C | Swamps | 36.20 | 0.06 |
| 10D | Scrub and Shrub Wetlands | 3.80 | 0.01 |
| 7 | Exposed Tidal Flats | 2.54 | 0.00 |



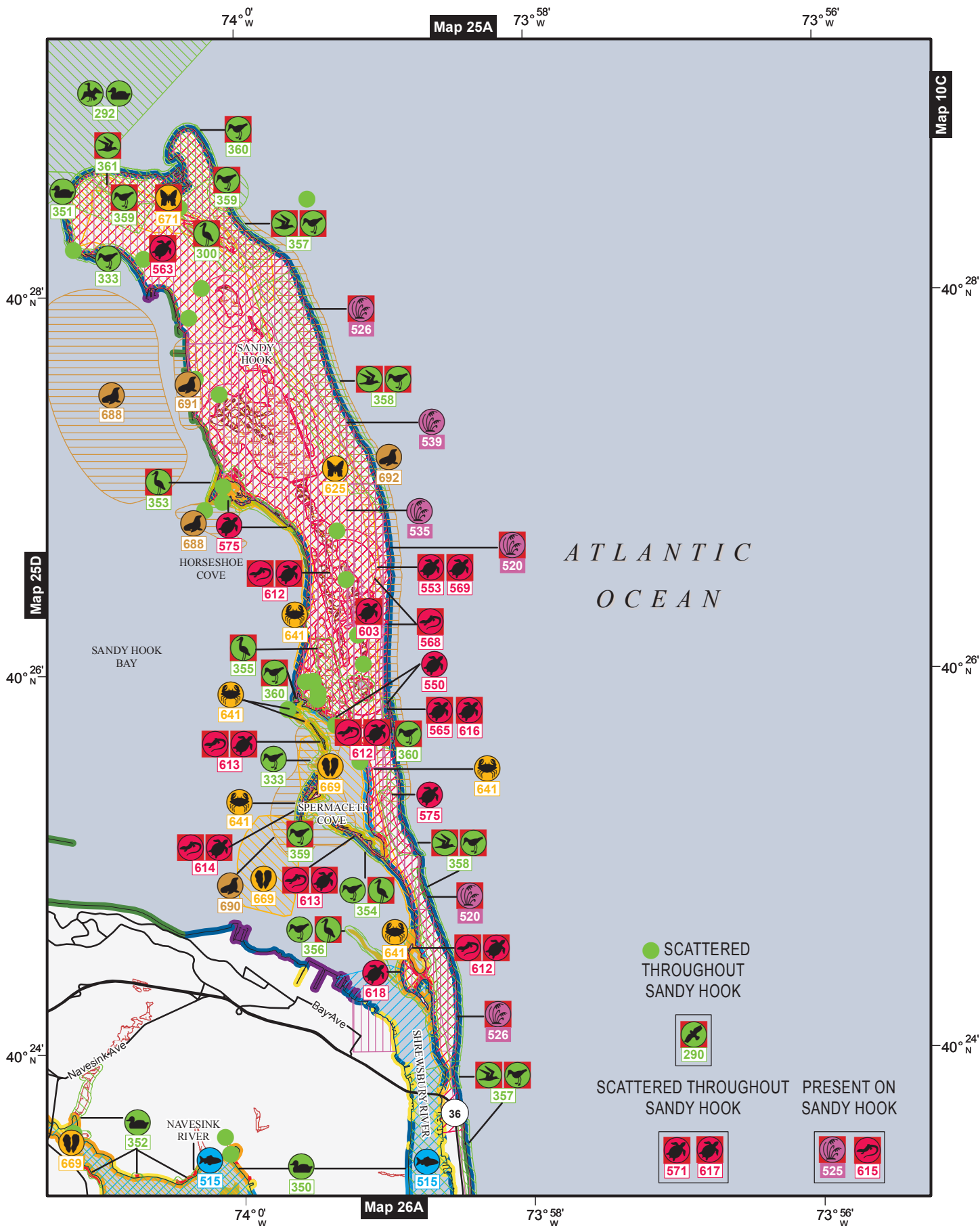
ESI SHORELINE HABITAT TYPES

| ESI Rank | Shoreline Habitat Classification | Length (Meters) | Length (Miles) | % of ESI Shoreline |
|----------------------|-------------------------------------|-----------------|----------------|--------------------|
| 10A | Salt and Brackish Water Marshes | 532.76 | 0.33 | 3% |
| 10C | Swamps | 84.23 | 0.05 | < 1% |
| 9A | Sheltered Tidal Flats | 818.20 | 0.51 | 4% |
| 9B | Vegetated Low Banks | 818.20 | 0.51 | 4% |
| 6B | Riprap | 2,697.02 | 1.68 | 14% |
| 4 | Coarse Grained Sand Beaches | 3,979.74 | 2.47 | 21% |
| 3A | Fine to Medium Grained Sand Beaches | 3,844.77 | 2.39 | 21% |
| 1B | Exposed, Solid Man-Made Structures | 5,837.86 | 3.63 | 31% |
| Total ESI Shoreline: | | 18,612.77 | 11.57 | |
| Total Shoreline: | | 11,528.61 | 7.16 | |

Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov





Map 25C
New York and New Jersey Metropolitan Area

BIOLOGICAL RESOURCES

Note: An asterisk (*) indicates that life stage occurs in this range but not in all months included

DISPLAYED ON MAP

BIRDS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | 1 Pair | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--------|------------|----------------------|--------------------|-----|---|---------------|--------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|------|
| | | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 290 | Raptor | Threatened raptor | Nesting | -/T | | | | | | | | | | | | | | | | Apr-Jul | - | - | - |
| 292 | Diving | D. crested cormorant | Wintering | | | | High | | | | | | | | | | | | | - | - | - | - |
| | Diving | Great cormorant | Wintering | | | | High | | | | | | | | | | | | | - | - | - | - |
| | Diving | Horned grebe | Migration | | | | High | | | | | | | | | | | | | - | - | Oct-Nov | - |
| | Diving | Red-throated loon | Migration | | | | High | | | | | | | | | | | | | - | - | Oct-Nov | - |
| | Waterfowl | Waterfowl | Wintering | | | | High | | | | | | | | | | | | | - | - | - | - |
| 300 | Wading | Least bittern | Nesting | T/C | | | - | | | | | | | | | | | | | Apr-Sep | - | - | - |
| 333 | Shorebird | Shorebirds | Migration | | | | High | | | | | | | | | | | | | - | Mar-May | Aug-Oct | - |
| 350 | Waterfowl | Brant | Wintering | | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Canada goose | Wintering | | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Common merganser | Wintering | | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Ruddy duck | Wintering | | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Scaup | Wintering | | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Waterfowl | Wintering | | | | 100S | | | | | | | | | | | | | - | - | - | - |
| 351 | Waterfowl | American black duck | Wintering | | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Brant | Wintering | | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Long-tailed duck | Wintering | | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Mallard | Wintering | | | | 100S | | | | | | | | | | | | | - | - | - | - |
| 352 | Waterfowl | Brant | Wintering | | | | - | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Bufflehead | Wintering | | | | - | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Canada goose | Wintering | | | | - | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Common merganser | Wintering | | | | - | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Ruddy duck | Wintering | | | | - | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Scaup | Wintering | | | | - | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Waterfowl | Wintering | | | | - | | | | | | | | | | | | | - | - | - | - |
| 353 | Wading | BC night-heron | Concentration Area | -/T | | | 2 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | | 3 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Green heron | Concentration Area | | | | 3 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Little blue heron | Concentration Area | -/C | | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | | | 2 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Tricolored heron | Concentration Area | -/C | | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | YC night-heron | Concentration Area | -/T | | | 2 | | | | | | | | | | | | | - | - | - | - |
| 354 | Shorebird | Shorebirds | Migration | | | | High | | | | | | | | | | | | | - | Mar-May | Aug-Oct | - |
| | Wading | BC night-heron | Concentration Area | -/T | | | 3 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | | 6 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | | 5 | | | | | | | | | | | | | - | - | - | - |

BIRDS (continued)

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--------|------------|------------------------|--------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| | Wading | Green heron | Concentration Area | | | 2 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Little blue heron | Concentration Area | -/C | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | | 5 | | | | | | | | | | | | | - | - | - | - |
| 355 | Wading | BC night-heron | Concentration Area | -/T | | 40 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | 6 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 7 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Green heron | Concentration Area | | | 2 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Little blue heron | Concentration Area | -/C | | 2 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | | 4 | | | | | | | | | | | | | - | - | - | - |
| | Wading | YC night-heron | Concentration Area | -/T | | 11 | | | | | | | | | | | | | - | - | - | - |
| 356 | Shorebird | Shorebirds | Migration | | | High | | | | | | | | | | | | | - | Mar-May | Aug-Oct | - |
| | Wading | BC night-heron | Concentration Area | -/T | | 3 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | 4 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 6 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Little blue heron | Concentration Area | -/C | | 2 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | | 6 | | | | | | | | | | | | | - | - | - | - |
| 357 | Gull/Tern | Least tern | Nesting | T/E | | - | | | | | | | | | | | | | May-Sep | - | - | - |
| | Shorebird | Piping plover | Nesting | E/E | T | - | | | | | | | | | | | | | Apr-Aug | - | - | - |
| | Gull/Tern | Least tern | Nesting | T/E | | - | | | | | | | | | | | | | May-Sep | - | - | - |
| | Shorebird | American oystercatcher | Nesting | -/C | | - | | | | | | | | | | | | | Apr-Aug | - | - | - |
| | Shorebird | Piping plover | Nesting | E/E | T | - | | | | | | | | | | | | | Apr-Aug | - | - | - |
| 359 | Shorebird | Red knot | Migration | -/E | T | - | | | | | | | | | | | | | - | May | Sep | - |
| 360 | Shorebird | American oystercatcher | Nesting | -/C | | - | | | | | | | | | | | | | Apr-Aug | - | - | - |
| 361 | Gull/Tern | Black skimmer | Nesting | C/E | | - | | | | | | | | | | | | | Apr-Aug | - | - | - |

FISH

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------|------------|------------------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|-------|------|--------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 515 | Diadromous | Alewife | Migration | | | - | | | | | | | | | | | | | - | - | - | - | Mar-Jun |
| | Diadromous | Blueback herring | Migration | | | - | | | | | | | | | | | | | - | - | - | - | Mar-Jun |

HABITATS & RARE PLANTS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--------|------------|-----------------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 520 | Plant | Endangered plant | Vulnerable Occurrence | E/E | | - | | | | | | | | | | | | | - | - | - | - |
| 525 | Plant | Rare plant | Vulnerable Occurrence | C/C | | - | | | | | | | | | | | | | - | - | - | - |
| 526 | Wetland | Seabeach amaranth | Vulnerable Occurrence | T/E | T | - | | | | | | | | | | | | | - | - | - | - |
| 535 | Wetland | Maritime holly forest | Vulnerable Occurrence | | | - | | | | | | | | | | | | | - | - | - | - |
| 539 | Upland | Coastal dune woodland | Vulnerable Occurrence | | | - | | | | | | | | | | | | | - | - | - | - |

REPTILES & AMPHIBIANS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Hatch | Interst | Juveniles | Adults |
|--------|------------|-------------------------|-----------------------|-----|---|--------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|----------|---------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 550 | Turtle | Common snapping turtle | Nesting | | | - | | | | | | | | | | | | | Jun-Jul | Apr-Nov* | - | - | Jun-Jul |
| 553 | Turtle | Eastern box turtle | Vulnerable Occurrence | C/C | | Thermal Regulation | | | | | | | | | | | | | Jun-Jul | Apr-Nov* | - | - | Jul-Sep |
| 563 | Turtle | Eastern box turtle | Nesting | C/C | | - | | | | | | | | | | | | | Jun-Jul | Apr-Nov* | - | - | Jun-Jul |
| 564 | Turtle | Eastern box turtle | General Distribution | C/C | | Present And Active | | | | | | | | | | | | | Jun-Jul | Apr-Nov* | - | Apr-Nov | Apr-Nov |
| 565 | Turtle | Spotted turtle | Nesting | C/C | | - | | | | | | | | | | | | | Apr-Jun | Mar-Nov* | - | - | Jun-Jul |
| 568 | Amphibian | Fowler's toad | Nesting | -/C | | - | | | | | | | | | | | | | Apr-Jun | May-Jul | - | - | Apr-Jun |
| 569 | Turtle | Spotted turtle | General Distribution | C/C | | Present And Active | | | | | | | | | | | | | - | - | - | Mar-Nov | Mar-Nov |
| 571 | Turtle | Eastern box turtle | Vulnerable Occurrence | C/C | | Thermal Regulation | | | | | | | | | | | | | - | - | - | - | Jul-Sep |
| | Turtle | Spotted turtle | General Distribution | C/C | | Present And Active | | | | | | | | | | | | | - | - | - | Mar-Nov | Mar-Nov |
| 575 | Turtle | N. diamondback terrapin | Nesting | | | - | | | | | | | | | | | | | Jun-Jul | Apr-Nov* | - | - | Jun-Jul |
| 603 | Turtle | Eastern box turtle | Vulnerable Occurrence | C/C | | - | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov |
| 612 | Snake | Rare snake | Nesting | C/C | | - | | | | | | | | | | | | | Jun-Jul | Aug-Sep | - | - | Jun-Jul |
| | Turtle | Eastern box turtle | General Distribution | C/C | | Present And Active | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov |
| | Turtle | Eastern box turtle | Nesting | C/C | | - | | | | | | | | | | | | | Jun-Jul | Apr-Nov* | - | - | Jun-Jul |
| 613 | Snake | Rare snake | Nesting | C/C | | - | | | | | | | | | | | | | Jun-Jul | Aug-Sep | - | - | Jun-Jul |
| | Turtle | Eastern box turtle | General Distribution | C/C | | Present And Active | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov |
| | Turtle | Eastern box turtle | Nesting | C/C | | - | | | | | | | | | | | | | Jun-Jul | Apr-Nov* | - | - | Jun-Jul |
| | Turtle | N. diamondback terrapin | Nesting | | | High | | | | | | | | | | | | | Jun-Jul | Apr-Nov* | - | - | Jun-Jul |
| 615 | Snake | Rare snake | Nesting | C/C | | - | | | | | | | | | | | | | Jun-Jul | Apr-Nov* | - | - | Jun-Jul |
| 616 | Turtle | Eastern mud turtle | Nesting | E/- | | - | | | | | | | | | | | | | Jun-Jul | Aug-Sep | - | - | Jun-Jul |
| | Turtle | Painted turtle | Nesting | | | - | | | | | | | | | | | | | Jun-Jul | Aug-Sep | - | - | Jun-Jul |
| 617 | Turtle | Common snapping turtle | Nesting | | | - | | | | | | | | | | | | | Jun-Jul | Apr-Nov* | - | - | Jun-Jul |
| | Turtle | Eastern mud turtle | Nesting | E/- | | - | | | | | | | | | | | | | Jun-Jul | Apr-Nov* | - | - | Jun-Jul |
| | Turtle | Painted turtle | Nesting | | | - | | | | | | | | | | | | | Jun-Jul | Aug-Sep | - | - | Jun-Jul |
| | Turtle | Spotted turtle | Nesting | C/C | | - | | | | | | | | | | | | | Jun-Jul | Mar-Nov* | - | - | Jun-Jul |
| 618 | Turtle | N. diamondback terrapin | Nesting | | | High | | | | | | | | | | | | | Jun-Jul | Apr-Nov* | - | - | Jun-Jul |

INVERTEBRATES



| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------|------------|------------------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 625 | Insect | Monarch butterfly | Migration | | | High | | | | | | | | | | | | | - | - | - | - | Aug-Oct |
| 641 | Crab | Horseshoe crab | Spawning Area | | | High | | | | | | | | | | | | | May-Jun | May-Jul | - | - | May-Jun |
| 669 | Bivalve | Softshell clam | Concentration Area | | | Historic | | | | | | | | | | | | | May-Oct | May-Oct | May-Oct | Jan-Dec | Jan-Dec |
| 671 | Insect | H. necked tiger beetle | Vulnerable Occurrence | -/E | T | - | | | | | | | | | | | | | Apr-Jun | Apr-Jun | Jan-Dec | - | Jan-Dec |
| | Insect | NE beach tiger beetle | Vulnerable Occurrence | | | - | | | | | | | | | | | | | - | - | Jan-Dec | Jan-Dec | Jan-Dec |

MARINE MAMMALS


| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Mating | Calving | Pupping | Molt |
|--------|------------|-------------|--------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|--------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 688 | Pinniped | Seals | Concentration Area | | | High | | | | | | | | | | | | | - | - | - | - |
| 690 | Pinniped | Gray seal | Haul Out | | | Few | | | | | | | | | | | | | - | - | - | - |
| | Pinniped | Harbor seal | Haul Out | | | 80 | | | | | | | | | | | | | - | - | - | - |
| | Pinniped | Harp seal | Haul Out | | | Few | | | | | | | | | | | | | - | - | - | - |
| 691 | Pinniped | Gray seal | Haul Out | | | Few | | | | | | | | | | | | | - | - | - | - |
| | Pinniped | Harbor seal | Haul Out | | | 10 | | | | | | | | | | | | | - | - | - | - |
| | Pinniped | Harp seal | Haul Out | | | Few | | | | | | | | | | | | | - | - | - | - |
| 692 | Pinniped | Gray seal | Haul Out | | | Occasional | | | | | | | | | | | | | - | - | - | - |
| | Pinniped | Harbor seal | Haul Out | | | Occasional | | | | | | | | | | | | | - | - | - | - |
| | Pinniped | Harp seal | Haul Out | | | Occasional | | | | | | | | | | | | | - | - | - | - |

WIDESPREAD IN MAPPED AREA (> 10 SQUARE KILOMETERS)


BIRDS

| Subelement | Species | Mapping Qualifier | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt | | |
|---|------------------------|----------------------|------------------|---|---------------|---|---|---|---|---|---|---|---|---|------|---------|---------|------|---|---|
| | | | S | F | Concentration | J | F | M | A | M | J | J | A | S | | | | | O | N |
|  | Gull/Tern | General Distribution | T/C | | Present | | | | | | | | | | | | | - | - | - |
|  | American black duck | Wintering | | | 100S | | | | | | | | | | | | | - | - | - |
| | Brant | Wintering | | | 100S | | | | | | | | | | | | | - | - | - |
| | Bufflehead | Wintering | | | 100S | | | | | | | | | | | | | - | - | - |
| | Canada goose | Wintering | | | 100S | | | | | | | | | | | | | - | - | - |
| | Canvasback | Wintering | | | 100S | | | | | | | | | | | | | - | - | - |
| | Red-breasted merganser | Wintering | | | 100S | | | | | | | | | | | | | - | - | - |
| | Scaup | Wintering | | | 10000S | | | | | | | | | | | | | - | - | - |

FISH

| Subelement | Species | Mapping Qualifier | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults | | |
|---|-------------------|----------------------|------------------|---|---------------|---|---|---|---|---|---|---|---|---|-------|------|--------|-----------|--------|----------|---------|
| | | | S | F | Concentration | J | F | M | A | M | J | J | A | S | | | | | | O | N |
|  | Atlantic sturgeon | Concentration Area | -/E | E | High | | | | | | | | | | | | | - | - | May-Nov* | - |
| | Atlantic sturgeon | General Distribution | -/E | E | Rare | | | | | | | | | | | | | - | - | Jan-Dec | Jan-Dec |
| | Atlantic sturgeon | General Distribution | -/E | E | Low | | | | | | | | | | | | | - | - | Jan-Dec | Oct-Jun |
| | Atlantic sturgeon | General Distribution | -/E | E | Medium | | | | | | | | | | | | | - | - | Jan-Dec | Oct-Jun |
| | Atlantic sturgeon | Migration | -/E | E | High | | | | | | | | | | | | | - | - | May-Jul | May-Jul |

REPTILES & AMPHIBIANS

| Subelement | Species | Mapping Qualifier | S | | F | | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Hatch | Internest | Juveniles | Adults |
|---|------------------------|----------------------|-----|---|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|-----------|-----------|--------|
| | | | T/T | J | T | E | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Green sea turtle | General Distribution | | | - | | | | | | | | | | | | | - | - | May-Nov | May-Nov | May-Nov | | |
| | K. ridley sea turtle | General Distribution | | | - | | | | | | | | | | | | | - | - | May-Nov | May-Nov | - | | |
| | Leatherback sea turtle | General Distribution | | | - | | | | | | | | | | | | | - | - | May-Nov | May-Nov | May-Nov | | |
| | Loggerhead sea turtle | General Distribution | | | - | | | | | | | | | | | | | - | - | May-Nov | May-Nov | May-Nov | | |

INVERTEBRATES

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | Spawn | Eggs | Larvae | Juveniles | Adults |
|------------|-----------------|--------------------|---|---|---------------|-------------------------|---------|---------|---------|-----------|---------|
| Bivalve | Northern quahog | Concentration Area | | | Historic | J F M A M J J A S O N D | Jun-Sep | Jun-Sep | Jun-Sep | Jan-Dec | Jan-Dec |

MARINE MAMMALS

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | Mating | Calving | Pupping | Molt |
|------------|------------------|----------------------|-----|---|-------------------|-------------------------|--------|---------|---------|------|
| Whale | Fin whale | General Distribution | E/E | E | Common | J F M A M J J A S O N D | | - | - | - |
| | Humpback whale | General Distribution | E/E | E | Common | J F M A M J J A S O N D | | - | - | - |
| | N.A. right whale | General Distribution | E/E | E | Uncommon, Regular | J F M A M J J A S O N D | | - | - | - |

ALSO PRESENT IN MAPPED AREA (GENERAL DISTRIBUTION)

BIRDS

| Subelement | Species | Monthly Presence | Nest | Mig.(S) | Mig.(F) | Molt |
|------------|----------------------|-------------------------|------|---------|---------|------|
| Alcid | Razorbill | J F M A M J J A S O N D | - | - | - | - |
| Gull/Tern | Bonaparte's gull | J F M A M J J A S O N D | - | - | - | - |
| | G. black-backed gull | J F M A M J J A S O N D | - | - | - | - |
| | Herring gull | J F M A M J J A S O N D | - | - | - | - |
| | Laughing gull | J F M A M J J A S O N D | - | - | - | - |
| Pelagic | Northern gannet | J F M A M J J A S O N D | - | - | - | - |
| Waterfowl | Black scoter | J F M A M J J A S O N D | - | - | - | - |
| | Common eider | J F M A M J J A S O N D | - | - | - | - |
| | Long-tailed duck | J F M A M J J A S O N D | - | - | - | - |
| | Surf scoter | J F M A M J J A S O N D | - | - | - | - |
| | Waterfowl | J F M A M J J A S O N D | - | - | - | - |
| | White-winged scoter | J F M A M J J A S O N D | - | - | - | - |


FISH

| Subelement | Species | Monthly Presence | Spawn | Eggs | Larvae | Juveniles | Adults |
|-------------------|------------------|-------------------------|-------|------|---------|-----------|---------|
| Diadromous | Alewife | J F M A M J J A S O N D | - | - | - | Jan-Dec | Feb-Jun |
| | Alewife | J F M A M J J A S O N D | - | - | - | Nov-Apr | Nov-Apr |
| | Alewife | J F M A M J J A S O N D | - | - | Jun-Jul | Apr-Nov | Mar-Jun |
| | American eel | J F M A M J J A S O N D | - | - | Jan-Feb | - | Sep-Dec |
| | American eel | J F M A M J J A S O N D | - | - | Apr-Aug | Jan-Dec | Sep-Nov |
| | American shad | J F M A M J J A S O N D | - | - | - | Nov-Apr | Nov-Apr |
| | American shad | J F M A M J J A S O N D | - | - | - | Apr-Jun | Apr-May |
| | Blueback herring | J F M A M J J A S O N D | - | - | - | May-Nov | Mar-Jul |
| | Blueback herring | J F M A M J J A S O N D | - | - | May-Jun | May-Nov | Mar-Jul |
| | Blueback herring | J F M A M J J A S O N D | - | - | - | Nov-Apr | Nov-Apr |
| | Striped bass | J F M A M J J A S O N D | - | - | - | Mar-Nov | Mar-Nov |
| | Striped bass | J F M A M J J A S O N D | - | - | - | Jan-Dec | Jan-Dec |
| Estuarine Nursery | Atlantic croaker | J F M A M J J A S O N D | - | - | Sep-Nov | Jul-Nov | Jul-Nov |
| | Atlantic croaker | J F M A M J J A S O N D | - | - | - | - | Jun-Dec |

FISH (continued)

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------------------|---------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|----------|----------|----------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| | Atlantic herring | | | | | | | | | | | | | - | - | - | Nov-May | Nov-May |
| | Atlantic herring | | | | | | | | | | | | | - | - | Apr-May | Jan-May | Jan-May |
| | Atlantic menhaden | | | | | | | | | | | | | - | - | Apr-Jul | Apr-Nov | May-Nov |
| | Atlantic menhaden | | | | | | | | | | | | | Sep-Dec | Sep-Dec | Oct-Dec | Oct-Apr | Oct-Apr |
| | Bay anchovy | | | | | | | | | | | | | May-Oct* | May-Oct* | May-Oct* | Apr-Nov | Apr-Nov |
| | Bay anchovy | | | | | | | | | | | | | May-Nov | May-Nov | May-Dec | Jan-Dec | Jan-Dec |
| | Bay anchovy | | | | | | | | | | | | | May-Aug | May-Aug | Jun-Sep | Jul-Mar | Jan-Dec |
| | Bay anchovy | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jul-Dec | May-Nov |
| | Black drum | | | | | | | | | | | | | - | - | - | Jul-Nov | Jul-Nov |
| | Black drum | | | | | | | | | | | | | - | - | - | - | Mar-Oct |
| | Black sea bass | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov |
| | Black sea bass | | | | | | | | | | | | | May-Oct | May-Oct | May-Nov | Mar-Nov | Mar-Nov |
| | Bluefish | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Bluefish | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | Northern kingfish | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Northern kingfish | | | | | | | | | | | | | - | - | - | Jun-Nov | Jun-Nov |
| | Northern kingfish | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | Northern puffer | | | | | | | | | | | | | May-Aug | Jun-Oct | Jun-Oct | May-Oct | May-Oct |
| | Scup | | | | | | | | | | | | | - | - | - | Apr-Dec | Apr-Dec |
| | Scup | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Scup | | | | | | | | | | | | | Jul | Jul | Jul | Jun-Oct | Jun-Oct |
| | Spot | | | | | | | | | | | | | - | - | - | Jun-Nov | Jun-Nov |
| | Spot | | | | | | | | | | | | | - | - | - | Sep-Nov | Jun-Nov |
| | Summer flounder | | | | | | | | | | | | | Sep-Nov | Sep-Nov | Sep-Dec | Apr-Nov | Apr-Nov |
| | Summer flounder | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Weakfish | | | | | | | | | | | | | Jun-Aug | Jun-Aug | Jun-Aug | Jun-Nov | May-Dec |
| | Weakfish | | | | | | | | | | | | | Apr-Sep | Apr-Sep | May-Sep | Apr-Nov | Apr-Nov |
| | White perch | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | White perch | | | | | | | | | | | | | May-Jun | May-Jun | May-Jun | Jan-Dec | Jan-Dec |
| | Windowpane | | | | | | | | | | | | | - | - | Apr-Nov | Jan-Dec | Jan-Dec |
| | Windowpane | | | | | | | | | | | | | Mar-Nov* | Mar-Nov* | Apr-Nov* | Jan-Dec | Jan-Dec |
| | Windowpane | | | | | | | | | | | | | Apr-Jul | Apr-Jul | Apr-Oct | Jan-Dec | Jan-Dec |
| | Winter flounder | | | | | | | | | | | | | Nov-Apr | Nov-Apr | Nov-May | Jan-Dec | Oct-Jun |
| | Winter flounder | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Atlantic silverside | | | | | | | | | | | | | - | - | - | Jan-Apr | Jan-Apr |
| Estuarine Resident | Killifish | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | Northern pipefish | | | | | | | | | | | | | May-Jul | - | May-Aug | Apr-Dec | Apr-Dec |
| | Silversides | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | American sand lance | | | | | | | | | | | | | - | - | - | - | Oct-Jun |
| Marine Benthic | American sand lance | | | | | | | | | | | | | Nov-Apr | Nov-Apr | Nov-Apr | Nov-Apr | Nov-Apr |
| | American sand lance | | | | | | | | | | | | | - | - | Nov-Apr | Nov-Apr | Nov-Apr |
| | Atlantic cod | | | | | | | | | | | | | - | - | - | Nov-Apr | Nov-Apr |
| | Atlantic cod | | | | | | | | | | | | | - | - | - | Nov-Apr | - |
| | Atlantic tomcod | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |





FISH (continued)

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|-------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|----------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| | Atlantic tomcod | | | | | | | | | | | | | Dec-Feb | Dec-Mar | Jan-Aug | Jan-Dec | Jan-Dec |
| | Clearnose skate | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov |
| | Goosefish | | | | | | | | | | | | | - | - | - | - | Jan-Jun |
| | Little skate | | | | | | | | | | | | | Jan-Dec | Jan-Dec | - | Jan-Dec | Jan-Dec |
| | Ocean pout | | | | | | | | | | | | | - | - | - | Dec-Aug | Dec-Aug |
| | Pollock | | | | | | | | | | | | | - | - | - | Mar-Jun | - |
| | Red hake | | | | | | | | | | | | | Jun-Sep | Jun-Sep | Jul-Oct | Jan-Dec | Jan-Dec |
| | Red hake | | | | | | | | | | | | | - | - | - | Nov-May | Nov-May |
| | Silver hake | | | | | | | | | | | | | May-Oct | May-Oct | May-Oct | Jan-Dec | Jan-Dec |
| | Smooth dogfish | | | | | | | | | | | | | May-Jun | May-Oct | - | Apr-Oct | Apr-Oct |
| | Tautog | | | | | | | | | | | | | - | Jun | Jun | Apr-Dec | Apr-Nov |
| | Tautog | | | | | | | | | | | | | May-Aug | May-Aug | Jun-Aug | Mar-Nov | Mar-Nov |
| | Tautog | | | | | | | | | | | | | May | May | May | Jan-Dec | Apr-Nov |
| | Tautog | | | | | | | | | | | | | May-Aug | May-Aug | Jun-Aug | Jan-Dec | Jan-Dec |
| | Winter skate | | | | | | | | | | | | | - | - | - | Sep-May | Sep-Nov |
|  | Atlantic mackerel | | | | | | | | | | | | | - | - | - | Nov-Apr* | Nov-Apr* |
| | Atlantic mackerel | | | | | | | | | | | | | - | - | - | Apr-Nov* | Apr-Nov* |
| | Bluefin tuna | | | | | | | | | | | | | - | - | - | Jun-Sep | - |
| | Butterfish | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov |
| | Butterfish | | | | | | | | | | | | | May-Aug | May-Aug | May-Oct | May-Dec | May-Dec |
| | Dusky shark | | | | | | | | | | | | | - | - | - | May-Sep | May-Sep |
| | Sand tiger | | | | | | | | | | | | | - | - | - | Jun-Oct | - |
| | Sandbar shark | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Shortfin mako | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Skipjack tuna | | | | | | | | | | | | | - | - | - | Jun-Sep | Jun-Sep |
| | Spiny dogfish | | | | | | | | | | | | | - | - | - | Oct-Apr | Oct-Apr |
| | Thresher shark | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | Tiger shark | | | | | | | | | | | | | - | - | - | Jul-Oct | - |


REPTILES & AMPHIBIANS

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Nest | Hatch | Internest | Juveniles | Adults |
|---|-------------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|-------|-----------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | N. diamondback terrapin | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov |

INVERTEBRATES

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Eggs | Larvae | Juveniles | Adults |
|---|-------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|----------|----------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Bivalve | | | | | | | | | | | | | Jun-Oct* | Jun-Oct* | Jan-Dec | Jan-Dec |
| | Atlantic surfclam | | | | | | | | | | | | | Jun-Oct* | Jun-Oct* | Jan-Dec | Jan-Dec |
| | Blue mussel | | | | | | | | | | | | | Apr-Nov | Apr-Nov | Jan-Dec | Jan-Dec |
| | Northern quahog | | | | | | | | | | | | | Jun-Sep | Jun-Sep | Jan-Dec | Jan-Dec |
|  | Cephalopod | | | | | | | | | | | | | May-Oct | May-Oct | Jan-Dec | Jan-Dec |
| | Softshell clam | | | | | | | | | | | | | - | - | - | Jan-Dec |
|  | Crab | | | | | | | | | | | | | Jun-Oct | Jun-Oct | Jan-Dec | Jan-Dec |
| | Longfin squid | | | | | | | | | | | | | May-Oct | May-Oct | Jan-Dec | Jan-Dec |
| | Blue crab | | | | | | | | | | | | | May-Oct | May-Oct | Jan-Dec | Jan-Dec |
| | Blue crab | | | | | | | | | | | | | May-Oct | May-Oct | Jan-Dec | Jan-Dec |
| | Blue crab | | | | | | | | | | | | | - | Jun-Oct | - | Aug-Mar |
| | Horseshoe crab | | | | | | | | | | | | | - | - | Jan-Dec | Jan-Dec |
|  | Lobster | | | | | | | | | | | | | - | - | Aug-Mar | Aug-Mar |
| | Horseshoe crab | | | | | | | | | | | | | - | - | Jan-Dec | Jan-Dec |
| | American lobster | | | | | | | | | | | | | - | - | Jan-Dec | Jan-Dec |
| | American lobster | | | | | | | | | | | | | Jun-Sep | Jun-Sep | Jan-Dec | Jan-Dec |

MARINE MAMMALS

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Mating | Calving | Pupping | Molt |
|---|--------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|--------|---------|---------|------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Dolphin | | | | | | | | | | | | | - | - | - | - |
| | Bottlenose dolphin | | | | | | | | | | | | | - | - | - | - |
| | Harbor porpoise | | | | | | | | | | | | | - | - | - | - |

For additional information about species locations and extent, reference the underlying GIS data available from response.restoration.noaa.gov

SHORELINE RESOURCES

ESI POLYGON HABITAT TYPES

| ESI Rank | Habitat Classification | Area (Acres) | Area (Sq. Miles) |
|----------|---------------------------------|--------------|------------------|
| 10A | Salt and Brackish Water Marshes | 54.20 | 0.08 |
| 10B | Freshwater Marshes | 0.89 | 0.00 |
| 10C | Swamps | 256.72 | 0.40 |
| 10D | Scrub and Shrub Wetlands | 80.28 | 0.13 |
| 9A | Sheltered Tidal Flats | 20.08 | 0.03 |
| 7 | Exposed Tidal Flats | 49.38 | 0.08 |

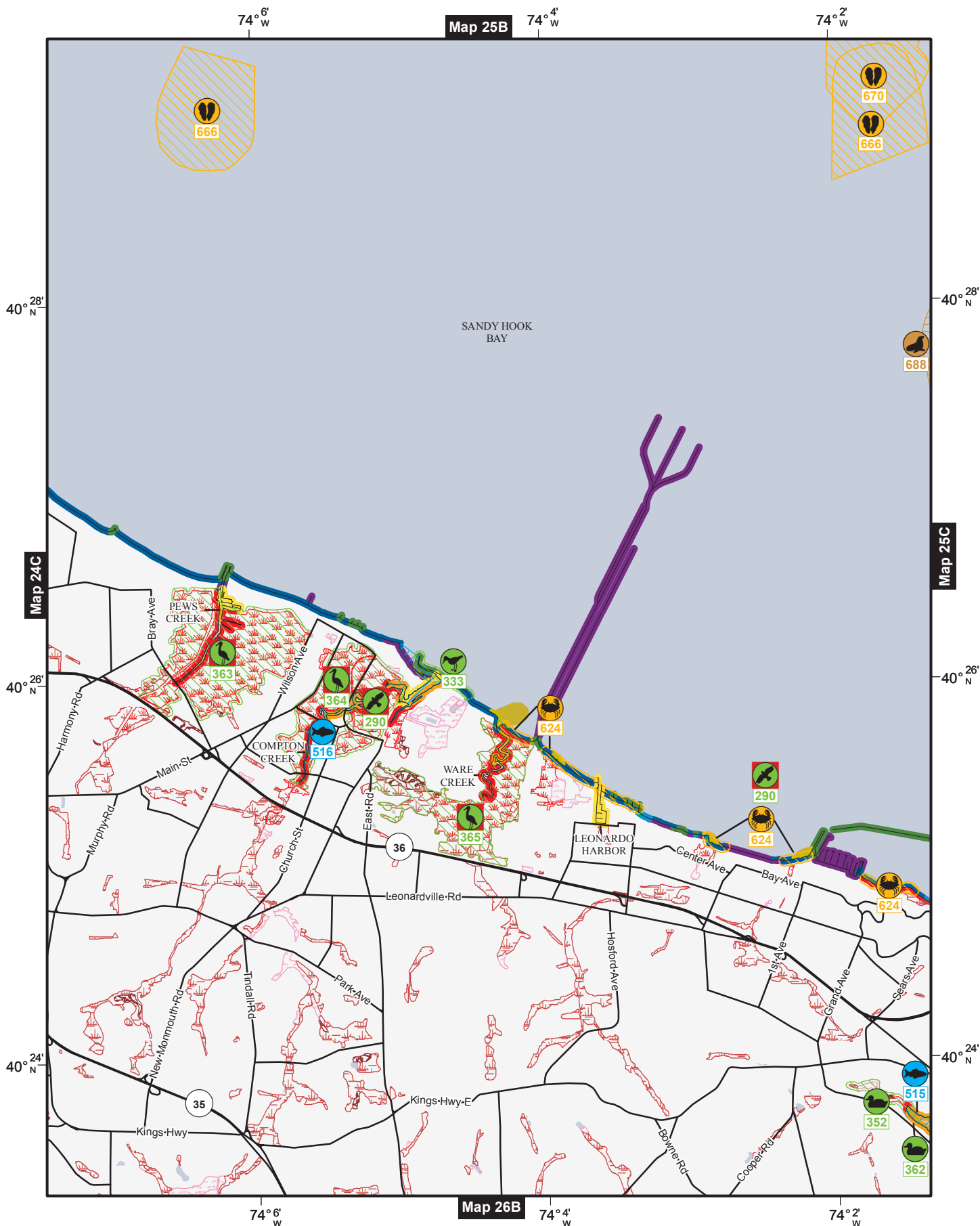
ESI SHORELINE HABITAT TYPES

| ESI Rank | Shoreline Habitat Classification | Length (Meters) | Length (Miles) | % of ESI Shoreline |
|----------------------|--------------------------------------|-----------------|----------------|--------------------|
| 10A | Salt and Brackish Water Marshes | 5,152.37 | 3.20 | 7% |
| 10C | Swamps | 290.79 | 0.18 | < 1% |
| 9A | Sheltered Tidal Flats | 3,232.64 | 2.01 | 5% |
| 9B | Vegetated Low Banks | 5,259.79 | 3.27 | 7% |
| 8B | Sheltered, Solid Man-Made Structures | 5,029.34 | 3.13 | 7% |
| 8C | Sheltered Riprap | 301.00 | 0.19 | < 1% |
| 7 | Exposed Tidal Flats | 4,886.36 | 3.04 | 7% |
| 6B | Riprap | 6,933.38 | 4.31 | 10% |
| 5 | Mixed Sand and Gravel Beaches | 41.08 | 0.03 | < 1% |
| 4 | Coarse Grained Sand Beaches | 3,771.55 | 2.34 | 5% |
| 3A | Fine to Medium Grained Sand Beaches | 32,125.74 | 19.96 | 45% |
| 1B | Exposed, Solid Man-Made Structures | 4,722.83 | 2.93 | 7% |
| Total ESI Shoreline: | | 71,746.88 | 44.58 | |
| Total Shoreline: | | 51,813.94 | 32.20 | |

Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov

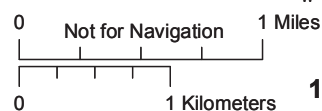




Map 25D
NY/ NJ Metropolitan Area



SEE BACK OF MAP
 for details about mapped species and other
 species that occur in the mapped area.
 Data Published: February 2016



1:50,000

Map 25D
New York and New Jersey Metropolitan Area

BIOLOGICAL RESOURCES

Note: An asterisk (*) indicates that life stage occurs in this range but not in all months included

DISPLAYED ON MAP

BIRDS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration 1 Pair | Monthly Presence | | | | | | | | | | | | Nest Apr-Jul | Mig.(S) Mar-May | Mig.(F) Aug-Oct | Molt |
|--------|------------|-------------------|--------------------|-----|---|-------------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|-----------------|--------------------|--------------------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 290 | Raptor | Threatened raptor | Nesting | -/T | | | | | | | | | | | | | | | | | | |
| 333 | Shorebird | Shorebirds | Migration | | | High | | | | | | | | | | | | | | | | |
| 352 | Waterfowl | Brant | Wintering | | | - | | | | | | | | | | | | | | | | |
| | Waterfowl | Bufflehead | Wintering | | | - | | | | | | | | | | | | | | | | |
| | Waterfowl | Canada goose | Wintering | | | - | | | | | | | | | | | | | | | | |
| | Waterfowl | Common merganser | Wintering | | | - | | | | | | | | | | | | | | | | |
| | Waterfowl | Ruddy duck | Wintering | | | - | | | | | | | | | | | | | | | | |
| | Waterfowl | Scaup | Wintering | | | - | | | | | | | | | | | | | | | | |
| | Waterfowl | Waterfowl | Wintering | | | - | | | | | | | | | | | | | | | | |
| 362 | Waterfowl | Canada goose | Wintering | | | 1000S | | | | | | | | | | | | | | | | |
| | Waterfowl | Common merganser | Wintering | | | 1000S | | | | | | | | | | | | | | | | |
| | Waterfowl | Ruddy duck | Wintering | | | 1000S | | | | | | | | | | | | | | | | |
| | Waterfowl | Scaup | Wintering | | | 1000S | | | | | | | | | | | | | | | | |
| | Waterfowl | Waterfowl | Wintering | | | 1000S | | | | | | | | | | | | | | | | |
| 363 | Wading | BC night-heron | Concentration Area | -/T | | 1 | | | | | | | | | | | | | | | | |
| | Wading | Glossy ibis | Concentration Area | -/C | | 2 | | | | | | | | | | | | | | | | |
| | Wading | Great egret | Concentration Area | | | 13 | | | | | | | | | | | | | | | | |
| | Wading | Green heron | Concentration Area | | | 2 | | | | | | | | | | | | | | | | |
| | Wading | YC night-heron | Concentration Area | -/T | | 5 | | | | | | | | | | | | | | | | |
| 364 | Wading | BC night-heron | Concentration Area | -/T | | 4 | | | | | | | | | | | | | | | | |
| | Wading | Great blue heron | Concentration Area | -/C | | 8 | | | | | | | | | | | | | | | | |
| | Wading | Great egret | Concentration Area | | | 23 | | | | | | | | | | | | | | | | |
| | Wading | Little blue heron | Concentration Area | -/C | | 8 | | | | | | | | | | | | | | | | |
| | Wading | Snowy egret | Concentration Area | -/C | | 2 | | | | | | | | | | | | | | | | |
| | Wading | YC night-heron | Concentration Area | -/T | | 3 | | | | | | | | | | | | | | | | |
| 365 | Wading | Glossy ibis | Concentration Area | -/C | | 23 | | | | | | | | | | | | | | | | |
| | Wading | Great egret | Concentration Area | | | 2 | | | | | | | | | | | | | | | | |

FISH

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn Mar-Jun | Eggs Mar-Jun | Larvae Jun-Aug | Juveniles Aug-Oct | Adults Mar-Jun |
|--------|------------|------------------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------------------|-----------------|-------------------|----------------------|-------------------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 515 | Diadromous | Alewife | Migration | | | - | | | | | | | | | | | | | | | | | Mar-Jun |
| | Diadromous | Blueback herring | Migration | | | - | | | | | | | | | | | | | | | | | Mar-Jun |
| 516 | Diadromous | Alewife | Nursery Area | | | - | | | | | | | | | | | | | | | | | Aug-Oct |
| | Diadromous | Alewife | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | | | | Mar-Jun |

INVERTEBRATES


| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Larvae | Juveniles | Adults |
|--------|------------|-------------------|--------------------|----------|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|--------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | |
| 624 | Crab | Horseshoe crab | Spawning Area | - | - | - | | | | | | | | | | | | | | | May-Jun |
| 666 | Bivalve | Blue mussel | Concentration Area | Historic | - | - | | | | | | | | | | | | | | | Jan-Dec |
| 670 | Bivalve | Atlantic surfclam | Concentration Area | Historic | - | - | | | | | | | | | | | | | | | Jan-Dec |

MARINE MAMMALS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Mating | Calving | Pupping | Molt |
|--------|------------|---------|--------------------|------|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|--------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 688 | Pinniped | Seals | Concentration Area | High | - | - | | | | | | | | | | | | | | | | - |

WIDESPREAD IN MAPPED AREA (> 10 SQUARE KILOMETERS)


BIRDS

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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|  | Diving | D. crested cormorant | Wintering | | High | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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|  | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | Diadromous | Atlantic sturgeon | General Distribution | -/E | E | Rare | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

REPTILES & AMPHIBIANS

| Subelement | Species | Mapping Qualifier | Monthly Presence | | | | | | | | | | | | Nest | Hatch | Internest | Juveniles | Adults |
|---|------------------------|----------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|-------|-----------|-----------|---------|
| | | | | | | | | | | | | | | | | | | | |
| | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Green sea turtle | General Distribution | T/T | T | - | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | K. ridley sea turtle | General Distribution | E/E | E | - | | | | | | | | | | - | - | - | May-Nov | - |
| | Leatherback sea turtle | General Distribution | E/E | E | - | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | Loggerhead sea turtle | General Distribution | T/E | T | - | | | | | | | | | | - | - | - | May-Nov | May-Nov |

INVERTEBRATES

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|-----------------|--------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Northern quahog | Concentration Area | | | Historic | | | | | | | | | | | | | Jun-Sep | Jun-Sep | Jun-Sep | Jan-Dec | Jan-Dec |
| | Softshell clam | Concentration Area | | | Historic | | | | | | | | | | | | | May-Oct | May-Oct | May-Oct | Jan-Dec | Jan-Dec |

MARINE MAMMALS



| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Mating | Calving | Pupping | Molt |
|---|----------------|----------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|--------|---------|---------|------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Humpback whale | General Distribution | | | Common | | | | | | | | | | | | | - | - | - | - |

ALSO PRESENT IN MAPPED AREA (GENERAL DISTRIBUTION)

BIRDS





| Subelement | Species | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|---|--------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|---------|---------|------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Black scoter | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | | | | | | | | | | | | | - | - | - | - |

FISH




| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--|-------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|----------|----------|----------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Alewife | | | | | | | | | | | | | - | - | Jun-Jul | Apr-Nov | Mar-Jun |
| | Alewife | | | | | | | | | | | | | - | - | - | Jan-Dec | Feb-Jun |
| | American eel | | | | | | | | | | | | | - | - | - | Jan-Dec | Sep-Nov |
| | American eel | | | | | | | | | | | | | - | - | Apr-Aug | Jan-Dec | Sep-Nov |
| | American shad | | | | | | | | | | | | | - | - | - | Apr-Jun | Apr-May |
| | Blueback herring | | | | | | | | | | | | | - | - | May-Jun | May-Nov | Mar-Jul |
| | Blueback herring | | | | | | | | | | | | | - | - | - | May-Nov | Mar-Jul |
| | Striped bass | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
|  | Atlantic croaker | | | | | | | | | | | | | - | - | Sep-Nov | Jul-Nov | Jan-Nov |
| | Atlantic herring | | | | | | | | | | | | | - | - | Apr-May | Jan-May | Jan-May |
| | Atlantic menhaden | | | | | | | | | | | | | - | - | Apr-Jul | Apr-Nov | May-Nov |
| | Atlantic menhaden | | | | | | | | | | | | | May-Oct* | May-Oct* | May-Oct* | Apr-Nov | Apr-Nov |
| | Bay anchovy | | | | | | | | | | | | | May-Aug | May-Aug | Jun-Sep | Jul-Mar | Jan-Dec |
| | Bay anchovy | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jul-Dec | May-Nov |
| | Black drum | | | | | | | | | | | | | - | - | - | Jul-Nov | Jul-Nov |
| | Black sea bass | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov |
| | Bluefish | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Northern kingfish | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | Northern kingfish | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Northern puffer | | | | | | | | | | | | | May-Aug | Jun-Oct | Jun-Oct | May-Oct | May-Oct |
| | Scup | | | | | | | | | | | | | Jul | Jul | Jul | Jun-Oct | Jun-Oct |
| | Scup | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Spot | | | | | | | | | | | | | - | - | - | Jun-Nov | Jun-Nov |
| | Summer flounder | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Weakfish | | | | | | | | | | | | | Jun-Aug | Jun-Aug | Jun-Aug | Jun-Nov | May-Dec |

New York and New Jersey Metropolitan Area: Map 25D


FISH (continued)

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|---------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|----------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | White perch | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | White perch | | | | | | | | | | | | | May-Jun | May-Jun | May-Jun | Jan-Dec | Jan-Dec |
| | Windowpane | | | | | | | | | | | | | Apr-Jul | Apr-Jul | Apr-Oct | Jan-Dec | Jan-Dec |
| | Windowpane | | | | | | | | | | | | | - | - | Apr-Nov | Jan-Dec | Jan-Dec |
| | Winter flounder | | | | | | | | | | | | | Nov-Apr | Nov-Apr | Nov-May | Jan-Dec | Oct-Jun |
|  | Killifish | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | Northern pipefish | | | | | | | | | | | | | May-Jul | - | May-Aug | Apr-Dec | Apr-Dec |
| | Silversides | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | American sand lance | | | | | | | | | | | | | Nov-Apr | Nov-Apr | Nov-Apr | Nov-Apr | Nov-Apr |
| | American sand lance | | | | | | | | | | | | | - | - | Nov-Apr | Nov-Apr | Nov-Apr |
|  | Atlantic cod | | | | | | | | | | | | | - | - | - | Nov-Apr | - |
| | Atlantic tomcod | | | | | | | | | | | | | Dec-Feb | Dec-Mar | Jan-Aug | Jan-Dec | Jan-Dec |
| | Atlantic tomcod | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Pollock | | | | | | | | | | | | | - | - | - | Mar-Jun | - |
| | Red hake | | | | | | | | | | | | | - | - | - | Nov-May | Nov-May |
|  | Smooth dogfish | | | | | | | | | | | | | May-Jun | May-Oct | - | Apr-Oct | Apr-Oct |
| | Tautog | | | | | | | | | | | | | May | May | May | Jan-Dec | Apr-Nov |
| | Tautog | | | | | | | | | | | | | - | Jun | Jun | Apr-Dec | Apr-Nov |
| | Atlantic mackerel | | | | | | | | | | | | | - | - | - | Apr-Nov* | Apr-Nov* |
| | Butterfish | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov |

INVERTEBRATES

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Blue mussel | | | | | | | | | | | | | Apr-Nov | Apr-Nov | Apr-Nov | Jan-Dec | Jan-Dec |
| | Northern quahog | | | | | | | | | | | | | Jun-Sep | Jun-Sep | Jun-Sep | Jan-Dec | Jan-Dec |
| | Softshell clam | | | | | | | | | | | | | May-Oct | May-Oct | May-Oct | Jan-Dec | Jan-Dec |
|  | Blue crab | | | | | | | | | | | | | May-Oct | - | - | Jan-Dec | Jan-Dec |
| | Blue crab | | | | | | | | | | | | | May-Oct | Jun-Oct | Jun-Oct | Jan-Dec | Jan-Dec |
| | Horseshoe crab | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
|  | American lobster | | | | | | | | | | | | | Jun-Sep | Jun-Sep | Jun-Oct | Jan-Dec | Jan-Dec |

MARINE MAMMALS

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Mating | Calving | Pupping | Molt |
|---|--------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|--------|---------|---------|------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Bottlenose dolphin | | | | | | | | | | | | | - | - | - | - |
| | Harbor porpoise | | | | | | | | | | | | | - | - | - | - |

For additional information about species locations and extent, reference the underlying GIS data available from response.restoration.noaa.gov

SHORELINE RESOURCES

ESI POLYGON HABITAT TYPES



| ESI Rank | Habitat Classification | Area (Acres) | Area (Sq. Miles) |
|----------|---------------------------------|--------------|------------------|
| 10A | Salt and Brackish Water Marshes | 605.87 | 0.95 |
| 10B | Freshwater Marshes | 94.16 | 0.15 |
| 10C | Swamps | 567.33 | 0.89 |
| 10D | Scrub and Shrub Wetlands | 28.25 | 0.04 |
| 7 | Exposed Tidal Flats | 22.18 | 0.03 |

ESI SHORELINE HABITAT TYPES

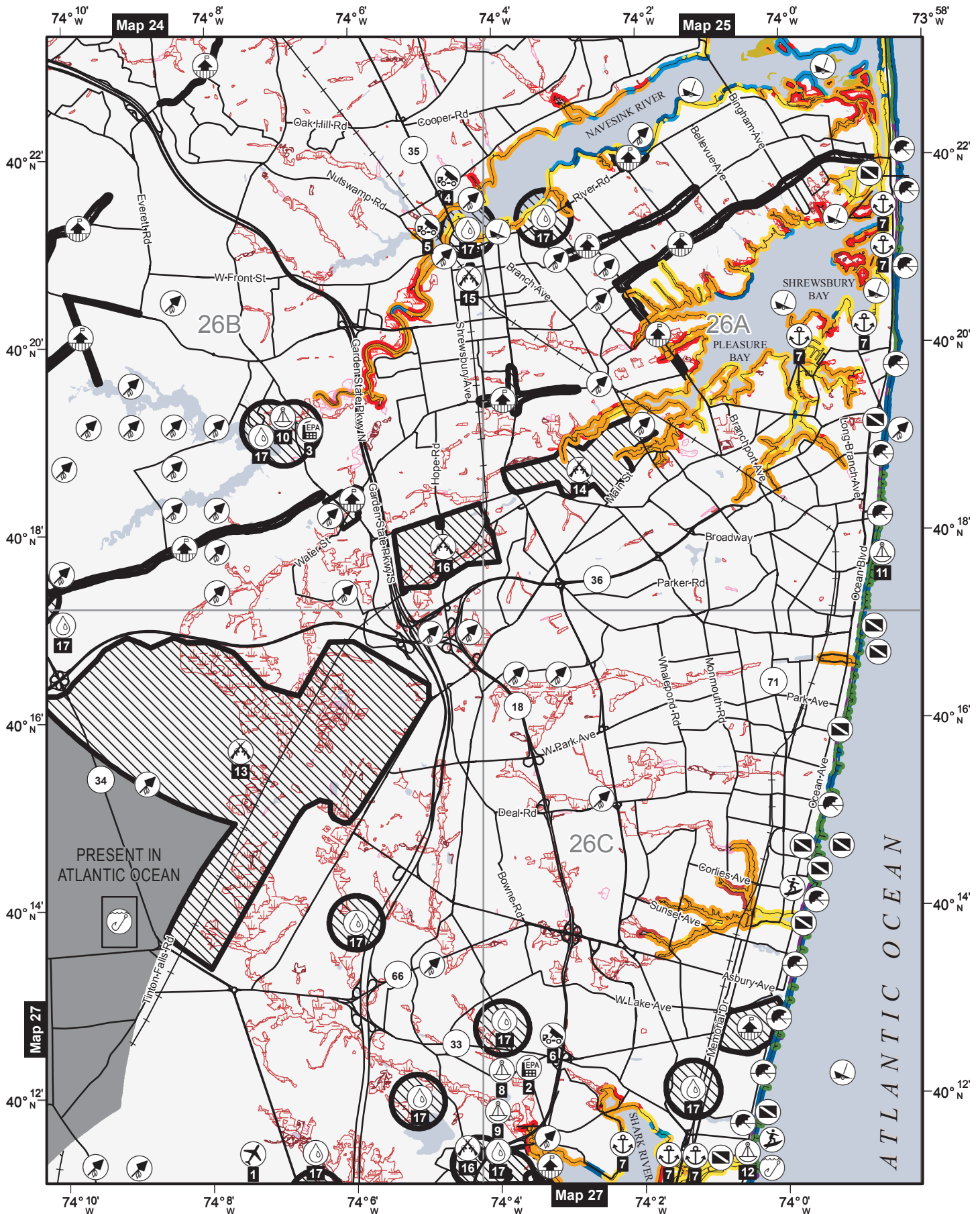
| ESI Rank | Shoreline Habitat Classification | Length (Meters) | Length (Miles) | % of ESI Shoreline |
|----------|--------------------------------------|-----------------|----------------|--------------------|
| 10A | Salt and Brackish Water Marshes | 11,671.18 | 7.25 | 22% |
| 10C | Swamps | 62.91 | 0.04 | < 1% |
| 9B | Vegetated Low Banks | 12,208.88 | 7.59 | 24% |
| 8B | Sheltered, Solid Man-Made Structures | 2,874.00 | 1.79 | 6% |
| 8C | Sheltered Riprap | 53.41 | 0.03 | < 1% |
| 7 | Exposed Tidal Flats | 862.52 | 0.54 | 2% |
| 6B | Riprap | 3,428.07 | 2.13 | 7% |
| 5 | Mixed Sand and Gravel Beaches | 275.63 | 0.17 | 1% |
| 4 | Coarse Grained Sand Beaches | 189.13 | 0.12 | < 1% |
| 3A | Fine to Medium Grained Sand Beaches | 7,809.32 | 4.85 | 15% |
| 1B | Exposed, Solid Man-Made Structures | 12,516.97 | 7.78 | 24% |

Total ESI Shoreline: 51,952.03 Total ESI Shoreline: 32.28
Total Shoreline: 38,059.94 Total Shoreline: 23.65

Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov





Map 26

NY/ NJ Metropolitan Area



SEE BACK OF MAP
for details about mapped resources and
other resources that occur in mapped area.
Data Published: February 2016

0 Not for Navigation 2 Miles
0 2 Kilometers
1:100,000



Map 26
New York and New Jersey Metropolitan Area

HUMAN USE RESOURCES

| DISPLAYED ON MAP (POINTS) | | | |
|--|---------------------------------|---|--------------|
| Map ID | Type | Name | Phone |
| 1 | AIRPORT | MONMOUTH EXECUTIVE | |
| 2 | EPA FACILITY | JUMPING BROOK WATER TREATMENT PLANT | 732-383-1730 |
| 3 | EPA FACILITY | SWIMMING RIVER WATER TREATMENT PLANT | 732-383-1730 |
| 4 | LANDFILL | AVON LANDFILL | |
| 5 | LANDFILL | HOWELL LANDFILL | |
| 6 | LANDFILL | MONMOUTH COUNTY LF - PHASES I, II AND III | |
| 7 | MARINA | MARINA | |
| 8 | REPEATED MEASUREMENT SITE | JUMPING BROOK NEAR NEPTUNE CITY NJ | |
| 9 | REPEATED MEASUREMENT SITE | SHARK RIVER NEAR NEPTUNE CITY NJ | |
| 10 | REPEATED MEASUREMENT SITE | SWIMMING RIVER NEAR RED BANK NJ | |
| 11 | REPEATED MEASUREMENT SITE | MUSSEL WATCH SITE - NYLB | 301-713-3028 |
| 12 | REPEATED MEASUREMENT SITE | MUSSEL WATCH SITE - NYSR | 301-713-3028 |
| DISPLAYED ON MAP (POLYGONS) | | | |
| Map ID | Type | Name | Phone |
| 13 | MILITARY | EARLE NAVAL WEAPONS STATION | |
| 14 | MILITARY | FORT MONMOUTH MILITARY RESERVATION | |
| 15 | MILITARY | MILITARY INSTALLATIONS | |
| 16 | MILITARY | FT MONMOUTH | |
| 17 | WATER INTAKE | WATER INTAKE AREA | |
| ALSO PRESENT IN MAPPED AREA (POINTS) | | | |
| Type | Name | Contact | Phone |
| COAST GUARD | COAST GUARD STATION SHARK RIVER | COMMANDING OFFICER | 732-899-0130 |
| ALSO PRESENT IN MAPPED AREA (POLYGONS) | | | |
| Type | Name | Contact | Phone |
| ESSENTIAL HABITAT | EFH AREA | CHRIS BRUCE | 434-951-0565 |
| ESSENTIAL HABITAT | IMPORTANT BIRD AREA | GYLLA MACGREGOR | |

| JURISDICTIONS | | | |
|---------------|---|-------|-----------|
| COUNTY: | MONMOUTH COUNTY | FEMA: | REGION II |
| COAST GUARD: | DISTRICT 5, SECTOR DELAWARE BAY, SECTOR NEW YORK | EPA: | REGION 2 |
| USACE: | NORTH ATLANTIC DIVISION, NEW YORK DISTRICT, PHILADELPHIA DISTRICT | | |

SHORELINE RESOURCES

ESI POLYGON HABITAT TYPES

| ESI Rank | Habitat Classification | Area (Acres) | Area (Sq. Miles) |
|----------|---------------------------------|--------------|------------------|
| 10A | Salt and Brackish Water Marshes | 598.76 | 0.94 |
| 10B | Freshwater Marshes | 257.49 | 0.40 |
| 10C | Swamps | 4,422.40 | 6.91 |
| 10D | Scrub and Shrub Wetlands | 332.24 | 0.52 |
| 9A | Sheltered Tidal Flats | 31.19 | 0.05 |
| 7 | Exposed Tidal Flats | 70.86 | 0.11 |

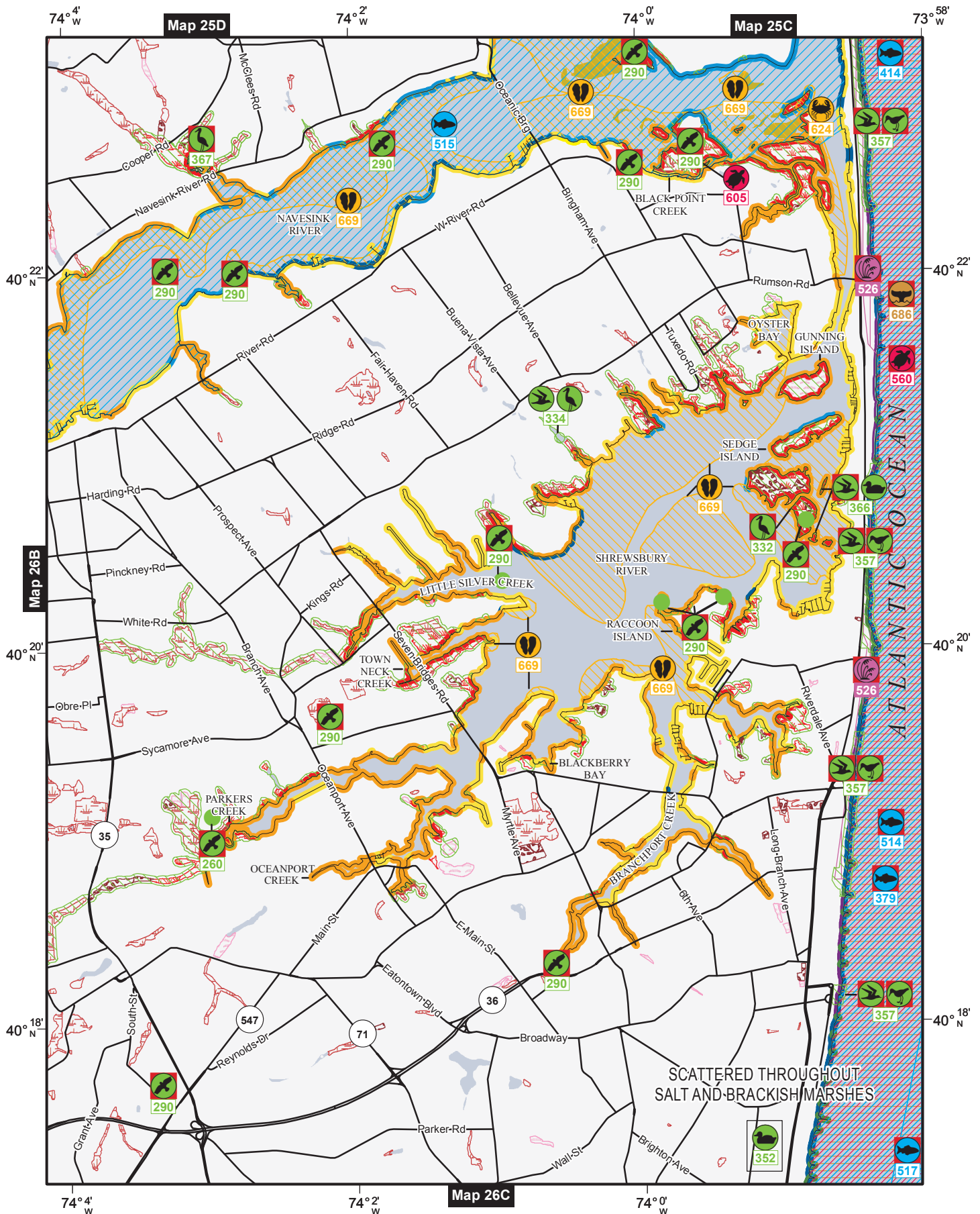
ESI SHORELINE HABITAT TYPES

| ESI Rank | Shoreline Habitat Classification | Length (Meters) | Length (Miles) | % of ESI Shoreline |
|----------------------|--------------------------------------|-----------------|----------------|--------------------|
| 10A | Salt and Brackish Water Marshes | 51,106.01 | 31.76 | 16% |
| 10B | Freshwater Marshes | 2,074.65 | 1.29 | 1% |
| 10C | Swamps | 4,758.18 | 2.96 | 2% |
| 10D | Scrub and Shrub Wetlands | 862.27 | 0.54 | < 1% |
| 9A | Sheltered Tidal Flats | 5,009.46 | 3.11 | 2% |
| 9B | Vegetated Low Banks | 113,967.68 | 70.82 | 37% |
| 8A | Sheltered, Impermeable, Rocky Shores | 473.48 | 0.29 | < 1% |
| 8B | Sheltered, Solid Man-Made Structures | 65,033.09 | 40.41 | 21% |
| 8C | Sheltered Riprap | 2,053.01 | 1.28 | 1% |
| 7 | Exposed Tidal Flats | 395.03 | 0.25 | < 1% |
| 6B | Riprap | 15,675.35 | 9.74 | 5% |
| 5 | Mixed Sand and Gravel Beaches | 1,574.12 | 0.98 | 1% |
| 4 | Coarse Grained Sand Beaches | 9,198.46 | 5.72 | 3% |
| 3A | Fine to Medium Grained Sand Beaches | 30,424.98 | 18.91 | 10% |
| 1B | Exposed, Solid Man-Made Structures | 8,759.24 | 5.44 | 3% |
| Total ESI Shoreline: | | 311,365.02 | 193.47 | |
| Total Shoreline: | | 220,676.79 | 137.12 | |

Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov





Map 26A
NY/ NJ Metropolitan Area



SEE BACK OF MAP
for details about mapped species and other
species that occur in the mapped area.
Data Published: February 2016

0 Not for Navigation 1 Miles
0 1 Kilometers

1:50,000



Map 26A
New York and New Jersey Metropolitan Area

BIOLOGICAL RESOURCES

Note: An asterisk (*) indicates that life stage occurs in this range but not in all months included

DISPLAYED ON MAP

BIRDS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--------|------------|---------------------|--------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 260 | Raptor | Endangered raptor 2 | Nesting | T/E | | 1 Pair | | | | | | | | | | | | | - | - | - | - |
| 290 | Raptor | Threatened raptor | Nesting | -/T | | 1 Pair | | | | | | | | | | | | | Apr-Jul | - | - | - |
| 332 | Wading | BC night-heron | Nesting | -/T | | - | | | | | | | | | | | | | Mar-Jul | - | - | - |
| 334 | Bird | Colonial waterbirds | Roosting | | | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Roosting | | | 50 | | | | | | | | | | | | | - | - | - | - |
| 352 | Waterfowl | Brant | Wintering | | | - | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Bufflehead | Wintering | | | - | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Canada goose | Wintering | | | - | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Common merganser | Wintering | | | - | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Ruddy duck | Wintering | | | - | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Scaup | Wintering | | | - | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Waterfowl | Wintering | | | - | | | | | | | | | | | | | - | - | - | - |
| 357 | Gull/Tern | Least tern | Nesting | T/E | | - | | | | | | | | | | | | | May-Sep | - | - | - |
| | Shorebird | Piping plover | Nesting | E/E | T | - | | | | | | | | | | | | | Apr-Aug | - | - | - |
| 366 | Gull/Tern | Common tern | Nesting | T/C | | - | | | | | | | | | | | | | May-Sep | - | - | - |
| | Waterfowl | Brant | Wintering | | | - | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Bufflehead | Wintering | | | - | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Canada goose | Wintering | | | - | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Common merganser | Wintering | | | - | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Ruddy duck | Wintering | | | - | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Scaup | Wintering | | | - | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Waterfowl | Wintering | | | - | | | | | | | | | | | | | - | - | - | - |
| 367 | Wading | BC night-heron | Concentration Area | -/T | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great blue heron | Concentration Area | -/C | | 6 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Concentration Area | | | 7 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Green heron | Concentration Area | | | 1 | | | | | | | | | | | | | - | - | - | - |
| | Wading | Snowy egret | Concentration Area | -/C | | 1 | | | | | | | | | | | | | - | - | - | - |

FISH

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------|------------|-------------------|----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|-------|------|--------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 379 | Diadromous | Atlantic sturgeon | Migration | -/E | E | High | | | | | | | | | | | | | - | - | - | May-Jul | May-Jul |
| 414 | Diadromous | Atlantic sturgeon | Concentration Area | -/E | E | High | | | | | | | | | | | | | - | - | - | May-Nov* | - |
| 514 | Diadromous | Atlantic sturgeon | General Distribution | -/E | E | Medium | | | | | | | | | | | | | - | - | - | Jan-Dec | Oct-Jun |
| 515 | Diadromous | Alewife | Migration | | | - | | | | | | | | | | | | | - | - | - | - | Mar-Jun |
| | Diadromous | Blueback herring | Migration | | | - | | | | | | | | | | | | | - | - | - | - | Mar-Jun |
| 517 | Diadromous | Atlantic sturgeon | General Distribution | -/E | E | Low | | | | | | | | | | | | | - | - | - | Jan-Dec | Oct-Jun |

HABITATS & RARE PLANTS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | |
|--------|------------|---------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D |

| | | | | | | | | | | | | | | | | | | |
|-----|---------|-------------------|-----------------------|-----|---|---|--|--|--|--|--|--|--|--|--|--|--|--|
| 526 | Wetland | Seabeach amaranth | Vulnerable Occurrence | T/E | T | - | | | | | | | | | | | | |
|-----|---------|-------------------|-----------------------|-----|---|---|--|--|--|--|--|--|--|--|--|--|--|--|

REPTILES & AMPHIBIANS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | |
|--------|------------|---------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D |

| | | | | | | | | | | | | | | | | | | |
|-----|--------|-------------------------|-----------------------|-----|---|---|--|--|--|--|--|--|--|--|--|--|--|--|
| 560 | Turtle | Green sea turtle | General Distribution | T/T | T | - | | | | | | | | | | | | |
| | Turtle | K. ridley sea turtle | General Distribution | E/E | E | - | | | | | | | | | | | | |
| | Turtle | Leatherback sea turtle | General Distribution | E/E | E | - | | | | | | | | | | | | |
| | Turtle | Loggerhead sea turtle | General Distribution | T/E | T | - | | | | | | | | | | | | |
| 605 | Turtle | N. diamondback terrapin | Vulnerable Occurrence | | | - | | | | | | | | | | | | |

INVERTEBRATES

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | |
|--------|------------|---------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D |

| | | | | | | | | | | | | | | | | | | |
|-----|---------|----------------|--------------------|--|--|----------|--|--|--|--|--|--|--|--|--|--|--|--|
| 624 | Crab | Horseshoe crab | Spawning Area | | | - | | | | | | | | | | | | |
| 669 | Bivalve | Softshell clam | Concentration Area | | | Historic | | | | | | | | | | | | |

MARINE MAMMALS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | |
|--------|------------|---------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D |

| | | | | | | | | | | | | | | | | | | |
|-----|-------|------------------|----------------------|-----|---|-------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| 686 | Whale | Fin whale | General Distribution | E/E | E | Common | | | | | | | | | | | | |
| | Whale | Humpback whale | General Distribution | E/E | E | Common | | | | | | | | | | | | |
| | Whale | N.A. right whale | General Distribution | E/E | E | Uncommon, Regular | | | | | | | | | | | | |

WIDESPREAD IN MAPPED AREA (> 10 SQUARE KILOMETERS)

BIRDS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | |
|--------|------------|---------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D |




| | | | | | | | | | | | | | | | | | | |
|--|-----------|------------------|-----------|--|--|-------|--|--|--|--|--|--|--|--|--|--|--|--|
| | Waterfowl | Brant | Wintering | | | 1000S | | | | | | | | | | | | |
| | | Bufflehead | Wintering | | | 100S | | | | | | | | | | | | |
| | | Canada goose | Wintering | | | 1000S | | | | | | | | | | | | |
| | | Common merganser | Wintering | | | 1000S | | | | | | | | | | | | |
| | | Ruddy duck | Wintering | | | 1000S | | | | | | | | | | | | |
| | | Scaup | Wintering | | | 1000S | | | | | | | | | | | | |
| | | Waterfowl | Wintering | | | 100S | | | | | | | | | | | | |

INVERTEBRATES



| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | |
|--------|------------|---------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D |

| | | | | | | | | | | | | | | | | | | |
|--|---------|-----------------|--------------------|--|--|----------|--|--|--|--|--|--|--|--|--|--|--|--|
| | Bivalve | Northern quahog | Concentration Area | | | Historic | | | | | | | | | | | | |
|--|---------|-----------------|--------------------|--|--|----------|--|--|--|--|--|--|--|--|--|--|--|--|




BIRDS

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--|----------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|---------|---------|------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| Alcid  | Razorbill | | | | | | | | | | | | | - | - | - | - |
| | Bonaparte's gull | | | | | | | | | | | | | - | - | - | - |
| | G. black-backed gull | | | | | | | | | | | | | - | - | - | - |
| | Herring gull | | | | | | | | | | | | | - | - | - | - |
| Pelagic  | Laughing gull | | | | | | | | | | | | | - | - | - | - |
| | Northern gannet | | | | | | | | | | | | | - | - | - | - |
| | Black scoter | | | | | | | | | | | | | - | - | - | - |
| | Common eider | | | | | | | | | | | | | - | - | - | - |
| Waterfowl  | Long-tailed duck | | | | | | | | | | | | | - | - | - | - |
| | Surf scoter | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | | | | | | | | | | | | | - | - | - | - |
| | White-winged scoter | | | | | | | | | | | | | - | - | - | - |




FISH

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--|-------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| Diadromous  | Alewife | | | | | | | | | | | | | - | - | - | Nov-Apr | Nov-Apr |
| | Alewife | | | | | | | | | | | | | - | - | Jun-Jul | Apr-Nov | Mar-Jun |
| | American eel | | | | | | | | | | | | | - | - | Jan-Feb | - | Sep-Dec |
| | American eel | | | | | | | | | | | | | - | - | - | Jan-Dec | Sep-Nov |
| | American eel | | | | | | | | | | | | | - | - | Apr-Aug | Jan-Dec | Sep-Nov |
| | American shad | | | | | | | | | | | | | - | - | - | Nov-Apr | Nov-Apr |
| | Blueback herring | | | | | | | | | | | | | - | - | - | Nov-Apr | Nov-Apr |
| | Blueback herring | | | | | | | | | | | | | - | - | May-Jun | May-Nov | Mar-Jul |
| | Striped bass | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Striped bass | | | | | | | | | | | | | - | - | - | Mar-Nov | Mar-Nov |
| | Atlantic croaker | | | | | | | | | | | | | - | - | - | Jun-Dec | Jun-Dec |
| | Atlantic herring | | | | | | | | | | | | | - | - | - | Nov-May | Nov-May |
| | Atlantic herring | | | | | | | | | | | | | - | - | Apr-May | Jan-May | Jan-May |
| | Atlantic menhaden | | | | | | | | | | | | | Sep-Dec | Sep-Dec | Oct-Dec | Oct-Apr | Oct-Apr |
| Estuarine Nursery  | Atlantic menhaden | | | | | | | | | | | | | - | - | Apr-Jul | Apr-Nov | May-Nov |
| | Bay anchovy | | | | | | | | | | | | | May-Nov | May-Nov | May-Dec | Jan-Dec | Jan-Dec |
| | Bay anchovy | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jul-Dec | May-Nov |
| | Black drum | | | | | | | | | | | | | - | - | - | - | Mar-Oct |
| | Black sea bass | | | | | | | | | | | | | May-Oct | May-Oct | May-Nov | Mar-Nov | Mar-Nov |
| | Bluefish | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | Bluefish | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Northern kingfish | | | | | | | | | | | | | - | - | - | Jun-Nov | Jun-Nov |
| | Northern kingfish | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Scup | | | | | | | | | | | | | - | - | - | Apr-Dec | Apr-Dec |
| | Scup | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Spot | | | | | | | | | | | | | - | - | - | Jun-Nov | Jun-Nov |

FISH (continued)

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--|---------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|----------|----------|----------|-----------|----------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| | Spot | | | | | | | | | | | | | Sep-Nov | Sep-Nov | Sep-Dec | Sep-Nov | Jun-Nov |
| | Summer flounder | | | | | | | | | | | | | Sep-Nov | Sep-Nov | Sep-Dec | Apr-Nov | Apr-Nov |
| | Summer flounder | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Weakfish | | | | | | | | | | | | | Apr-Sep | Apr-Sep | May-Sep | Apr-Nov | Apr-Nov |
| | Weakfish | | | | | | | | | | | | | Jun-Aug | Jun-Aug | Jun-Aug | Jun-Nov | May-Dec |
| | White perch | | | | | | | | | | | | | May-Jun | May-Jun | May-Jun | Jan-Dec | Jan-Dec |
| | Windowpane | | | | | | | | | | | | | Mar-Nov* | Mar-Nov* | Apr-Nov* | Jan-Dec | Jan-Dec |
| | Windowpane | | | | | | | | | | | | | - | - | Apr-Nov | Jan-Dec | Jan-Dec |
| | Winter flounder | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Winter flounder | | | | | | | | | | | | | Nov-Apr | Nov-Apr | Nov-May | Jan-Dec | Oct-Jun |
|  | Atlantic silverside | | | | | | | | | | | | | - | - | - | Jan-Apr | Jan-Apr |
| | Killifish | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | Silversides | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
|  | American sand lance | | | | | | | | | | | | | - | - | Nov-Apr | Nov-Apr | Nov-Apr |
| | American sand lance | | | | | | | | | | | | | - | - | - | - | Oct-Jun |
| | Atlantic cod | | | | | | | | | | | | | - | - | - | Nov-Apr | Nov-Apr |
| | Atlantic tomcod | | | | | | | | | | | | | Dec-Feb | Dec-Mar | Jan-Aug | Jan-Dec | Jan-Dec |
| | Cleannose skate | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov |
| | Goosefish | | | | | | | | | | | | | - | - | - | - | Jan-Jun |
| | Little skate | | | | | | | | | | | | | Jan-Dec | Jan-Dec | - | Jan-Dec | Jan-Dec |
| | Ocean pout | | | | | | | | | | | | | - | - | - | Dec-Aug | Dec-Aug |
| | Red hake | | | | | | | | | | | | | Jun-Sep | Jun-Sep | Jul-Oct | Jan-Dec | Jan-Dec |
| | Silver hake | | | | | | | | | | | | | May-Oct | May-Oct | May-Oct | Jan-Dec | Jan-Dec |
| | Smooth dogfish | | | | | | | | | | | | | May-Jun | May-Oct | - | Apr-Oct | Apr-Oct |
| | Tautog | | | | | | | | | | | | | May-Aug | May-Aug | Jun-Aug | Jan-Dec | Jan-Dec |
| | Tautog | | | | | | | | | | | | | May-Aug | May-Aug | Jun-Aug | Mar-Nov | Mar-Nov |
| | Tautog | | | | | | | | | | | | | - | Jun | Jun | Apr-Dec | Apr-Nov |
|  | Winter skate | | | | | | | | | | | | | - | - | - | Sep-May | Sep-Nov |
| | Atlantic mackerel | | | | | | | | | | | | | - | - | - | Nov-Apr* | Nov-Apr* |
| | Bluefin tuna | | | | | | | | | | | | | - | - | - | Jun-Sep | - |
| | Butterfish | | | | | | | | | | | | | May-Aug | May-Aug | May-Oct | May-Dec | May-Dec |
| | Dusky shark | | | | | | | | | | | | | - | - | - | May-Sep | May-Sep |
| | Sand tiger | | | | | | | | | | | | | - | - | - | Jun-Oct | - |
| | Sandbar shark | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Shortfin mako | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Skipjack tuna | | | | | | | | | | | | | - | - | - | Jun-Sep | Jun-Sep |
| | Spiny dogfish | | | | | | | | | | | | | - | - | - | Oct-Apr | Oct-Apr |
| | Thresher shark | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | Tiger shark | | | | | | | | | | | | | - | - | - | Jul-Oct | - |

INVERTEBRATES

| | | Monthly Presence | | | | | | | | | | | | Eggs | Larvae | Juveniles | Adults |
|---|------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|----------|----------|-----------|---------|
| Subelement | Species | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Bivalve | | | | | | | | | | | | | Jun-Oct* | Jun-Oct* | Jan-Dec | Jan-Dec |
|  | Cephalopod | | | | | | | | | | | | | - | - | - | Jan-Dec |
|  | Blue crab | | | | | | | | | | | | | - | - | - | Aug-Mar |
| | Blue crab | | | | | | | | | | | | | May-Oct | - | - | Jan-Dec |
| | Horseshoe crab | | | | | | | | | | | | | - | - | - | Jan-Dec |
| | Horseshoe crab | | | | | | | | | | | | | - | - | - | Aug-Mar |
|  | American lobster | | | | | | | | | | | | | - | - | - | Jan-Dec |

MARINE MAMMALS

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Mating | Calving | Pupping | Molt |
|---|--------------------|-------------------------|---|---|---|---|---|---|---|---|---|---|---|--------|---------|---------|------|
| | | J F M A M J J A S O N D | | | | | | | | | | | | | | | |
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  Dolphin | Bottlenose dolphin | | | | | | | | | | | | | - | - | - | - |
| | Harbor porpoise | | | | | | | | | | | | | - | - | - | - |

For additional information about species locations and extent, reference the underlying GIS data available from response.restoration.noaa.gov

SHORELINE RESOURCES

ESI POLYGON HABITAT TYPES

| ESI Rank | Habitat Classification | Area (Acres) | Area (Sq. Miles) |
|----------|---------------------------------|--------------|------------------|
| 10A | Salt and Brackish Water Marshes | 362.58 | 0.57 |
| 10B | Freshwater Marshes | 66.32 | 0.10 |
| 10C | Swamps | 409.56 | 0.64 |
| 10D | Scrub and Shrub Wetlands | 75.99 | 0.12 |
| 9A | Sheltered Tidal Flats | 10.49 | 0.02 |
| 7 | Exposed Tidal Flats | 70.95 | 0.11 |

ESI SHORELINE HABITAT TYPES

| ESI Rank | Shoreline Habitat Classification | Length (Meters) | Length (Miles) | % of ESI Shoreline |
|----------|--------------------------------------|-----------------|----------------|--------------------|
| 10A | Salt and Brackish Water Marshes | 37,304.77 | 23.18 | 18% |
| 10B | Freshwater Marshes | 128.46 | 0.08 | < 1% |
| 10C | Swamps | 1,095.27 | 0.68 | 1% |
| 10D | Scrub and Shrub Wetlands | 657.36 | 0.41 | < 1% |
| 9A | Sheltered Tidal Flats | 2,969.71 | 1.85 | 1% |
| 9B | Vegetated Low Banks | 71,433.17 | 44.39 | 35% |
| 8A | Sheltered, Impermeable, Rocky Shores | 473.48 | 0.29 | < 1% |
| 8B | Sheltered, Solid Man-Made Structures | 50,667.68 | 31.48 | 25% |
| 8C | Sheltered Riprap | 1,276.44 | 0.79 | 1% |
| 7 | Exposed Tidal Flats | 395.03 | 0.25 | < 1% |
| 6B | Riprap | 6,817.37 | 4.24 | 3% |
| 5 | Mixed Sand and Gravel Beaches | 1,379.27 | 0.86 | 1% |
| 4 | Coarse Grained Sand Beaches | 8,664.67 | 5.38 | 4% |
| 3A | Fine to Medium Grained Sand Beaches | 17,812.36 | 11.07 | 9% |
| 1B | Exposed, Solid Man-Made Structures | 3,714.49 | 2.31 | 2% |

Total ESI Shoreline: 204,789.53 Total ESI Shoreline: 127.25
 Total Shoreline: 144,130.82 Total Shoreline: 89.56

Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov



Map 26B
New York and New Jersey Metropolitan Area

BIOLOGICAL RESOURCES

Note: An asterisk (*) indicates that life stage occurs in this range but not in all months included

DISPLAYED ON MAP

BIRDS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--------|------------|---------------------|-------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 260 | Raptor | Endangered raptor 2 | Nesting | T/E | | 1 Pair | | | | | | | | | | | | | - | - | - | - |
| 352 | Waterfowl | Brant | Wintering | | | - | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Bufflehead | Wintering | | | - | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Canada goose | Wintering | | | - | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Common merganser | Wintering | | | - | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Ruddy duck | Wintering | | | - | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Scaup | Wintering | | | - | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Waterfowl | Wintering | | | - | | | | | | | | | | | | | - | - | - | - |
| 368 | Waterfowl | Brant | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Bufflehead | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Canada goose | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Common merganser | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Ruddy duck | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Scaup | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Waterfowl | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| 369 | Bird | Colonial waterbirds | Roosting | | | - | | | | | | | | | | | | | - | - | - | - |
| | Wading | Great egret | Roosting | | | 19 | | | | | | | | | | | | | - | - | - | - |

FISH

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------|------------|------------------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 500 | Diadromous | Alewife | Nursery Area | | | - | | | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - |
| | Diadromous | Alewife | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |
| | Diadromous | Blueback herring | Nursery Area | | | - | | | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - |
| | Diadromous | Blueback herring | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |
| 515 | Diadromous | Alewife | Migration | | | - | | | | | | | | | | | | | - | - | - | - | Mar-Jun |
| | Diadromous | Blueback herring | Migration | | | - | | | | | | | | | | | | | - | - | - | - | Mar-Jun |

HABITATS & RARE PLANTS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--------|------------|------------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 520 | Plant | Endangered plant | Vulnerable Occurrence | E/E | | - | | | | | | | | | | | | | - | - | - | - |
| 525 | Plant | Rare plant | Vulnerable Occurrence | C/C | | - | | | | | | | | | | | | | - | - | - | - |
| 536 | Wetland | Vernal pool | Vulnerable Occurrence | | | - | | | | | | | | | | | | | - | - | - | - |
| 538 | Wetland | Swamp-pink | Vulnerable Occurrence | -E | T | - | | | | | | | | | | | | | - | - | - | - |

REPTILES & AMPHIBIANS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Hatch | Internest | Juveniles | Adults |
|--------|------------|--------------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|-------|-----------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 603 | Turtle | Eastern box turtle | Vulnerable Occurrence | C/C | - | | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov |

INVERTEBRATES

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------|------------|-----------------|--------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 664 | Bivalve | Northern quahog | Concentration Area | | | Historic | | | | | | | | | | | | | Jun-Sep | Jun-Sep | Jun-Sep | Jan-Dec | Jan-Dec |
| | Bivalve | Softshell clam | Concentration Area | | | Historic | | | | | | | | | | | | | May-Oct | May-Oct | May-Oct | Jan-Dec | Jan-Dec |
| 668 | Bivalve | Northern quahog | Concentration Area | | | Historic | | | | | | | | | | | | | Jun-Sep | Jun-Sep | Jun-Sep | Jan-Dec | Jan-Dec |
| 669 | Bivalve | Softshell clam | Concentration Area | | | Historic | | | | | | | | | | | | | May-Oct | May-Oct | May-Oct | Jan-Dec | Jan-Dec |
| 672 | Bivalve | Eastern oyster | Concentration Area | | | Historic | | | | | | | | | | | | | Jul-Aug | Jul-Aug | Jul-Sep | Jan-Dec | Jan-Dec |

ALSO PRESENT IN MAPPED AREA (GENERAL DISTRIBUTION)

BIRDS

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|------------|--------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|---------|---------|------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| | Waterfowl | | | | | | | | | | | | | - | - | - | - |
| | Black scoter | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | | | | | | | | | | | | | - | - | - | - |

FISH

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|------------|---------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| | Diadromous | | | | | | | | | | | | | - | - | Jun-Jul | Apr-Nov | Mar-Jun |
| | Alewife | | | | | | | | | | | | | - | - | - | Jan-Dec | Sep-Nov |
| | American eel | | | | | | | | | | | | | - | - | Apr-Aug | Jan-Dec | Sep-Nov |
| | Blueback herring | | | | | | | | | | | | | - | - | May-Jun | May-Nov | Mar-Jul |
| | Striped bass | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Atlantic herring | | | | | | | | | | | | | - | - | Apr-May | Jan-May | Jan-May |
| | Atlantic menhaden | | | | | | | | | | | | | - | - | Apr-Jul | Apr-Nov | May-Nov |
| | Bay anchovy | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jul-Dec | May-Nov |
| | Bluefish | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Northern kingfish | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Scup | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Spot | | | | | | | | | | | | | - | - | - | Jun-Nov | Jun-Nov |
| | Summer flounder | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Weakfish | | | | | | | | | | | | | Jun-Aug | Jun-Aug | Jun-Aug | Jun-Nov | May-Dec |
| | White perch | | | | | | | | | | | | | May-Jun | May-Jun | May-Jun | Jan-Dec | Jan-Dec |
| | Windowpane | | | | | | | | | | | | | - | - | Apr-Nov | Jan-Dec | Jan-Dec |
| | Winter flounder | | | | | | | | | | | | | Nov-Apr | Nov-Apr | Nov-May | Jan-Dec | Oct-Jun |
| | Killifish | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | Silversides | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | American sand lance | | | | | | | | | | | | | - | - | Nov-Apr | Nov-Apr | Nov-Apr |
| | Atlantic tomcod | | | | | | | | | | | | | Dec-Feb | Dec-Mar | Jan-Aug | Jan-Dec | Jan-Dec |
| | Smooth dogfish | | | | | | | | | | | | | May-Jun | May-Oct | - | Apr-Oct | Apr-Oct |
| | Tautog | | | | | | | | | | | | | - | Jun | Jun | Apr-Dec | Apr-Nov |

New York and New Jersey Metropolitan Area: Map 26B

INVERTEBRATES

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Eggs | Larvae | Juveniles | Adults |
|------------|-----------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|--------|-----------|---------|
| Crab | Blue crab | J | F | M | A | M | J | J | A | S | O | N | D | May-Oct | - | Jan-Dec | Jan-Dec |
| | | | | | | | | | | | | | | | | | |

MARINE MAMMALS

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Mating | Calving | Pupping | Molt |
|------------|--------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|--------|---------|---------|------|
| Dolphin | Bottlenose dolphin | J | F | M | A | M | J | J | A | S | O | N | D | - | - | - | - |
| | | | | | | | | | | | | | | | | | |

For additional information about species locations and extent, reference the underlying GIS data available from response.restoration.noaa.gov

SHORELINE RESOURCES

ESI POLYGON HABITAT TYPES

| ESI Rank | Habitat Classification | Area (Acres) | Area (Sq. Miles) |
|----------|---------------------------------|--------------|------------------|
| 10A | Salt and Brackish Water Marshes | 172.30 | 0.27 |
| 10B | Freshwater Marshes | 131.84 | 0.21 |
| 10C | Swamps | 807.97 | 1.26 |
| 10D | Scrub and Shrub Wetlands | 54.31 | 0.08 |

ESI SHORELINE HABITAT TYPES

| ESI Rank | Shoreline Habitat Classification | Length (Meters) | Length (Miles) | % of ESI Shoreline |
|----------|--------------------------------------|-----------------|----------------|--------------------|
| 10A | Salt and Brackish Water Marshes | 9,759.62 | 6.06 | 30% |
| 10B | Freshwater Marshes | 1,562.04 | 0.97 | 5% |
| 10C | Swamps | 342.68 | 0.21 | 1% |
| 9B | Vegetated Low Banks | 17,803.54 | 11.06 | 55% |
| 8B | Sheltered, Solid Man-Made Structures | 2,129.71 | 1.32 | 7% |
| 8C | Sheltered Riprap | 136.18 | 0.08 | < 1% |
| 4 | Coarse Grained Sand Beaches | 437.72 | 0.27 | 1% |

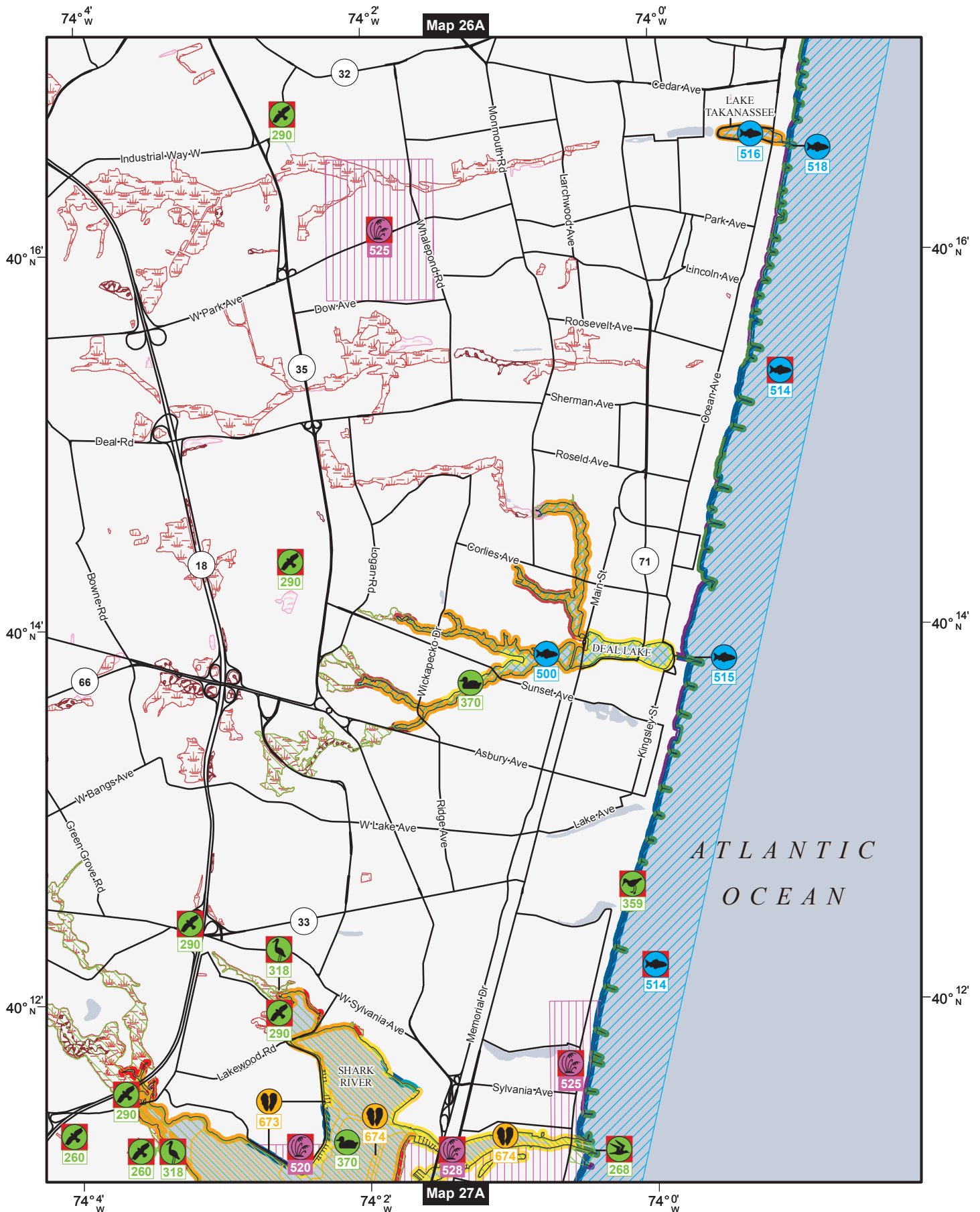
Total ESI Shoreline: 32,171.49
Total Shoreline: 20,105.53

Total ESI Shoreline: 19.99
Total Shoreline: 12.49

Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov

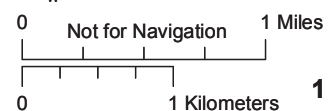




Map 26C
NY/ NJ Metropolitan Area



SEE BACK OF MAP
for details about mapped species and other
species that occur in the mapped area.
Data Published: February 2016



1:50,000



Map 26C
New York and New Jersey Metropolitan Area

BIOLOGICAL RESOURCES

Note: An asterisk (*) indicates that life stage occurs in this range but not in all months included

DISPLAYED ON MAP

BIRDS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--------|------------|------------------------|-------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 260 | Raptor | Endangered raptor 2 | Nesting | T/E | | 1 Pair | | | | | | | | | | | | | - | - | - | - |
| 268 | Gull/Tern | Least tern | Nesting | T/E | | - | | | | | | | | | | | | | May-Sep | | | - |
| 290 | Raptor | Threatened raptor | Nesting | -/T | | 1 Pair | | | | | | | | | | | | | Apr-Jul | | | - |
| 318 | Wading | Great blue heron | Nesting | -/C | | - | | | | | | | | | | | | | Mar-Jul | | | - |
| 359 | Shorebird | Red knot | Migration | -/E | T | - | | | | | | | | | | | | | May | May | May | - |
| 370 | Waterfowl | American black duck | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | American wigeon | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Brant | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Bufflehead | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Canada goose | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Gadwall | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Mallard | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Red-breasted merganser | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Ruddy duck | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Waterfowl | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |

FISH

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 500 | Diadromous | Alewife | Nursery Area | | | - | | | | | | | | | | | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | </ |


HABITATS & RARE PLANTS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | |
|--------|------------|------------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D |
| 520 | Plant | Endangered plant | Vulnerable Occurrence | E/E | | - | | | | | | | | | | | | |
| 525 | Plant | Rare plant | Vulnerable Occurrence | C/C | | - | | | | | | | | | | | | |
| 528 | Plant | Endangered plant | Vulnerable Occurrence | E/E | | - | | | | | | | | | | | | |
| | Plant | Rare plant | Vulnerable Occurrence | C/C | | - | | | | | | | | | | | | |


INVERTEBRATES

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--|------------|-----------------|--------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 673 | Bivalve | Northern quahog | Concentration Area | | | Historic | | | | | | | | | | | | | May-Sep | May-Sep | May-Sep | Jan-Dec | Jan-Dec |
| 674 | Bivalve | Blue mussel | Concentration Area | | | Historic | | | | | | | | | | | | | Apr-Nov | Apr-Nov | Apr-Nov | Jan-Dec | Jan-Dec |
| WIDESPREAD IN MAPPED AREA (> 10 SQUARE KILOMETERS) | | | | | | | | | | | | | | | | | | | | | | | |


FISH

| Subelement | Species | Mapping Qualifier | S | F | Concentration | J | F | M | A | M | J | J | A | S | O | N | D | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|-------------------|----------------------|-----|---|---------------|---|---|---|---|---|---|---|---|---|---|---|---|-------|------|--------|-----------|---------|
|  | Atlantic sturgeon | General Distribution | -/E | E | Low | | | | | | | | | | | | | - | - | - | Jan-Dec | Oct-Jun |
| | Atlantic sturgeon | Migration | -/E | E | High | | | | | | | | | | | | | - | - | - | May-Jul | May-Jul |

REPTILES & AMPHIBIANS





| Subelement | Species | Mapping Qualifier | S | F | Concentration | J | F | M | A | M | J | J | A | S | O | N | D | Nest | Hatch | Internest | Juveniles | Adults |
|---|------------------------|----------------------|-----|---|---------------|---|---|---|---|---|---|---|---|---|---|---|---|------|-------|-----------|-----------|---------|
|  | Green sea turtle | General Distribution | T/T | T | - | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | K. ridley sea turtle | General Distribution | E/E | E | - | | | | | | | | | | | | | - | - | - | May-Nov | - |
| | Leatherback sea turtle | General Distribution | E/E | E | - | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | Loggerhead sea turtle | General Distribution | T/E | T | - | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |

MARINE MAMMALS

| Subelement | Species | Mapping Qualifier | S | F | Concentration | J | F | M | A | M | J | J | A | S | O | N | D | Mating | Calving | Pupping | Molt |
|---|------------------|----------------------|-----|---|-------------------|---|---|---|---|---|---|---|---|---|---|---|---|--------|---------|---------|------|
|  | Fin whale | General Distribution | E/E | E | Common | | | | | | | | | | | | | - | - | - | - |
| | Humpback whale | General Distribution | E/E | E | Common | | | | | | | | | | | | | - | - | - | - |
| | N.A. right whale | General Distribution | E/E | E | Uncommon, Regular | | | | | | | | | | | | | - | - | - | - |




ALSO PRESENT IN MAPPED AREA (GENERAL DISTRIBUTION)

BIRDS

| Subelement | Species | Mapping Qualifier | S | F | Concentration | J | F | M | A | M | J | J | A | S | O | N | D | Nest | Mig.(S) | Mig.(F) | Molt |
|---|---------------------|-------------------|---|---|---------------|---|---|---|---|---|---|---|---|---|---|---|---|------|---------|---------|------|
|  | Razorbill | | | | | | | | | | | | | | | | | - | - | - | - |
|  | Bonaparte's gull | | | | | | | | | | | | | | | | | - | - | - | - |
| | Herring gull | | | | | | | | | | | | | | | | | - | - | - | - |
| | Laughing gull | | | | | | | | | | | | | | | | | - | - | - | - |
|  | Northern gannet | | | | | | | | | | | | | | | | | - | - | - | - |
|  | Black scoter | | | | | | | | | | | | | | | | | - | - | - | - |
| | Common eider | | | | | | | | | | | | | | | | | - | - | - | - |
| | Long-tailed duck | | | | | | | | | | | | | | | | | - | - | - | - |
| | Surf scoter | | | | | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | | | | | | | | | | | | | | | | | - | - | - | - |
| | White-winged scoter | | | | | | | | | | | | | | | | | - | - | - | - |


FISH

Monthly Presence



| Subelement | Species | J | F | M | A | M | J | J | A | S | O | N | D | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|---------------------|---|---|---|---|---|---|---|---|---|---|---|---|----------|----------|----------|-----------|---------|
|  | Alewife | | | | | | | | | | | | | - | - | - | Nov-Apr | Nov-Apr |
| | Alewife | | | | | | | | | | | | | - | - | - | Nov-Apr | Nov-Apr |
| | American eel | | | | | | | | | | | | | - | - | - | Jan-Dec | Mar-Jun |
| | American eel | | | | | | | | | | | | | - | - | Feb-Apr | Jan-Dec | Sep-Dec |
| | American shad | | | | | | | | | | | | | - | - | Jan-Feb | - | Sep-Dec |
| | American shad | | | | | | | | | | | | | - | - | - | Nov-Mar | Mar-May |
| | Blueback herring | | | | | | | | | | | | | - | - | - | Nov-Apr | Nov-Apr |
| | Blueback herring | | | | | | | | | | | | | - | - | - | Jan-Dec | Mar-Jun |
| | Striped bass | | | | | | | | | | | | | - | - | - | Nov-Apr | Nov-Apr |
| | Striped bass | | | | | | | | | | | | | - | - | - | Mar-Dec | Mar-Dec |
|  | Atlantic croaker | | | | | | | | | | | | | - | - | - | Mar-Nov | Mar-Nov |
| | Atlantic croaker | | | | | | | | | | | | | - | - | - | - | Jun-Dec |
| | Atlantic herring | | | | | | | | | | | | | - | - | - | Nov-May | Nov-May |
| | Atlantic herring | | | | | | | | | | | | | - | - | - | Nov-Apr | Nov-Apr |
| | Atlantic menhaden | | | | | | | | | | | | | Sep-Dec | Sep-Dec | Oct-Dec | Oct-Apr | Oct-Apr |
| | Atlantic menhaden | | | | | | | | | | | | | May-Nov* | May-Nov* | May-Nov* | Jan-Dec | Mar-Sep |
| | Bay anchovy | | | | | | | | | | | | | May-Nov | May-Nov | May-Dec | Jan-Dec | Jan-Dec |
| | Bay anchovy | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Apr-Oct |
| | Black drum | | | | | | | | | | | | | - | - | - | - | Mar-Oct |
| | Black sea bass | | | | | | | | | | | | | May-Oct | May-Oct | May-Nov | Mar-Nov | Mar-Nov |
| | Black sea bass | | | | | | | | | | | | | - | - | - | May-Oct | Jun-Sep |
| | Bluefish | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Bluefish | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | Northern kingfish | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | Northern kingfish | | | | | | | | | | | | | - | - | - | Jun-Nov | Jun-Nov |
| | Scup | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Scup | | | | | | | | | | | | | - | - | - | Apr-Dec | Apr-Dec |
| | Spot | | | | | | | | | | | | | - | - | - | Jun-Nov | Jun-Nov |
| | Spot | | | | | | | | | | | | | - | - | - | Sep-Nov | Jun-Nov |
| | Spot | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov |
| | Summer flounder | | | | | | | | | | | | | Sep-Nov | Sep-Nov | Sep-Dec | Apr-Nov | May-Sep |
| | Summer flounder | | | | | | | | | | | | | - | - | - | Apr-Aug | May-Sep |
| | Weakfish | | | | | | | | | | | | | Jun-Aug | Jun-Aug | Jun-Aug | Jun-Nov | May-Dec |
| | Weakfish | | | | | | | | | | | | | Apr-Sep | Apr-Sep | May-Sep | Apr-Nov | Apr-Nov |
| | White perch | | | | | | | | | | | | | - | - | - | Nov-Mar | Nov-Mar |
| | Windowpane | | | | | | | | | | | | | May-Aug | May-Aug | May-Oct | Jan-Dec | Jan-Dec |
| | Windowpane | | | | | | | | | | | | | Mar-Nov* | Mar-Nov* | Apr-Nov* | Jan-Dec | Jan-Dec |
| | Winter flounder | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Winter flounder | | | | | | | | | | | | | Jan-Mar | Jan-Mar | Jan-Apr | Jan-Dec | Nov-Apr |
| | Winter flounder | | | | | | | | | | | | | - | - | - | Jan-Apr | Jan-Apr |
|  | Atlantic silverside | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | Killifish | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | Silversides | | | | | | | | | | | | | Nov-Apr | Nov-Apr | Nov-Apr | Jan-Dec | Nov-Apr |
| | American sand lance | | | | | | | | | | | | | - | - | - | - | Oct-Jun |
| | American sand lance | | | | | | | | | | | | | - | - | - | - | Nov-Apr |
| | American sand lance | | | | | | | | | | | | | - | - | - | - | Nov-Apr |
| | American sand lance | | | | | | | | | | | | | - | - | - | - | Nov-Apr |
| | American sand lance | | | | | | | | | | | | | - | - | - | - | Nov-Apr |
| | American sand lance | | | | | | | | | | | | | - | - | - | - | Nov-Apr |
| | American sand lance | | | | | | | | | | | | | - | - | - | - | Nov-Apr |

New York and New Jersey Metropolitan Area: Map 26C


FISH (continued)

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Eggs | Larvae | Juveniles | Adults |
|---|-------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|-----------|----------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| | Cleannose skate | | | | | | | | | | | | | - | - | Apr-Nov | Apr-Nov |
| | Goosefish | | | | | | | | | | | | | - | - | Jan-Jun | Jan-Jun |
| | Little skate | | | | | | | | | | | | | Jan-Dec | - | Jan-Dec | Jan-Dec |
| | Ocean pout | | | | | | | | | | | | | - | - | Dec-Aug | Dec-Aug |
| | Red hake | | | | | | | | | | | | | Jun-Sep | Jul-Oct | Jan-Dec | Jan-Dec |
| | Silver hake | | | | | | | | | | | | | May-Oct | May-Oct | Jan-Dec | Jan-Dec |
| | Smooth dogfish | | | | | | | | | | | | | May-Jun | May-Oct | Apr-Oct | Apr-Oct |
| | Tautog | | | | | | | | | | | | | May-Aug | Jun-Aug | Mar-Nov | Mar-Nov |
| | Tautog | | | | | | | | | | | | | May-Aug | Jun-Aug | Jan-Dec | Jan-Dec |
| | Tautog | | | | | | | | | | | | | May-Sep | May-Sep | May-Sep | May-Sep |
| | Winter skate | | | | | | | | | | | | | - | - | Sep-May | Sep-Nov |
|  | Atlantic mackerel | | | | | | | | | | | | | - | - | Nov-Apr | - |
| | Atlantic mackerel | | | | | | | | | | | | | - | - | Nov-Apr* | Nov-Apr* |
| | Bluefin tuna | | | | | | | | | | | | | - | - | Jun-Sep | - |
| | Butterfish | | | | | | | | | | | | | May-Aug | May-Oct | May-Dec | May-Dec |
| | Dusky shark | | | | | | | | | | | | | - | - | May-Sep | May-Sep |
| | Sand tiger | | | | | | | | | | | | | - | - | Jun-Oct | - |
| | Sandbar shark | | | | | | | | | | | | | - | - | Jun-Oct | Jun-Oct |
| | Shortfin mako | | | | | | | | | | | | | - | - | May-Oct | May-Oct |
| | Skipjack tuna | | | | | | | | | | | | | - | - | Jun-Sep | Jun-Sep |
| | Spiny dogfish | | | | | | | | | | | | | - | - | Oct-Apr | Oct-Apr |
| | Thresher shark | | | | | | | | | | | | | - | - | May-Nov | May-Nov |
| | Tiger shark | | | | | | | | | | | | | - | - | Jul-Oct | - |

INVERTEBRATES

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Eggs | Larvae | Juveniles | Adults |
|---|-------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|----------|----------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Atlantic surfclam | | | | | | | | | | | | | Jun-Oct* | Jun-Oct* | Jan-Dec | Jan-Dec |
| | Longfin squid | | | | | | | | | | | | | - | - | - | Jan-Dec |
| | Blue crab | | | | | | | | | | | | | - | Jun-Oct | - | Aug-Mar |
| | Blue crab | | | | | | | | | | | | | May-Oct | Jun-Oct | Jan-Dec | Jan-Dec |
| | Horseshoe crab | | | | | | | | | | | | | - | - | Jan-Dec | Jan-Dec |
| | Horseshoe crab | | | | | | | | | | | | | - | - | Aug-Mar | Aug-Mar |
|  | American lobster | | | | | | | | | | | | | - | - | Jan-Dec | Jan-Dec |

MARINE MAMMALS

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Calving | Pupping | Molt |
|---|--------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | |
|  | Bottlenose dolphin | | | | | | | | | | | | | - | - | - |
| | Harbor porpoise | | | | | | | | | | | | | - | - | - |

For additional information about species locations and extent, reference the underlying GIS data available from response.restoration.noaa.gov

SHORELINE RESOURCES

ESI POLYGON HABITAT TYPES

| ESI Rank | Habitat Classification | Area (Acres) | Area (Sq. Miles) |
|----------|---------------------------------|--------------|------------------|
| 10A | Salt and Brackish Water Marshes | 63.84 | 0.10 |
| 10B | Freshwater Marshes | 36.98 | 0.06 |
| 10C | Swamps | 851.80 | 1.33 |
| 10D | Scrub and Shrub Wetlands | 80.53 | 0.13 |
| 9A | Sheltered Tidal Flats | 20.64 | 0.03 |

ESI SHORELINE HABITAT TYPES

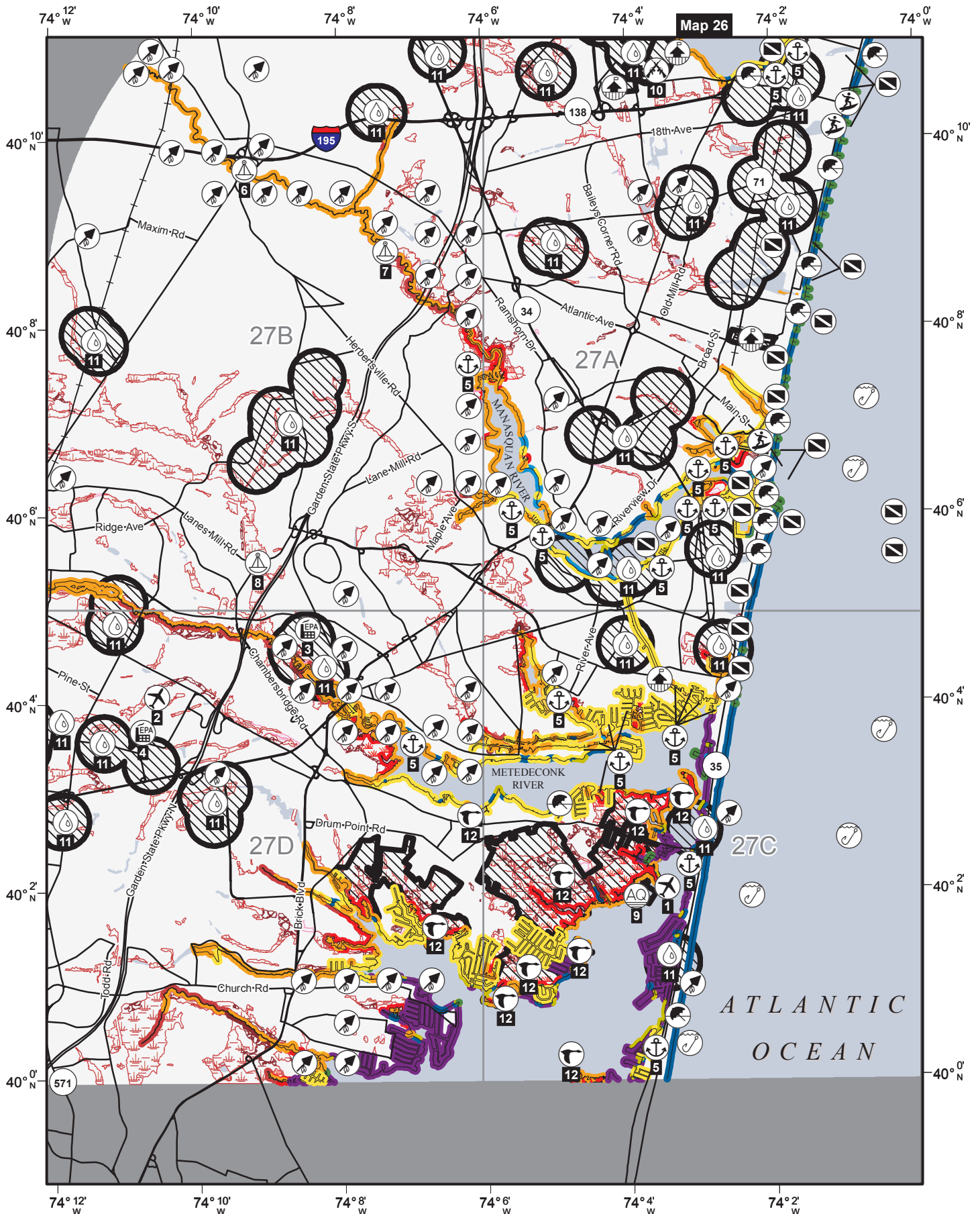
| ESI Rank | Shoreline Habitat Classification | Length (Meters) | Length (Miles) | % of ESI Shoreline |
|----------|--------------------------------------|-----------------|----------------|--------------------|
| 10A | Salt and Brackish Water Marshes | 4,038.63 | 2.51 | 5% |
| 10B | Freshwater Marshes | 384.16 | 0.24 | 1% |
| 10C | Swamps | 3,320.23 | 2.06 | 4% |
| 10D | Scrub and Shrub Wetlands | 204.91 | 0.13 | < 1% |
| 9A | Sheltered Tidal Flats | 2,031.94 | 1.26 | 3% |
| 9B | Vegetated Low Banks | 24,722.63 | 15.36 | 33% |
| 8B | Sheltered, Solid Man-Made Structures | 12,232.11 | 7.60 | 16% |
| 8C | Sheltered Riprap | 640.39 | 0.40 | 1% |
| 6B | Riprap | 8,858.35 | 5.50 | 12% |
| 5 | Mixed Sand and Gravel Beaches | 194.85 | 0.12 | < 1% |
| 4 | Coarse Grained Sand Beaches | 98.56 | 0.06 | < 1% |
| 3A | Fine to Medium Grained Sand Beaches | 12,611.38 | 7.84 | 17% |
| 1B | Exposed, Solid Man-Made Structures | 5,044.76 | 3.13 | 7% |

Total ESI Shoreline: 74,382.89 Total ESI Shoreline: 46.22
 Total Shoreline: 56,426.84 Total Shoreline: 35.06

Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov

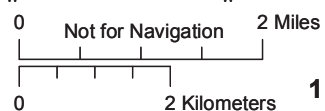




Map 27
 NY/ NJ Metropolitan Area



SEE BACK OF MAP
 for details about mapped resources and
 other resources that occur in mapped area.
 Data Published: February 2016



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Map 27
New York and New Jersey Metropolitan Area

HUMAN USE RESOURCES

| DISPLAYED ON MAP (POINTS) | | | |
|--|---|--|--------------|
| Map ID | Type | Name | Phone |
| 1 | AIRPORT | ALLEN'S | |
| 2 | AIRPORT | LAKEWOOD | |
| 3 | EPA FACILITY | BRICK TOWNSHIP MUNICIPAL UTILITIES AUTHORITY | 732-458-7000 |
| 4 | EPA FACILITY | CHURCH & DWIGHT COMPANY INC. | 732-730-3105 |
| 5 | MARINA | MARINA | |
| 6 | REPEATED MEASUREMENT SITE | MANASQUAN RIVER AT SQUANKUM NJ | |
| 7 | REPEATED MEASUREMENT SITE | MANASQUAN RIVER NEAR ALLENWOOD NJ | |
| 8 | REPEATED MEASUREMENT SITE | NORTH BRANCH METEDECONK RIVER NEAR LAKEWOOD NJ | |
| DISPLAYED ON MAP (POLYGONS) | | | |
| Map ID | Type | Name | Phone |
| 9 | AQUACULTURE | AQUACULTURE AREA | |
| 10 | MILITARY | FT MONMOUTH | |
| 11 | WATER INTAKE | WATER INTAKE AREA | |
| 12 | WILDLIFE REFUGE | EDWIN B. FORSYTHE NATIONAL WILDLIFE REFUGE | |
| ALSO PRESENT IN MAPPED AREA (POINTS) | | | |
| Type | Name | Contact | Phone |
| COAST GUARD | COAST GUARD STATION MANASQUAN BEACH | COMMANDING OFFICER | 732-899-0130 |
| ALSO PRESENT IN MAPPED AREA (POLYGONS) | | | |
| Type | Name | Contact | Phone |
| ESSENTIAL HABITAT | EFH AREA | CHRIS BRUCE | 434-951-0565 |
| ESSENTIAL HABITAT | IMPORTANT BIRD AREA | GYLLA MACGREGOR | |
| JURISDICTIONS | | | |
| COUNTY: | MONMOUTH COUNTY, OCEAN COUNTY | FEMA: | REGION II |
| COAST GUARD: | DISTRICT 5, SECTOR DELAWARE BAY | EPA: | REGION 2 |
| USACE: | NORTH ATLANTIC DIVISION, NEW YORK DISTRICT, PHILADELPHIA DISTRICT | | |

SHORELINE RESOURCES

ESI POLYGON HABITAT TYPES

| ESI Rank | Habitat Classification | Area (Acres) | Area (Sq. Miles) |
|----------|---------------------------------|--------------|------------------|
| 10A | Salt and Brackish Water Marshes | 1,231.16 | 1.92 |
| 10B | Freshwater Marshes | 159.48 | 0.25 |
| 10C | Swamps | 4,516.46 | 7.06 |
| 10D | Scrub and Shrub Wetlands | 663.61 | 1.04 |
| 9A | Sheltered Tidal Flats | 53.78 | 0.08 |
| 7 | Exposed Tidal Flats | 60.42 | 0.09 |

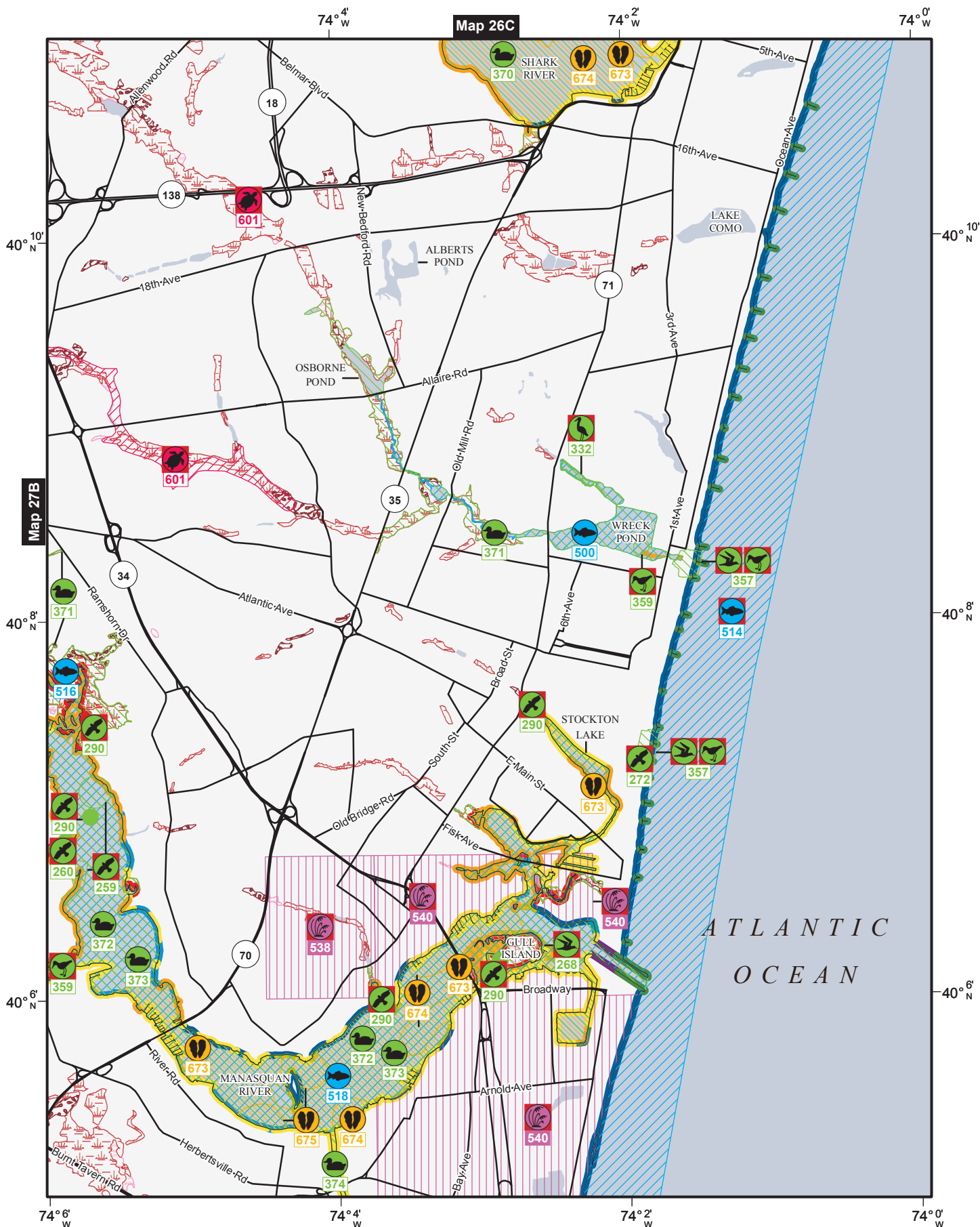
ESI SHORELINE HABITAT TYPES

| ESI Rank | Shoreline Habitat Classification | Length (Meters) | Length (Miles) | % of ESI Shoreline |
|----------------------|--------------------------------------|-----------------|----------------|--------------------|
| 10A | Salt and Brackish Water Marshes | 72,909.09 | 45.30 | 13% |
| 10B | Freshwater Marshes | 1,890.45 | 1.17 | < 1% |
| 10C | Swamps | 32,493.67 | 20.19 | 6% |
| 10D | Scrub and Shrub Wetlands | 6,091.63 | 3.79 | 1% |
| 9A | Sheltered Tidal Flats | 6,257.85 | 3.89 | 1% |
| 9B | Vegetated Low Banks | 170,976.85 | 106.24 | 31% |
| 8B | Sheltered, Solid Man-Made Structures | 140,757.08 | 87.46 | 25% |
| 8C | Sheltered Riprap | 2,955.55 | 1.84 | 1% |
| 7 | Exposed Tidal Flats | 11,628.28 | 7.23 | 2% |
| 6B | Riprap | 3,767.99 | 2.34 | 1% |
| 5 | Mixed Sand and Gravel Beaches | 323.84 | 0.20 | < 1% |
| 4 | Coarse Grained Sand Beaches | 3,773.97 | 2.35 | 1% |
| 3A | Fine to Medium Grained Sand Beaches | 38,905.38 | 24.17 | 7% |
| 1B | Exposed, Solid Man-Made Structures | 63,045.71 | 39.17 | 11% |
| Total ESI Shoreline: | | 555,777.32 | 345.34 | |
| Total Shoreline: | | 416,585.49 | 258.85 | |

Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov



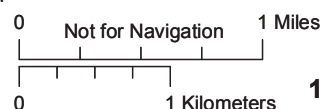


Map 27A

NY/ NJ Metropolitan Area



SEE BACK OF MAP
for details about mapped species and other
species that occur in the mapped area.
Data Published: February 2016



1:50,000



Map 27A
New York and New Jersey Metropolitan Area

BIOLOGICAL RESOURCES

Note: An asterisk (*) indicates that life stage occurs in this range but not in all months included

DISPLAYED ON MAP

BIRDS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--------|------------|------------------------|-------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 259 | Raptor | Endangered raptor 2 | Wintering | T/E | | - | | | | | | | | | | | | | - | - | - | - |
| 260 | Raptor | Endangered raptor 2 | Nesting | T/E | | 1 Pair | | | | | | | | | | | | | - | - | - | - |
| 268 | Gull/Tern | Least tern | Nesting | T/E | | - | | | | | | | | | | | | | May-Sep | - | - | - |
| 272 | Raptor | Northern harrier | Nesting | T/E | | 1 Pair | | | | | | | | | | | | | Apr-Aug | - | - | - |
| 290 | Raptor | Threatened raptor | Nesting | -/T | | 1 Pair | | | | | | | | | | | | | Apr-Jul | - | - | - |
| 332 | Wading | BC night-heron | Nesting | -/T | | - | | | | | | | | | | | | | Mar-Jul | - | - | - |
| 357 | Gull/Tern | Least tern | Nesting | T/E | | - | | | | | | | | | | | | | May-Sep | - | - | - |
| | Shorebird | Piping plover | Nesting | E/E | T | - | | | | | | | | | | | | | Apr-Aug | - | - | - |
| 359 | Shorebird | Red knot | Migration | -/E | T | - | | | | | | | | | | | | | May | May | Sep | - |
| 370 | Waterfowl | American black duck | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | American wigeon | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Brant | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Bufflehead | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Canada goose | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Gadwall | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Mallard | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Red-breasted merganser | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Ruddy duck | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Waterfowl | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| 371 | Waterfowl | American wigeon | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Brant | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Bufflehead | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Canada goose | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Mallard | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Red-breasted merganser | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Scaup | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Waterfowl | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| 372 | Waterfowl | Brant | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Canada goose | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Scaup | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Waterfowl | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| 373 | Waterfowl | American wigeon | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Bufflehead | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Mallard | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Red-breasted merganser | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| 374 | Waterfowl | American black duck | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Bufflehead | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |

BIRDS (continued)

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Molt |
|--------|------------|------------------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | |
| | Waterfowl | Hooded merganser | Wintering | | | 100S | | | | | | | | | | | | | - |
| | Waterfowl | Mallard | Wintering | | | 1000S | | | | | | | | | | | | | - |
| | Waterfowl | Ruddy duck | Wintering | | | 100S | | | | | | | | | | | | | - |

FISH

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Adults |
|--------|------------|-------------------|----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | |
| 500 | Diadromous | Alewife | Nursery Area | | | - | | | | | | | | | | | | | - |
| | Diadromous | Alewife | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun |
| | Diadromous | Blueback herring | Nursery Area | | | - | | | | | | | | | | | | | - |
| | Diadromous | Blueback herring | Spawning Area | | | - | | | | | | | | | | | | | Aug-Oct |
| 514 | Diadromous | Atlantic sturgeon | General Distribution | -/E | E | Medium | | | | | | | | | | | | | Mar-Jun |
| 516 | Diadromous | Alewife | Nursery Area | | | - | | | | | | | | | | | | | Mar-Jun |
| | Diadromous | Alewife | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun |
| 518 | Diadromous | Alewife | Migration | | | - | | | | | | | | | | | | | Mar-Jun |

HABITATS & RARE PLANTS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Adults |
|--------|------------|-----------------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|--------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | |
| 538 | Wetland | Swamp-pink | Vulnerable Occurrence | -/E | T | - | | | | | | | | | | | | | - |
| 540 | Plant | Fed. endangered plant | Vulnerable Occurrence | -/E | E | - | | | | | | | | | | | | | - |

REPTILES & AMPHIBIANS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Adults |
|--------|------------|------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | |
| 601 | Turtle | Bog turtle | Vulnerable Occurrence | E/E | T | - | | | | | | | | | | | | | Apr-Oct |


INVERTEBRATES

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Adults |
|--------|------------|-----------------|--------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | |
| 673 | Bivalve | Northern quahog | Concentration Area | | | Historic | | | | | | | | | | | | | Jan-Dec |
| 674 | Bivalve | Blue mussel | Concentration Area | | | Historic | | | | | | | | | | | | | Jan-Dec |
| 675 | Bivalve | Softshell clam | Concentration Area | | | Historic | | | | | | | | | | | | | Jan-Dec |


FISH

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|-------------------|----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|-------|------|--------|-----------|---------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Atlantic sturgeon | General Distribution | -/E | E | Low | | | | | | | | | | | | | - | - | - | Jan-Dec | Oct-Jun |
| | Atlantic sturgeon | Migration | -/E | E | High | | | | | | | | | | | | | - | - | - | May-Jul | May-Jul |


HABITATS & RARE PLANTS

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|------------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|-------|------|--------|-----------|--------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Endangered plant | Vulnerable Occurrence | E/E | E | - | | | | | | | | | | | | | - | - | - | - | - |
| | Rare plant | Vulnerable Occurrence | C/C | C | - | | | | | | | | | | | | | - | - | - | - | - |

REPTILES & AMPHIBIANS




| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Hatch | Internest | Juveniles | Adults |
|---|------------------------|----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|-------|-----------|-----------|---------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Green sea turtle | General Distribution | T/T | T | - | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | K. ridley sea turtle | General Distribution | E/E | E | - | | | | | | | | | | | | | - | - | - | May-Nov | - |
| | Leatherback sea turtle | General Distribution | E/E | E | - | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | Loggerhead sea turtle | General Distribution | T/E | T | - | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |

MARINE MAMMALS

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Mating | Calving | Pupping | Molt |
|---|------------------|----------------------|-----|---|-------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|--------|---------|---------|------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Fin whale | General Distribution | E/E | E | Common | | | | | | | | | | | | | - | - | - | - |
| | Humpback whale | General Distribution | E/E | E | Common | | | | | | | | | | | | | - | - | - | - |
| | N.A. right whale | General Distribution | E/E | E | Uncommon, Regular | | | | | | | | | | | | | - | - | - | - |





ALSO PRESENT IN MAPPED AREA (GENERAL DISTRIBUTION)

BIRDS

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--|---------------------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|---------|---------|------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Bonaparte's gull | | | | | | | | | | | | | | | | | - | - | - | - |
| | Herring gull | | | | | | | | | | | | | | | | | - | - | - | - |
|   | Laughing gull | | | | | | | | | | | | | | | | | - | - | - | - |
| | Northern gannet | | | | | | | | | | | | | | | | | - | - | - | - |
| | Common eider | | | | | | | | | | | | | | | | | - | - | - | - |
| | Long-tailed duck | | | | | | | | | | | | | | | | | - | - | - | - |
| | Surf scoter | | | | | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | | | | | | | | | | | | | | | | | - | - | - | - |
| | White-winged scoter | | | | | | | | | | | | | | | | | - | - | - | - |


FISH

Monthly Presence





| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|---------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|----------|----------|----------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Alewife | | | | | | | | | | | | | - | - | - | Jan-Dec | Mar-Jun |
| | Alewife | | | | | | | | | | | | | - | - | - | Nov-Apr | Nov-Apr |
| | American eel | | | | | | | | | | | | | - | - | - | Jan-Dec | Sep-Nov |
| | American eel | | | | | | | | | | | | | - | - | Feb-Apr | Jan-Dec | Sep-Dec |
| | American eel | | | | | | | | | | | | | - | - | Jan-Feb | - | Sep-Dec |
| | American shad | | | | | | | | | | | | | - | - | - | Nov-Mar | Mar-May |
| | American shad | | | | | | | | | | | | | - | - | - | Nov-Apr | Nov-Apr |
| | Blueback herring | | | | | | | | | | | | | - | - | - | Nov-Apr | Nov-Apr |
| | Blueback herring | | | | | | | | | | | | | - | - | - | Jan-Dec | Mar-Jun |
| | Striped bass | | | | | | | | | | | | | - | - | - | Mar-Nov | Mar-Nov |
|  | Striped bass | | | | | | | | | | | | | - | - | - | Mar-Dec | Mar-Dec |
| | Atlantic croaker | | | | | | | | | | | | | - | - | - | Jun-Jan | Jun-Oct |
| | Atlantic croaker | | | | | | | | | | | | | - | - | - | - | Jun-Dec |
| | Atlantic herring | | | | | | | | | | | | | - | - | - | Nov-May | Nov-May |
| | Atlantic herring | | | | | | | | | | | | | - | - | - | Nov-Apr | Nov-Apr |
| | Atlantic menhaden | | | | | | | | | | | | | Sep-Dec | Sep-Dec | Oct-Dec | Oct-Apr | Oct-Apr |
| | Atlantic menhaden | | | | | | | | | | | | | May-Nov* | May-Nov* | May-Nov* | Jan-Dec | Mar-Sep |
| | Bay anchovy | | | | | | | | | | | | | May-Nov | May-Nov | May-Dec | Jan-Dec | Jan-Dec |
| | Bay anchovy | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Apr-Oct |
| | Black drum | | | | | | | | | | | | | - | - | - | - | Mar-Oct |
| | Black sea bass | | | | | | | | | | | | | May-Oct | May-Oct | May-Nov | Mar-Nov | Mar-Nov |
| | Black sea bass | | | | | | | | | | | | | - | - | - | May-Oct | Jun-Sep |
| | Bluefish | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Bluefish | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | Northern kingfish | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | Northern kingfish | | | | | | | | | | | | | - | - | - | Jun-Nov | Jun-Nov |
| | Scup | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Scup | | | | | | | | | | | | | - | - | - | Apr-Dec | Apr-Dec |
| | Spot | | | | | | | | | | | | | - | - | - | Jun-Nov | Jun-Nov |
| | Spot | | | | | | | | | | | | | - | - | - | Sep-Nov | Jun-Nov |
| | Summer flounder | | | | | | | | | | | | | Sep-Nov | Sep-Nov | Sep-Dec | Apr-Nov | Apr-Nov |
| | Summer flounder | | | | | | | | | | | | | - | - | - | Apr-Aug | May-Sep |
| | Weakfish | | | | | | | | | | | | | Jun-Aug | Jun-Aug | Jun-Aug | Jun-Nov | May-Dec |
| | Weakfish | | | | | | | | | | | | | Apr-Sep | Apr-Sep | May-Sep | Apr-Nov | Apr-Nov |
| | Weakfish | | | | | | | | | | | | | - | - | - | May-Nov | Apr-Sep |
| | White perch | | | | | | | | | | | | | - | - | - | Nov-Mar | Nov-Mar |
| | Windowpane | | | | | | | | | | | | | Mar-Nov* | Mar-Nov* | Apr-Nov* | Jan-Dec | Jan-Dec |
| | Windowpane | | | | | | | | | | | | | May-Aug | May-Aug | May-Oct | Jan-Dec | Jan-Dec |
| | Winter flounder | | | | | | | | | | | | | Jan-Mar | Jan-Mar | Jan-Apr | Jan-Dec | Nov-Apr |
| | Winter flounder | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
|  | Atlantic silverside | | | | | | | | | | | | | - | - | - | Jan-Apr | Jan-Apr |
| | Killifish | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | Silversides | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
|  | American sand lance | | | | | | | | | | | | | - | - | - | - | Oct-Jun |

New York and New Jersey Metropolitan Area: Map 27A


FISH (continued)

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|---------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|----------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| | American sand lance | | | | | | | | | | | | | Nov-Apr | Nov-Apr | Nov-Apr | Jan-Dec | Nov-Apr |
| | Atlantic cod | | | | | | | | | | | | | - | - | - | Nov-Apr | Nov-Apr |
| | Clearnose skate | | | | | | | | | | | | | - | - | - | Apr-Nov | Nov-Apr |
| | Goosefish | | | | | | | | | | | | | - | - | - | - | Jan-Jun |
| | Little skate | | | | | | | | | | | | | Jan-Dec | Jan-Dec | - | Jan-Dec | Jan-Dec |
| | Ocean pout | | | | | | | | | | | | | - | - | - | Dec-Aug | Dec-Aug |
| | Red hake | | | | | | | | | | | | | Jun-Sep | Jun-Sep | Jul-Oct | Jan-Dec | Jan-Dec |
| | Silver hake | | | | | | | | | | | | | May-Oct | May-Oct | May-Oct | Jan-Dec | Jan-Dec |
| | Smooth dogfish | | | | | | | | | | | | | May-Jun | May-Oct | - | Apr-Oct | Apr-Oct |
| | Tautog | | | | | | | | | | | | | May-Sep | May-Sep | May-Sep | May-Sep | May-Sep |
| | Tautog | | | | | | | | | | | | | May-Aug | May-Aug | Jun-Aug | Jan-Dec | Jan-Dec |
| | Tautog | | | | | | | | | | | | | May-Aug | May-Aug | Jun-Aug | Mar-Nov | Mar-Nov |
| | Winter skate | | | | | | | | | | | | | - | - | - | Sep-May | Sep-Nov |
|  | Atlantic mackerel | | | | | | | | | | | | | - | - | - | Nov-Apr | - |
| | Atlantic mackerel | | | | | | | | | | | | | - | - | - | Nov-Apr* | Nov-Apr* |
| | Bluefin tuna | | | | | | | | | | | | | - | - | - | Jun-Sep | - |
| | Butterfish | | | | | | | | | | | | | May-Aug | May-Aug | May-Oct | May-Dec | May-Dec |
| | Dusky shark | | | | | | | | | | | | | - | - | - | May-Sep | May-Sep |
| | Sand tiger | | | | | | | | | | | | | - | - | - | Jun-Oct | - |
| | Sandbar shark | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Shortfin mako | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Skipjack tuna | | | | | | | | | | | | | - | - | - | Jun-Sep | Jun-Sep |
| | Spiny dogfish | | | | | | | | | | | | | - | - | - | Oct-Apr | Oct-Apr |
| | Thresher shark | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | Tiger shark | | | | | | | | | | | | | - | - | - | Jul-Oct | - |

INVERTEBRATES

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|-------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|----------|----------|----------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|    | Atlantic surfclam | | | | | | | | | | | | | Jun-Oct* | Jun-Oct* | Jun-Oct* | Jan-Dec | Jan-Dec |
| | Longfin squid | | | | | | | | | | | | | - | - | - | - | Jan-Dec |
| | Blue crab | | | | | | | | | | | | | May-Oct | Jun-Oct | Jun-Oct | Jan-Dec | Jan-Dec |
| | Blue crab | | | | | | | | | | | | | May-Oct | - | - | Jan-Dec | Jan-Dec |
| | Blue crab | | | | | | | | | | | | | - | - | Jun-Oct | - | Aug-Mar |
| | Horseshoe crab | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Horseshoe crab | | | | | | | | | | | | | - | - | - | Aug-Mar | Aug-Mar |
|  | American lobster | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |

MARINE MAMMALS

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Mating | Calving | Pupping | Molt |
|---|--------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|--------|---------|---------|------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Bottlenose dolphin | | | | | | | | | | | | | - | - | - | - |
| | Harbor porpoise | | | | | | | | | | | | | - | - | - | - |

For additional information about species locations and extent, reference the underlying GIS data available from response.restoration.noaa.gov

SHORELINE RESOURCES

ESI POLYGON HABITAT TYPES



| ESI Rank | Habitat Classification | Area (Acres) | Area (Sq. Miles) |
|----------|---------------------------------|--------------|------------------|
| 10A | Salt and Brackish Water Marshes | 110.24 | 0.17 |
| 10B | Freshwater Marshes | 38.88 | 0.06 |
| 10C | Swamps | 581.08 | 0.91 |
| 10D | Scrub and Shrub Wetlands | 96.29 | 0.15 |
| 9A | Sheltered Tidal Flats | 30.17 | 0.05 |
| 7 | Exposed Tidal Flats | 26.08 | 0.04 |

ESI SHORELINE HABITAT TYPES

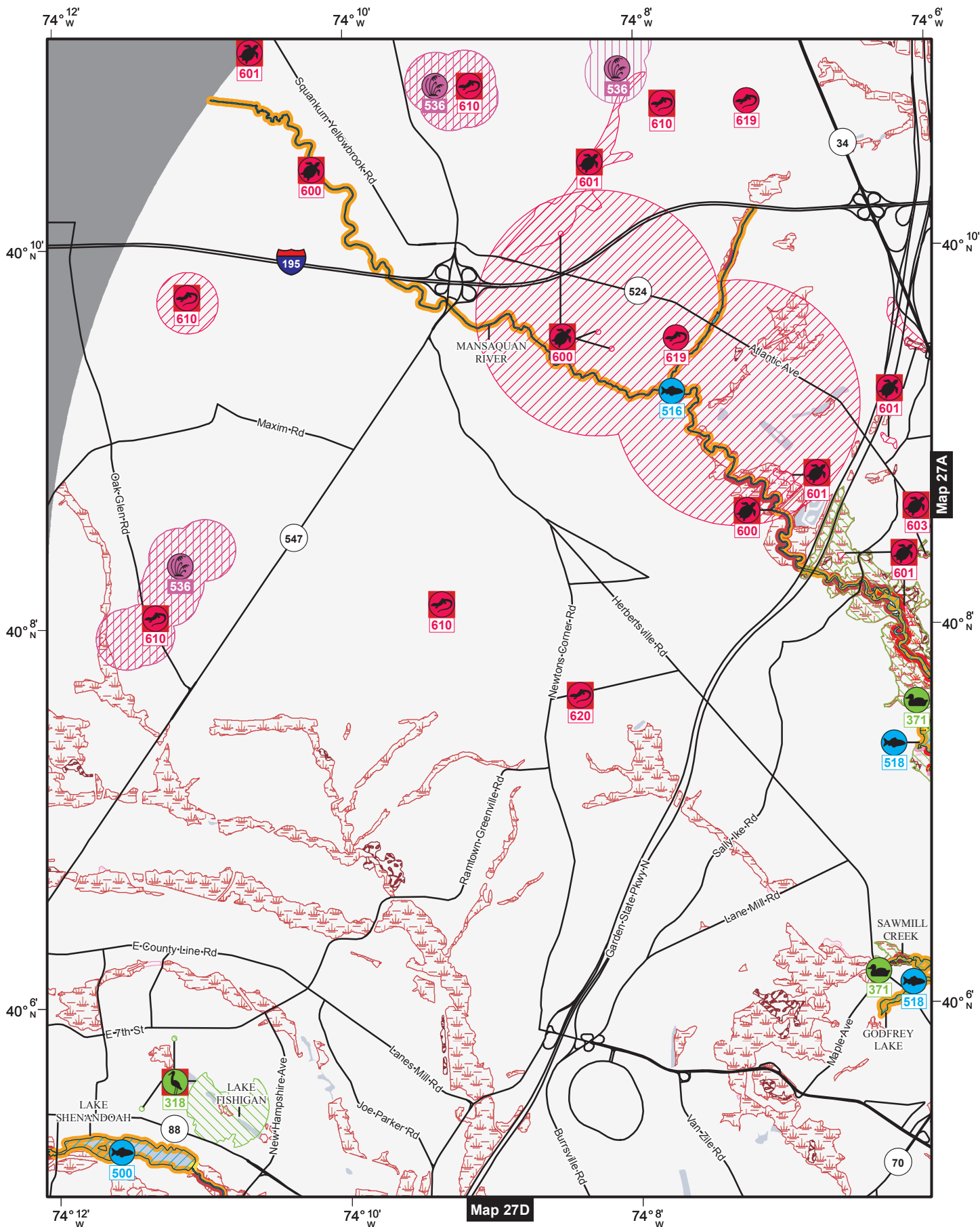
| ESI Rank | Shoreline Habitat Classification | Length (Meters) | Length (Miles) | % of ESI Shoreline |
|----------|--------------------------------------|-----------------|----------------|--------------------|
| 10A | Salt and Brackish Water Marshes | 10,710.27 | 6.66 | 11% |
| 10B | Freshwater Marshes | 591.09 | 0.37 | 1% |
| 10C | Swamps | 317.40 | 0.20 | < 1% |
| 9A | Sheltered Tidal Flats | 3,065.43 | 1.90 | 3% |
| 9B | Vegetated Low Banks | 21,672.75 | 13.47 | 23% |
| 8B | Sheltered, Solid Man-Made Structures | 29,883.25 | 18.57 | 31% |
| 8C | Sheltered Riprap | 925.39 | 0.58 | 1% |
| 7 | Exposed Tidal Flats | 3,133.67 | 1.95 | 3% |
| 6B | Riprap | 2,867.16 | 1.78 | 3% |
| 5 | Mixed Sand and Gravel Beaches | 148.33 | 0.09 | < 1% |
| 4 | Coarse Grained Sand Beaches | 3,582.49 | 2.23 | 4% |
| 3A | Fine to Medium Grained Sand Beaches | 18,003.21 | 11.19 | 19% |
| 1B | Exposed, Solid Man-Made Structures | 608.28 | 0.38 | 1% |

Total ESI Shoreline: 95,508.72 Total ESI Shoreline: 59.35
Total Shoreline: 73,132.32 Total Shoreline: 45.44

Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov





Map 27B
NY/ NJ Metropolitan Area



SEE BACK OF MAP
 for details about mapped species and other
 species that occur in the mapped area.
 Data Published: February 2016

0 Not for Navigation 1 Miles
 0 1 Kilometers

1:50,000



Map 27B
New York and New Jersey Metropolitan Area

BIOLOGICAL RESOURCES

Note: An asterisk (*) indicates that life stage occurs in this range but not in all months included

DISPLAYED ON MAP

BIRDS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--------|------------|------------------------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 318 | Wading | Great blue heron | Nesting | - | - | - | | | | | | | | | | | | | Mar-Jul | - | - | - |
| 371 | Waterfowl | American wigeon | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Brant | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Bufflehead | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Canada goose | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Mallard | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Red-breasted merganser | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Scaup | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Waterfowl | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |

FISH

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------|------------|------------------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 500 | Diadromous | Alewife | Nursery Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | Jun-Aug | Aug-Oct | Mar-Jun |
| | Diadromous | Alewife | Spawning Area | | | - | | | | | | | | | | | | | - | - | - | - | Mar-Jun |
| | Diadromous | Blueback herring | Nursery Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | Jun-Aug | Aug-Oct | Mar-Jun |
| | Diadromous | Blueback herring | Spawning Area | | | - | | | | | | | | | | | | | - | - | - | - | Mar-Jun |
| 516 | Diadromous | Alewife | Nursery Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | Jun-Aug | Aug-Oct | Mar-Jun |
| | Diadromous | Alewife | Spawning Area | | | - | | | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |
| 518 | Diadromous | Alewife | Migration | | | - | | | | | | | | | | | | | - | - | - | - | Mar-Jun |

HABITATS & RARE PLANTS



| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Hatch | Internest | Juveniles | Adults |
|--------|------------|-------------|-----------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|-------|-----------|-----------|--------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 536 | Wetland | Vernal pool | Vulnerable Occurrence | | | - | | | | | | | | | | | | | - | - | - | - | - |

REPTILES & AMPHIBIANS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Hatch | Internest | Juveniles | Adults |
|--------|------------|-----------------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|-----------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 600 | Turtle | Wood turtle | Vulnerable Occurrence | C/T | | - | | | | | | | | | | | | | - | - | - | Mar-Nov | Mar-Nov |
| 601 | Turtle | Bog turtle | Vulnerable Occurrence | E/E | T | - | | | | | | | | | | | | | - | - | - | Apr-Oct | Apr-Oct |
| 603 | Turtle | Eastern box turtle | Vulnerable Occurrence | C/C | | - | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov |
| 610 | Amphibian | Pine Barrens treefrog | Nesting | -/T | | - | | | | | | | | | | | | | May-Jun | May-Jul | - | - | May-Jun |
| 619 | Snake | Northern pinesnake | Vulnerable Occurrence | | | - | | | | | | | | | | | | | - | - | - | Apr-Oct | Apr-Oct |
| 620 | Snake | Timber rattlesnake | Nesting | -/E | | - | | | | | | | | | | | | | - | - | - | May-Sep | May-Sep |

HABITATS & RARE PLANTS


Monthly Presence

| Subelement | Species | Mapping Qualifier | S | F | Concentration | J | F | M | A | M | J | J | A | S | O | N | D |
|---|------------------|-----------------------|-----|---|---------------|---|---|---|---|---|---|---|---|---|---|---|---|
|  | Endangered plant | Vulnerable Occurrence | E/E | | - | | | | | | | | | | | | |
| | Rare plant | Vulnerable Occurrence | C/C | | - | | | | | | | | | | | | |
|  | Swamp-pink | Vulnerable Occurrence | -/E | T | - | | | | | | | | | | | | |

ALSO PRESENT IN MAPPED AREA (GENERAL DISTRIBUTION)






BIRDS

Monthly Presence

| Subelement | Species | J | F | M | A | M | J | J | A | S | O | N | D | Nest | Mig.(S) | Mig.(F) | Molt |
|---|-----------|---|---|---|---|---|---|---|---|---|---|---|---|------|---------|---------|------|
|  | Waterfowl | | | | | | | | | | | | | - | - | - | - |

FISH

Monthly Presence

| Subelement | Species | J | F | M | A | M | J | J | A | S | O | N | D | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|---------------------|---|---|---|---|---|---|---|---|---|---|---|---|----------|----------|----------|-----------|---------|
|  | Alewife | | | | | | | | | | | | | - | - | - | Jan-Dec | Mar-Jun |
| | American eel | | | | | | | | | | | | | - | - | Feb-Apr | Jan-Dec | Sep-Dec |
| | American eel | | | | | | | | | | | | | - | - | - | Jan-Dec | Sep-Nov |
| | American shad | | | | | | | | | | | | | - | - | - | Nov-Mar | Mar-May |
| | Blueback herring | | | | | | | | | | | | | - | - | - | Jan-Dec | Mar-Jun |
|  | Striped bass | | | | | | | | | | | | | - | - | - | Mar-Dec | Mar-Dec |
| | Atlantic herring | | | | | | | | | | | | | - | - | - | Nov-Apr | Nov-Apr |
| | Atlantic menhaden | | | | | | | | | | | | | May-Nov* | May-Nov* | May-Nov* | Jan-Dec | Mar-Sep |
| | Bay anchovy | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Apr-Oct |
| | Black sea bass | | | | | | | | | | | | | - | - | - | May-Oct | Jun-Sep |
|  | Bluefish | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Northern kingfish | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | Scup | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Spot | | | | | | | | | | | | | - | - | - | Jun-Nov | Jun-Nov |
| | Summer flounder | | | | | | | | | | | | | - | - | - | Apr-Aug | May-Sep |
|  | Weakfish | | | | | | | | | | | | | - | - | - | May-Nov | Apr-Sep |
| | White perch | | | | | | | | | | | | | - | - | - | Nov-Mar | Nov-Mar |
| | Windowpane | | | | | | | | | | | | | May-Aug | May-Aug | May-Oct | Jan-Dec | Jan-Dec |
| | Winter flounder | | | | | | | | | | | | | Jan-Mar | Jan-Mar | Jan-Apr | Jan-Dec | Nov-Apr |
| | Killifish | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
|  | Silversides | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | American sand lance | | | | | | | | | | | | | Nov-Apr | Nov-Apr | Nov-Apr | Jan-Dec | Nov-Apr |
| | Smooth dogfish | | | | | | | | | | | | | May-Jun | May-Oct | - | Apr-Oct | Apr-Oct |
| | Tautog | | | | | | | | | | | | | May-Sep | May-Sep | May-Sep | May-Sep | May-Sep |
| | Atlantic mackerel | | | | | | | | | | | | | - | - | - | Nov-Apr | - |

INVERTEBRATES

| Subelement | Species | Monthly Presence | | | | | | | | | | | |
|------------|-----------|------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D |
| | | Jan-Dec | Jan-Dec | Jan-Dec | Jan-Dec | Jan-Dec | Jan-Dec | Jan-Dec | Jan-Dec | Jan-Dec | Jan-Dec | Jan-Dec | Jan-Dec |
| Crab | Blue crab | | | | | | | | | | | | |
| | Blue crab | | | | | | | | | | | | |

For additional information about species locations and extent, reference the underlying GIS data available from response.restoration.noaa.gov

SHORELINE RESOURCES

ESI POLYGON HABITAT TYPES

| ESI Rank | Habitat Classification | Area (Acres) | Area (Sq. Miles) |
|----------|---------------------------------|--------------|------------------|
| 10A | Salt and Brackish Water Marshes | 36.22 | 0.06 |
| 10B | Freshwater Marshes | 19.63 | 0.03 |
| 10C | Swamps | 1,702.67 | 2.66 |
| 10D | Scrub and Shrub Wetlands | 93.90 | 0.15 |

ESI SHORELINE HABITAT TYPES

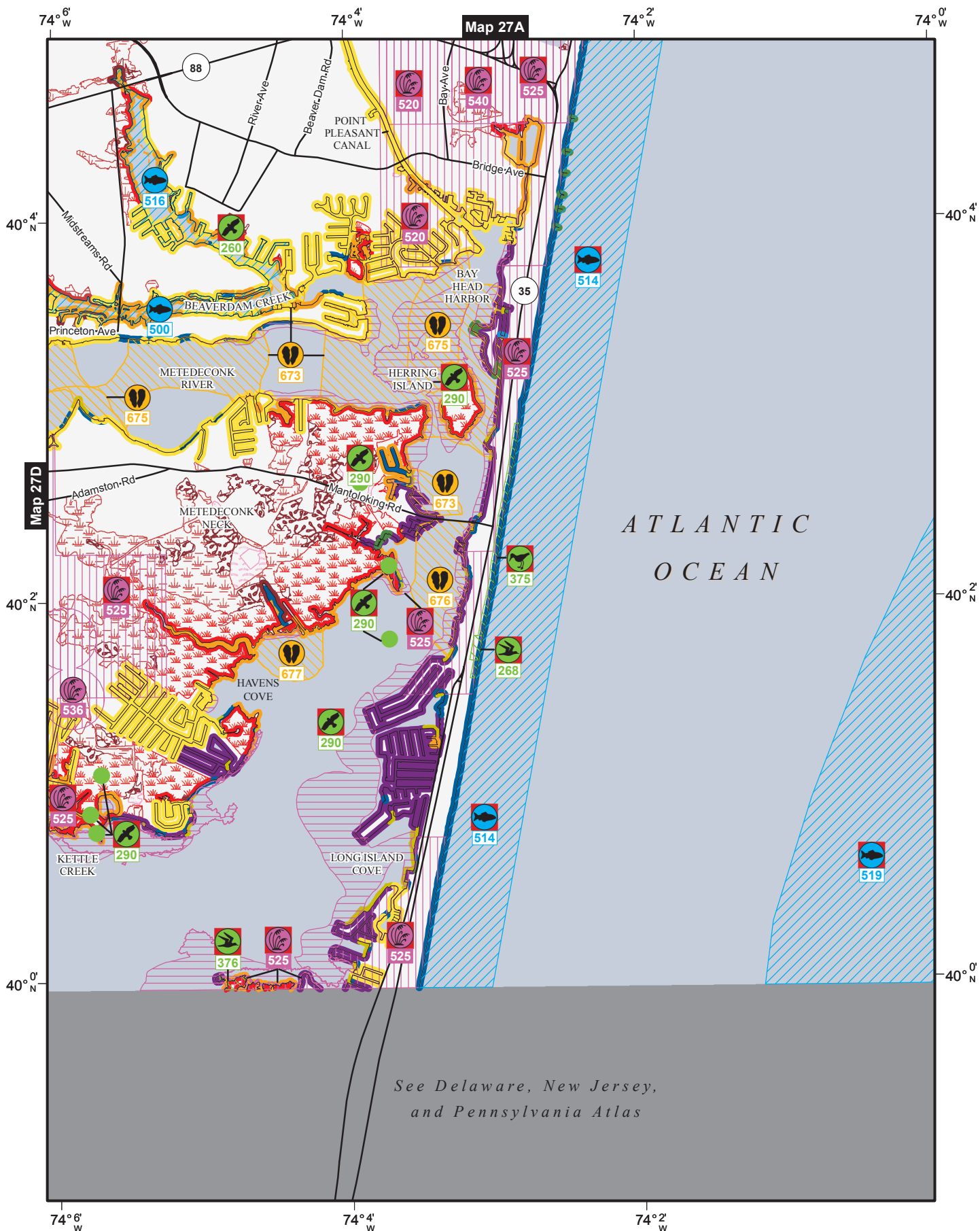
| ESI Rank | Shoreline Habitat Classification | Length (Meters) | Length (Miles) | % of ESI Shoreline |
|----------|--------------------------------------|-----------------|----------------|--------------------|
| 10A | Salt and Brackish Water Marshes | 2,852.27 | 1.77 | 5% |
| 10B | Freshwater Marshes | 145.83 | 0.09 | < 1% |
| 10C | Swamps | 10,060.94 | 6.25 | 18% |
| 10D | Scrub and Shrub Wetlands | 385.26 | 0.24 | 1% |
| 9B | Vegetated Low Banks | 40,946.32 | 25.44 | 75% |
| 8B | Sheltered, Solid Man-Made Structures | 497.66 | 0.31 | 1% |

Total ESI Shoreline: 54,888.29
Total ESI Shoreline: 34.11
Total Shoreline: 41,443.98
Total Shoreline: 25.75

Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov





Map 27C
New York and New Jersey Metropolitan Area

BIOLOGICAL RESOURCES

Note: An asterisk (*) indicates that life stage occurs in this range but not in all months included

DISPLAYED ON MAP

BENTHIC

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | |
|------------|-----------------------|-----------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D |
| SAV | Submersed aquatic veg | High Ecological Value | | | Present | | | | | | | | | | | | |
| SAV | Submersed aquatic veg | High Ecological Value | | | Potential | | | | | | | | | | | | |

BIRDS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|--------|------------|---------------------|-------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | | | |
| 260 | Raptor | Endangered raptor 2 | Nesting | T/E | | 1 Pair | | | | | | | | | | | | - | - | - |
| 268 | Gull/Tern | Least tern | Nesting | T/E | | - | | | | | | | | | | | | May-Sep | - | - |
| 290 | Raptor | Threatened raptor | Nesting | -/T | | 1 Pair | | | | | | | | | | | | Apr-Jul | - | - |
| 375 | Shorebird | Piping plover | Nesting | E/E | T | - | | | | | | | | | | | | Apr-Aug | - | - |
| 376 | Gull/Tern | Common tern | Nesting | T/C | | - | | | | | | | | | | | | May-Sep | - | - |

FISH

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------|------------|-------------------|----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---------|---------|---------|---------|---------|-----------|--------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
| 500 | Diadromous | Alewife | Nursery Area | | | - | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - | | |
| | Diadromous | Alewife | Spawning Area | | | - | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun | | |
| | Diadromous | Blueback herring | Nursery Area | | | - | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - | | |
| 514 | Diadromous | Blueback herring | Spawning Area | | | - | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun | | |
| | Diadromous | Atlantic sturgeon | General Distribution | -/E | E | Medium | | | | | | | | | | | - | - | - | Jan-Dec | Oct-Jun | | |
| 516 | Diadromous | Alewife | Nursery Area | | | - | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - | | |
| | Diadromous | Alewife | Spawning Area | | | - | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun | | |
| 519 | Diadromous | Atlantic sturgeon | General Distribution | -/E | E | Potential | | | | | | | | | | | - | - | - | Jan-Dec | Oct-Jun | | |

HABITATS & RARE PLANTS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | | |
|--------|------------|-----------------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | |
| 520 | Plant | Endangered plant | Vulnerable Occurrence | E/E | | - | | | | | | | | | | | | - | - | - |
| 525 | Plant | Rare plant | Vulnerable Occurrence | C/C | | - | | | | | | | | | | | | - | - | - |
| 536 | Wetland | Vernal pool | Vulnerable Occurrence | | | - | | | | | | | | | | | | - | - | - |
| 540 | Plant | Fed. endangered plant | Vulnerable Occurrence | -/E | E | - | | | | | | | | | | | | - | - | - |

INVERTEBRATES


| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------|------------|-----------------|--------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|----------|----------|----------|---------|-----------|--------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | | | | | | |
| 673 | Bivalve | Northern quahog | Concentration Area | | | Historic | | | | | | | | | | | | May-Sep | May-Sep | May-Sep | Jan-Dec | Jan-Dec | |
| 675 | Bivalve | Softshell clam | Concentration Area | | | Historic | | | | | | | | | | | | Apr-Oct* | Apr-Oct* | Apr-Oct* | Jan-Dec | Jan-Dec | |

INVERTEBRATES (continued)

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Eggs | Larvae | Juveniles | Adults |
|--------|------------|-----------------|--------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|----------|----------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| 676 | Bivalve | Northern quahog | Concentration Area | | | Low | | | | | | | | | | | | | May-Sep | May-Sep | Jan-Dec | Jan-Dec |
| | Bivalve | Softshell clam | Concentration Area | | | Historic | | | | | | | | | | | | | Apr-Oct* | Apr-Oct* | Jan-Dec | Jan-Dec |
| 677 | Bivalve | Northern quahog | Concentration Area | | | Low | | | | | | | | | | | | | May-Sep | May-Sep | Jan-Dec | Jan-Dec |

WIDESPREAD IN MAPPED AREA (> 10 SQUARE KILOMETERS)


BIRDS

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|---|---------------------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|---------|---------|------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Waterfowl | | | | | | | | | | | | | | | | | - | - | - | - |
| | American black duck | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Brant | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Bufflehead | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Canada goose | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Hooded merganser | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Mallard | Wintering | | | 1000S | | | | | | | | | | | | | - | - | - | - |
| | Ruddy duck | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Scaup | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | Wintering | | | 100S | | | | | | | | | | | | | - | - | - | - |


FISH

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|-------------------|----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|-------|------|--------|-----------|---------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Diadromous | | | | | | | | | | | | | | | | | - | - | - | - | Mar-Jun |
| | Alewife | Migration | | | - | | | | | | | | | | | | | - | - | - | - | Mar-Jun |
| | Atlantic sturgeon | General Distribution | -/E | E | Low | | | | | | | | | | | | | - | - | - | - | Jan-Dec |
| | Atlantic sturgeon | Migration | -/E | E | High | | | | | | | | | | | | | - | - | - | - | May-Jul |
| | Blueback herring | Migration | | | - | | | | | | | | | | | | | - | - | - | - | Mar-Jun |

REPTILES & AMPHIBIANS

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest | Hatch | Internest | Juveniles | Adults |
|---|------------------------|----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|-------|-----------|-----------|---------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Turtle | | | | | | | | | | | | | | | | | - | - | - | - | May-Nov |
| | Green sea turtle | General Distribution | T/T | T | - | | | | | | | | | | | | | - | - | - | - | May-Nov |
| | K. ridley sea turtle | General Distribution | E/E | E | - | | | | | | | | | | | | | - | - | - | - | May-Nov |
| | Leatherback sea turtle | General Distribution | E/E | E | - | | | | | | | | | | | | | - | - | - | - | May-Nov |
| | Loggerhead sea turtle | General Distribution | T/E | T | - | | | | | | | | | | | | | - | - | - | - | May-Nov |



MARINE MAMMALS

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | | Mating | Calving | Pupping | Molt |
|---|------------------|----------------------|-----|---|-------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|--------|---------|---------|------|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Whale | | | | | | | | | | | | | | | | | - | - | - | - |
| | Fin whale | General Distribution | E/E | E | Common | | | | | | | | | | | | | - | - | - | - |
| | Humpback whale | General Distribution | E/E | E | Common | | | | | | | | | | | | | - | - | - | - |
| | N.A. right whale | General Distribution | E/E | E | Uncommon, Regular | | | | | | | | | | | | | - | - | - | - |

BIRDS





| Subelement | Species | Monthly Presence | | | | | | | | | | | | Nest | Mig.(S) | Mig.(F) | Molt |
|---|---------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|------|---------|---------|------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Herring gull | | | | | | | | | | | | | - | - | - | - |
| | Laughing gull | | | | | | | | | | | | | - | - | - | - |
| | Northern gannet | | | | | | | | | | | | | - | - | - | - |
|  | Common eider | | | | | | | | | | | | | - | - | - | - |
| | Long-tailed duck | | | | | | | | | | | | | - | - | - | - |
|  | Surf scoter | | | | | | | | | | | | | - | - | - | - |
| | Waterfowl | | | | | | | | | | | | | - | - | - | - |
| | White-winged scoter | | | | | | | | | | | | | - | - | - | - |

FISH




| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|-------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|----------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Alewife | | | | | | | | | | | | | - | - | - | Nov-Apr | Nov-Apr |
| | Alewife | | | | | | | | | | | | | - | - | - | Jan-Dec | Mar-Jun |
| | American eel | | | | | | | | | | | | | - | - | Feb-Apr | Jan-Dec | Sep-Dec |
| | American eel | | | | | | | | | | | | | - | - | - | Jan-Dec | Sep-Nov |
| | American eel | | | | | | | | | | | | | - | - | Jan-Feb | - | Sep-Dec |
| | American shad | | | | | | | | | | | | | - | - | - | Nov-Apr | Nov-Apr |
| | Blueback herring | | | | | | | | | | | | | - | - | - | Nov-Apr | Nov-Apr |
| | Blueback herring | | | | | | | | | | | | | - | - | - | Jan-Dec | Nov-Apr |
| | Striped bass | | | | | | | | | | | | | - | - | - | Mar-Nov | Mar-Nov |
| | Striped bass | | | | | | | | | | | | | - | - | - | Mar-Dec | Mar-Dec |
| | Atlantic croaker | | | | | | | | | | | | | - | - | - | Jun-Dec | Jun-Oct |
|  | Atlantic croaker | | | | | | | | | | | | | - | - | - | - | Jun-Dec |
| | Atlantic herring | | | | | | | | | | | | | - | - | - | Nov-Apr | Nov-Apr |
| | Atlantic herring | | | | | | | | | | | | | - | - | - | Nov-May | Nov-May |
| | Atlantic menhaden | | | | | | | | | | | | | - | - | May-Nov* | Jan-Dec | Mar-Sep |
| | Atlantic menhaden | | | | | | | | | | | | | Sep-Dec | Sep-Dec | Oct-Dec | Oct-Apr | Oct-Apr |
| | Bay anchovy | | | | | | | | | | | | | May-Nov | May-Nov | May-Dec | Jan-Dec | Jan-Dec |
| | Bay anchovy | | | | | | | | | | | | | May-Sep | May-Sep | May-Sep | Jan-Dec | Apr-Oct |
| | Black drum | | | | | | | | | | | | | - | - | - | - | Mar-Oct |
| | Black sea bass | | | | | | | | | | | | | May-Oct | May-Oct | May-Nov | Mar-Nov | Mar-Nov |
| | Black sea bass | | | | | | | | | | | | | - | - | - | May-Oct | Jun-Sep |
| | Bluefish | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | Bluefish | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Northern kingfish | | | | | | | | | | | | | - | - | - | Jun-Nov | Jun-Nov |
| | Northern kingfish | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | Scup | | | | | | | | | | | | | - | - | - | Apr-Dec | Apr-Dec |
| | Scup | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Spot | | | | | | | | | | | | | - | - | - | Sep-Nov | Jun-Nov |
| | Spot | | | | | | | | | | | | | - | - | - | Jun-Nov | Jun-Nov |
| | Summer flounder | | | | | | | | | | | | | - | - | - | May-Sep | May-Sep |
| | Summer flounder | | | | | | | | | | | | | Sep-Nov | Sep-Nov | Sep-Dec | Apr-Nov | Apr-Nov |

New York and New Jersey Metropolitan Area: Map 27C

FISH (continued)

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|---------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|----------|----------|----------|-----------|----------|
| | | | | | | | | | | | | | | | | | | |
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Weakfish | | | | | | | | | | | | | Apr-Sep | Apr-Sep | May-Sep | Apr-Nov | Apr-Nov |
| | Weakfish | | | | | | | | | | | | | - | - | - | May-Nov | Apr-Sep |
| | White perch | | | | | | | | | | | | | Apr-Jun | Apr-Jun | Apr-Jun | Jan-Dec | Jan-Dec |
| | Windowpane | | | | | | | | | | | | | Mar-Nov* | Mar-Nov* | Apr-Nov* | Jan-Dec | Jan-Dec |
| | Windowpane | | | | | | | | | | | | | May-Aug | May-Aug | May-Oct | Jan-Dec | Jan-Dec |
| | Winter flounder | | | | | | | | | | | | | Jan-Mar | Jan-Mar | Jan-Apr | Jan-Dec | Nov-Apr |
| | Winter flounder | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
| | Atlantic silverside | | | | | | | | | | | | | - | - | - | Jan-Apr | Jan-Apr |
| | Killifish | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
| | Silversides | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec |
|  | American sand lance | | | | | | | | | | | | | - | - | - | - | Oct-Jun |
| | American sand lance | | | | | | | | | | | | | Nov-Apr | Nov-Apr | Nov-Apr | Nov-Mar | Nov-Apr |
| | Atlantic cod | | | | | | | | | | | | | - | - | - | Nov-Apr | Nov-Apr |
| | Cleannose skate | | | | | | | | | | | | | - | - | - | Apr-Nov | Apr-Nov |
| | Goosefish | | | | | | | | | | | | | - | - | - | - | Jan-Jun |
| | Little skate | | | | | | | | | | | | | Jan-Dec | Jan-Dec | - | Jan-Dec | Jan-Dec |
| | Little skate | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec | |
| | Ocean pout | | | | | | | | | | | | | - | - | - | Dec-Aug | Dec-Aug |
| | Red hake | | | | | | | | | | | | | Jun-Sep | Jun-Sep | Jul-Oct | Jan-Dec | Jan-Dec |
| | Silver hake | | | | | | | | | | | | | May-Oct | May-Oct | May-Oct | Jan-Dec | Jan-Dec |
|  | Smooth dogfish | | | | | | | | | | | | | May-Jun | May-Oct | - | Apr-Oct | Apr-Oct |
| | Tautog | | | | | | | | | | | | | May-Sep | May-Sep | May-Sep | May-Sep | May-Sep |
| | Tautog | | | | | | | | | | | | | May-Aug | May-Aug | Jun-Aug | Mar-Nov | Mar-Nov |
| | Tautog | | | | | | | | | | | | | May-Aug | May-Aug | Jun-Aug | Jan-Dec | Jan-Dec |
| | Winter skate | | | | | | | | | | | | | - | - | - | Sep-May | Sep-Nov |
| | Albacore | | | | | | | | | | | | | - | - | - | Jun-Sep | - |
| | Atlantic mackerel | | | | | | | | | | | | | - | - | - | Nov-Apr* | Nov-Apr* |
| | Bluefin tuna | | | | | | | | | | | | | - | - | - | Jun-Sep | - |
| | Butterfish | | | | | | | | | | | | | May-Aug | May-Aug | May-Oct | May-Dec | May-Dec |
| | Dusky shark | | | | | | | | | | | | | - | - | - | May-Sep | May-Sep |
|  | Sand tiger | | | | | | | | | | | | | - | - | - | Jun-Oct | - |
| | Sandbar shark | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct |
| | Shortfin mako | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct |
| | Skipjack tuna | | | | | | | | | | | | | - | - | - | Jun-Sep | Jun-Sep |
| | Spiny dogfish | | | | | | | | | | | | | - | - | - | Oct-Apr | Oct-Apr |
| | Thresher shark | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov |
| | Tiger shark | | | | | | | | | | | | | - | - | - | Jul-Oct | - |
| | White shark | | | | | | | | | | | | | - | - | - | Jul-Oct | - |

INVERTEBRATES

| Subelement | | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|----------------|-------------------|------------------|--|--|--|--|--|--|--|--|--|--|--|----------|----------|---------|-----------|---------|
|  | Bivalve | Atlantic surfclam | | | | | | | | | | | | | Jun-Oct* | Jun-Oct* | Jun-Oct | Jan-Dec | Jan-Dec |
| | | Ocean quahog | | | | | | | | | | | | | Jul-Nov | Jul-Nov | Jul-Dec | Jan-Dec | Jan-Dec |
|  | Cephalopod | Longfin squid | | | | | | | | | | | | | - | - | - | - | Jan-Dec |
| | Crab | Blue crab | | | | | | | | | | | | | May-Oct | - | - | Jan-Dec | Jan-Dec |
| | Blue crab | | | | | | | | | | | | | | - | - | Jun-Oct | - | Aug-Mar |
| | Blue crab | | | | | | | | | | | | | | May-Oct | Jun-Oct | Jun-Oct | Jan-Dec | Jan-Dec |
| | Horseshoe crab | | | | | | | | | | | | | | - | - | - | Aug-Mar | Aug-Mar |
| | Horseshoe crab | | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |
|  | Lobster | American lobster | | | | | | | | | | | | | - | - | - | Jan-Dec | Jan-Dec |

MARINE MAMMALS

| <div>Subelement</div> | Species | Monthly Presence | | | | | | | | | | | | Mating | Calving | Pupping | Molt |
|---|--------------------|------------------|---|---|---|---|---|---|---|---|---|---|---|--------|---------|---------|------|
| | | | | | | | | | | | | | | | | | |
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  | Bottlenose dolphin | | | | | | | | | | | | | - | - | - | - |
| | Harbor porpoise | | | | | | | | | | | | | - | - | - | - |

For additional information about species locations and extent, reference the underlying GIS data available from response.restoration.noaa.gov

SHORELINE RESOURCES

ESI POLYGON HABITAT TYPES

| ESI Rank | Habitat Classification | Area (Acres) | Area (Sq. Miles) |
|----------|---------------------------------|--------------|------------------|
| 10A | Salt and Brackish Water Marshes | 800.01 | 1.25 |
| 10B | Freshwater Marshes | 36.49 | 0.06 |
| 10C | Swamps | 513.97 | 0.80 |
| 10D | Scrub and Shrub Wetlands | 187.86 | 0.29 |
| 9A | Sheltered Tidal Flats | 5.28 | 0.01 |
| 7 | Exposed Tidal Flats | 26.80 | 0.04 |

ESI SHORELINE HABITAT TYPES

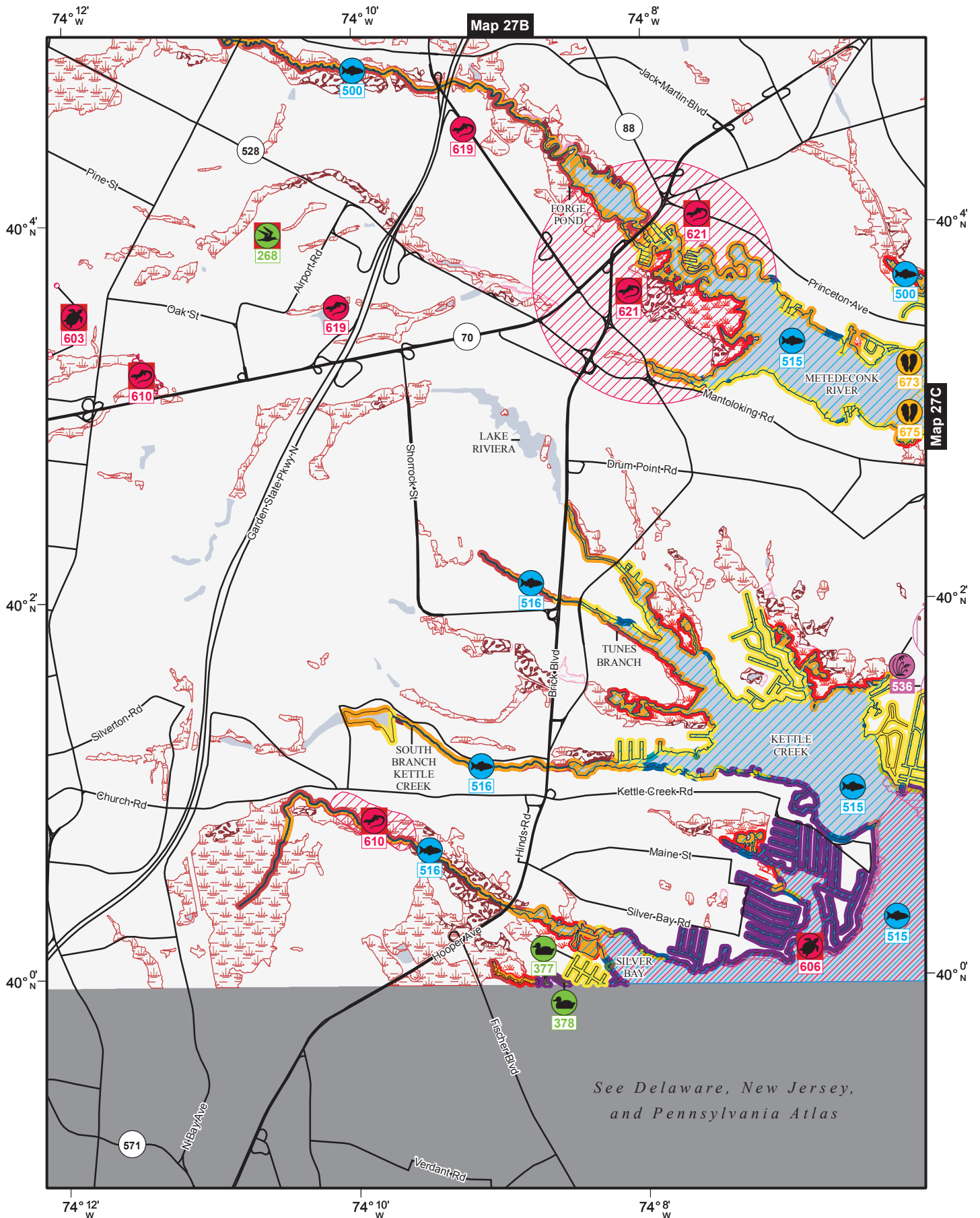
| ESI Rank | Shoreline Habitat Classification | Length (Meters) | Length (Miles) | % of ESI Shoreline |
|----------|--------------------------------------|-----------------|----------------|--------------------|
| 10A | Salt and Brackish Water Marshes | 36,508.84 | 22.69 | 17% |
| 10C | Swamps | 737.71 | 0.46 | < 1% |
| 10D | Scrub and Shrub Wetlands | 1,802.93 | 1.12 | 1% |
| 9A | Sheltered Tidal Flats | 1,407.98 | 0.87 | 1% |
| 9B | Vegetated Low Banks | 44,473.04 | 27.63 | 20% |
| 8B | Sheltered, Solid Man-Made Structures | 72,978.26 | 45.35 | 34% |
| 8C | Sheltered Riprap | 1,761.91 | 1.09 | 1% |
| 7 | Exposed Tidal Flats | 6,118.23 | 3.80 | 3% |
| 6B | Riprap | 832.54 | 0.52 | < 1% |
| 4 | Coarse Grained Sand Beaches | 191.48 | 0.12 | < 1% |
| 3A | Fine to Medium Grained Sand Beaches | 17,596.87 | 10.93 | 8% |
| 1B | Exposed, Solid Man-Made Structures | 33,145.22 | 20.60 | 15% |

Total ESI Shoreline: 217,555.01 Total ESI Shoreline: 135.18
 Total Shoreline: 168,267.84 Total Shoreline: 104.56

Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov

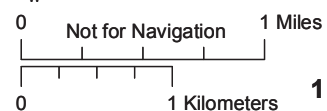




Map 27D
NY/ NJ Metropolitan Area



SEE BACK OF MAP
 for details about mapped species and other
 species that occur in the mapped area.
 Data Published: February 2016



1:50,000



Map 27D
New York and New Jersey Metropolitan Area

BIOLOGICAL RESOURCES

Note: An asterisk (*) indicates that life stage occurs in this range but not in all months included

DISPLAYED ON MAP

BENTHIC

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | |
|------------|-----------------------|-----------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | J | F | M | A | M | J | J | A | S | O | N | D |
| SAV | Submersed aquatic veg | High Ecological Value | | | Present | | | | | | | | | | | | |
| SAV | Submersed aquatic veg | High Ecological Value | | | Potential | | | | | | | | | | | | |

BIRDS

| Map ID | Subelement | Species | Mapping Qualifier | S T/E | F | Concentration | Monthly Presence | | | | | | | | | | | | Nest May-Sep | Mig.(S) | Mig.(F) | Molt |
|--------|------------|---------------------|-------------------|----------|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|-----------------|---------|---------|------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
| | | | | | | | | | | | | | | | | | | | | | | |
| 268 | Gull/Tern | Least tern | Nesting | | | - | | | | | | | | | | | | | | | | |
| 377 | Waterfowl | American black duck | Wintering | | | - | | | | | | | | | | | | | | | | |
| | Waterfowl | Brant | Wintering | | | - | | | | | | | | | | | | | | | | |
| | Waterfowl | Bufflehead | Wintering | | | - | | | | | | | | | | | | | | | | |
| | Waterfowl | Canada goose | Wintering | | | - | | | | | | | | | | | | | | | | |
| | Waterfowl | Hooded merganser | Wintering | | | - | | | | | | | | | | | | | | | | |
| | Waterfowl | Mallard | Wintering | | | - | | | | | | | | | | | | | | | | |
| | Waterfowl | Ruddy duck | Wintering | | | - | | | | | | | | | | | | | | | | |
| | Waterfowl | Scaup | Wintering | | | - | | | | | | | | | | | | | | | | |
| | Waterfowl | Waterfowl | Wintering | | | - | | | | | | | | | | | | | | | | |
| | Waterfowl | Waterfowl | Wintering | | | - | | | | | | | | | | | | | | | | |
| 378 | Waterfowl | American black duck | Wintering | | | - | | | | | | | | | | | | | | | | |
| | Waterfowl | Brant | Wintering | | | - | | | | | | | | | | | | | | | | |
| | Waterfowl | Bufflehead | Wintering | | | - | | | | | | | | | | | | | | | | |
| | Waterfowl | Canada goose | Wintering | | | - | | | | | | | | | | | | | | | | |
| | Waterfowl | Hooded merganser | Wintering | | | - | | | | | | | | | | | | | | | | |
| | Waterfowl | Mallard | Wintering | | | - | | | | | | | | | | | | | | | | |
| | Waterfowl | Ruddy duck | Wintering | | | - | | | | | | | | | | | | | | | | |
| | Waterfowl | Scaup | Wintering | | | - | | | | | | | | | | | | | | | | |

FISH

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|--------|------------|------------------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---------|---------|---------|-----------|---------|
| | | | | | | | J | F | M | A | M | J | J | A | S | O | N | | | | |
| 500 | Diadromous | Alewife | Nursery Area | | | - | | | | | | | | | | | | - | - | - | - |
| | Diadromous | Alewife | Spawning Area | | | - | | | | | | | | | | | Mar-Jun | Mar-Jun | Jun-Aug | Aug-Oct | Mar-Jun |
| | Diadromous | Blueback herring | Nursery Area | | | - | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - |
| | Diadromous | Blueback herring | Spawning Area | | | - | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |
| 515 | Diadromous | Alewife | Migration | | | - | | | | | | | | | | | - | - | - | - | Mar-Jun |
| | Diadromous | Blueback herring | Migration | | | - | | | | | | | | | | | - | - | - | - | Mar-Jun |
| 516 | Diadromous | Alewife | Nursery Area | | | - | | | | | | | | | | | - | - | Jun-Aug | Aug-Oct | - |
| | Diadromous | Alewife | Spawning Area | | | - | | | | | | | | | | | Mar-Jun | Mar-Jun | - | - | Mar-Jun |

HABITATS & RARE PLANTS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | |
|--------|------------|-------------|-----------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|
| 536 | Wetland | Vernal pool | Vulnerable Occurrence | | | - | J | F | M | A | M | J | J | A | S | O | N | D |
| | | | | | | | | | | | | | | | | | | |

REPTILES & AMPHIBIANS

| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | |
|--------|------------|-----------------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|
| 603 | Turtle | Eastern box turtle | Vulnerable Occurrence | C/C | | - | J | F | M | A | M | J | J | A | S | O | N | D |
| 606 | Turtle | Green sea turtle | General Distribution | T/T | T | - | | | | | | | | | | | | |
| | Turtle | K. ridley sea turtle | General Distribution | E/E | E | - | | | | | | | | | | | | |
| | Turtle | Loggerhead sea turtle | General Distribution | T/E | T | - | | | | | | | | | | | | |
| 610 | Amphibian | Pine Barrens treefrog | Nesting | -/T | | - | | | | | | | | | | | | |
| 619 | Snake | Northern pinesnake | Vulnerable Occurrence | | | - | | | | | | | | | | | | |
| 621 | Amphibian | Pine Barrens treefrog | Vulnerable Occurrence | -/T | | - | | | | | | | | | | | | |

INVERTEBRATES



| Map ID | Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | |
|--------|------------|-----------------|--------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|
| 673 | Bivalve | Northern quahog | Concentration Area | | | Historic | J | F | M | A | M | J | J | A | S | O | N | D |
| 675 | Bivalve | Softshell clam | Concentration Area | | | Historic | | | | | | | | | | | | |

WIDESPREAD IN MAPPED AREA (> 10 SQUARE KILOMETERS)

BIRDS

| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | |
|---|---------------------|-------------------|---|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|
|  Waterfowl | American black duck | Wintering | | | 100S | J | F | M | A | M | J | J | A | S | O | N | D |
| | Brant | Wintering | | | 100S | | | | | | | | | | | | |
| | Bufflehead | Wintering | | | 100S | | | | | | | | | | | | |
| | Canada goose | Wintering | | | 1000S | | | | | | | | | | | | |
| | Hooded merganser | Wintering | | | 100S | | | | | | | | | | | | |
| | Mallard | Wintering | | | 1000S | | | | | | | | | | | | |
| | Ruddy duck | Wintering | | | 100S | | | | | | | | | | | | |
| | Scaup | Wintering | | | 100S | | | | | | | | | | | | |
| | Waterfowl | Wintering | | | 100S | | | | | | | | | | | | |

HABITATS & RARE PLANTS




| Subelement | Species | Mapping Qualifier | S | F | Concentration | Monthly Presence | | | | | | | | | | | |
|---|------------------|-----------------------|-----|---|---------------|------------------|---|---|---|---|---|---|---|---|---|---|---|
|  Plant | Endangered plant | Vulnerable Occurrence | E/E | | - | J | F | M | A | M | J | J | A | S | O | N | D |
| | Rare plant | Vulnerable Occurrence | C/C | | - | | | | | | | | | | | | |
|  Wetland | Swamp-pink | Vulnerable Occurrence | -/E | T | - | | | | | | | | | | | | |

ALSO PRESENT IN MAPPED AREA (GENERAL DISTRIBUTION)


BIRDS

|  Subelement | Species | J | F | M | A | M | J | J | A | S | O | N | D | Nest | Mig.(S) | Mig.(F) | Molt |
|--|-----------|---|---|---|---|---|---|---|---|---|---|---|---|------|---------|---------|------|
| Waterfowl | Waterfowl | | | | | | | | | | | | | - | - | - | - |

FISH

| Subelement | | Species | Monthly Presence | | | | | | | | | | | | Spawn | Eggs | Larvae | Juveniles | Adults |
|---|--------------------|---------------------|------------------|---|---|---|---|---|---|---|---|---|---|---------|---------|---------|----------|-----------|---------|
| | | | J | F | M | A | M | J | J | A | S | O | N | D | | | | | |
|  | Diadromous | Alewife | | | | | | | | | | | | | - | - | - | Jan-Dec | Mar-Jun |
| | | American eel | | | | | | | | | | | | | - | - | - | Jan-Dec | Sep-Nov |
| | | American eel | | | | | | | | | | | | | - | - | Feb-Apr | Jan-Dec | Sep-Dec |
| | | Blueback herring | | | | | | | | | | | | | - | - | - | Jan-Dec | Mar-Jun |
|  | Estuarine Nursery | Striped bass | | | | | | | | | | | | | - | - | - | Mar-Dec | Mar-Dec |
| | | Atlantic croaker | | | | | | | | | | | | | - | - | - | Jun-Dec | Jun-Oct |
| | | Atlantic herring | | | | | | | | | | | | | - | - | - | Nov-Apr | Nov-Apr |
| | | Atlantic menhaden | | | | | | | | | | | | | - | - | May-Nov* | Jan-Dec | Mar-Sep |
| | Bay anchovy | | | | | | | | | | | | | May-Sep | May-Sep | May-Sep | Jan-Dec | Apr-Oct | |
| | Black sea bass | | | | | | | | | | | | | - | - | - | May-Oct | Jun-Sep | |
| | Bluefish | | | | | | | | | | | | | - | - | - | May-Oct | May-Oct | |
| | Northern kingfish | | | | | | | | | | | | | - | - | - | May-Nov | May-Nov | |
| | Scup | | | | | | | | | | | | | - | - | - | Jun-Oct | Jun-Oct | |
| | Spot | | | | | | | | | | | | | - | - | - | Jun-Nov | Jun-Nov | |
| | Summer flounder | | | | | | | | | | | | | - | - | - | May-Sep | May-Sep | |
| | Weakfish | | | | | | | | | | | | | - | - | - | May-Nov | Apr-Sep | |
| | White perch | | | | | | | | | | | | | Apr-Jun | Apr-Jun | Apr-Jun | Jan-Dec | Jan-Dec | |
| | Winduppane | | | | | | | | | | | | | May-Aug | May-Aug | May-Oct | Jan-Dec | Jan-Dec | |
| | Winter flounder | | | | | | | | | | | | | Jan-Mar | Jan-Mar | Jan-Apr | Jan-Dec | Nov-Apr | |
| | Killifish | | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec | |
|  | Estuarine Resident | Silversides | | | | | | | | | | | | May-Aug | May-Aug | May-Aug | Jan-Dec | Jan-Dec | |
| | | American sand lance | | | | | | | | | | | | Nov-Apr | Nov-Apr | Nov-Apr | Nov-Mar | Nov-Apr | |
| | | Smooth dogfish | | | | | | | | | | | | May-Jun | May-Oct | - | Apr-Oct | Apr-Oct | |
| | | Tautog | | | | | | | | | | | | May-Sep | May-Sep | May-Sep | May-Sep | May-Sep | |

INVERTEBRATES

| Subelement | Species | Monthly Presence | | | | | | | | | | | | Larvae | Eggs | Juveniles | Adults |
|--|-----------|------------------|---|---|---|---|---|---|---|---|---|---|---|---------|---------|-----------|---------|
| | | J | F | M | A | M | J | J | A | S | O | N | D | | | | |
|  Crab | Blue crab | | | | | | | | | | | | | May-Oct | - | Jan-Dec | Jan-Dec |
| | Blue crab | | | | | | | | | | | | | May-Oct | Jun-Oct | Jan-Dec | Jan-Dec |

For additional information about species locations and extent, reference the underlying GIS data available from response.restoration.noaa.gov

SHORELINE RESOURCES

ESI POLYGON HABITAT TYPES

| ESI Rank | Habitat Classification | Area (Acres) | Area (Sq. Miles) |
|----------|---------------------------------|--------------|------------------|
| 10A | Salt and Brackish Water Marshes | 284.71 | 0.44 |
| 10B | Freshwater Marshes | 64.48 | 0.10 |
| 10C | Swamps | 1,719.63 | 2.69 |
| 10D | Scrub and Shrub Wetlands | 285.78 | 0.45 |
| 9A | Sheltered Tidal Flats | 18.36 | 0.03 |
| 7 | Exposed Tidal Flats | 7.54 | 0.01 |

ESI SHORELINE HABITAT TYPES

| ESI Rank | Shoreline Habitat Classification | Length (Meters) | Length (Miles) | % of ESI Shoreline |
|----------|--------------------------------------|-----------------|----------------|--------------------|
| 10A | Salt and Brackish Water Marshes | 22,839.32 | 14.19 | 12% |
| 10B | Freshwater Marshes | 1,153.53 | 0.72 | 1% |
| 10C | Swamps | 21,379.04 | 13.28 | 11% |
| 10D | Scrub and Shrub Wetlands | 3,903.45 | 2.43 | 2% |
| 9A | Sheltered Tidal Flats | 1,789.92 | 1.11 | 1% |
| 9B | Vegetated Low Banks | 63,893.27 | 39.70 | 34% |
| 8B | Sheltered, Solid Man-Made Structures | 37,401.26 | 23.24 | 20% |
| 8C | Sheltered Riprap | 268.25 | 0.17 | < 1% |
| 7 | Exposed Tidal Flats | 2,376.38 | 1.48 | 1% |
| 6B | Riprap | 68.30 | 0.04 | < 1% |
| 5 | Mixed Sand and Gravel Beaches | 175.51 | 0.11 | < 1% |
| 3A | Fine to Medium Grained Sand Beaches | 3,305.92 | 2.05 | 2% |
| 1B | Exposed, Solid Man-Made Structures | 29,292.20 | 18.20 | 16% |

Total ESI Shoreline: 187,846.36 Total ESI Shoreline: 116.72
 Total Shoreline: 133,753.85 Total Shoreline: 83.11







































Note: A shoreline segment may include multiple shoreline habitats. If any segments include multiple habitats, the combined length of all habitats may exceed the length of the mapped shoreline, and the percent of ESI shoreline values will sum to greater than 100%

All underlying GIS data can be obtained from response.restoration.noaa.gov











LEGEND: NEW YORK AND NEW JERSEY




















Human-Use Features

-  Abandoned Vessel
-  Access
-  Airport
-  Anchorage
-  Aquaculture
-  Archaeological Sites
-  Army Corp of Engineers
-  Artificial Reef
-  Beach
-  Campground
-  Coast Guard
-  Diving Site
-  Boat Ramp
-  EPA Facility
-  EPA Region
-  Essential Habitat
-  FEMA region
-  Ferry
-  Historical Site
-  Landfill
-  Lock and Dam
-  Marina
-  Military
-  National Estuarine Research Reserve
-  National Park
-  Nature Conservancy
-  Oil Facility
-  Park
-  Port
-  Recreational Fishing
-  Renewable Energy
-  Repeated Measurement Site
-  Surfing
-  Tribal Land
-  Washover
-  Water Intake
-  Wildlife Refuge
-  Map ID

Human-Use Features (continued)

-  Pipeline
-  Rail Route
-  Road
-  Shipping Lane
-  Interstate
-  US Highway
-  State Highway or Route
-  Management Area

ESI Shoreline and Habitat Ranking

-  1A) Exposed, Rocky Shores
-  1B) Exposed, Solid Man-Made Structures
-  2A) Exposed Wave-Cut Platforms (Bedrock/Mud/Clay)
-  3A) Fine to Medium Grained Sand Beaches
-  3B) Scarps and Steep Slopes (Sand)
-  4) Coarse-Grained Sand Beaches
-  5) Mixed Sand and Gravel Beaches
-  6A) Gravel Beaches
-  6B) Riprap
-  7) Exposed Tidal Flats
-  8A) Sheltered Scarps (Bedrock/Mud/Clay)
-  8B) Sheltered, Solid Man-Made Structures
-  8C) Sheltered Riprap
-  9A) Sheltered Tidal Flats
-  9B) Vegetated Low Banks
-  10A) Salt and Brackish Water Marshes
-  10B) Freshwater Marshes
-  10C) Swamps
-  10D) Scrub and Shrub Wetlands

Examples of Double and Triple Shoreline Rankings:






































 10D & 2A

 10C & 10A & 4

Shorelines often contain varied geomorphology, and therefore may require two or three ESI types to describe. These symbols will look similar to the examples above. The first shoreline type listed is the most landward shore type.

LEGEND: NEW YORK AND NEW JERSEY

Sensitive Biological Resources

| | | | | | |
|---|----------------|--|-------------------------------------|--|---------------------|
|  | Birds |  | Invertebrates |  | Habitats |
|  | Birds |  | Bivalve/Barnacle/Chordate |  | Upland/Wetland/Plar |
|  | Alcid/Pelagic |  | Cephalopod |  | Benthic |
|  | Diving |  | Crab/Invertebrate/Shellfish |  | Terrestrial Mammal |
|  | Gull/Tern/Bird |  | Insect |  | Bat |
|  | Passerine |  | Gastropod |  | Small Mammal |
|  | Raptor |  | Lobster |  | Marine Mammals |
|  | Shorebird |  | Shrimp |  | Dolphin |
|  | Wading |  | Reptiles & |  | Manatee |
|  | Waterfowl |  | Amphibian/Frog/Lizard/Snake/Reptile |  | Pinniped |
|  | Fish |  | Turtle |  | Whale |
|  | Fish |  | Threatened or Endangered Species |  | Map ID |
|  | Nursery | | | | |

Guidelines for Interpreting Environmental Sensitivity Index (ESI) Maps

The following guidelines may help map users interpret the ESI maps. Additional information about resources mapped for this atlas can be found in the ESI Intro pages and associated metadata.

Sensitive Biological Resources (1:50,000 scale maps): Species are arranged into eight major categories or "elements" and further subdivided into "subelement" groupings representing species that share similar lifestyle characteristics and risks to oiling.

Biological resources may be mapped as points, lines, and/or polygons. Each element is represented by a unique color and/or hatch pattern, and icons illustrate the subelement(s) found within each feature. If a species is state or federally listed as threatened or endangered, a solid red square is placed behind the icon. When multiple elements occur in the same location, overlapping hatch patterns will be shown.

The associated Map ID "links" to the map report where the species and attributes are listed. To maximize readability, biological polygons covering more than 10 square km are not displayed on the map. Instead, these species are listed in the "Widespread in Mapped Area" section of the report. Occurrences of non-listed species assigned a "General Distribution" mapping qualifier are listed under "Also Present in Mapped Area" regardless of polygon size.

Shoreline Habitat Resources (all maps): The shoreline was mapped at mean-high water, then classified based on vulnerability to spilled oil and ease of clean-up. Shorelines are ranked on a scale from 1 (least vulnerable) to 10 (most vulnerable). Cooler colors represent less vulnerable shoreline types; warm and hot colors indicate increased vulnerability. A shoreline may have more than one habitat type present. When this happens, the most landward shoreline type is mapped on the shoreline, and the more seaward type(s) are mapped adjacent to the water. The areal extent of intertidal and marsh habitats may also be mapped as polygons. Most often these polygons represent tidal flats and marshes, though in particularly rocky shored areas, these may include exposed, wave-cut platforms and sand and gravel beaches.

Human-Use Features (1:100,000 scale maps): Locations of human-use features and jurisdictional boundaries are mapped as points, lines, or polygons. As with biological features, the human-use features appearing on the map include Map ID which "links" to a description of the feature in the map report. Additional features, particularly jurisdictional and management boundaries that cover the majority or entirety of the mapped area, are listed in the report, but not shown on the map.

