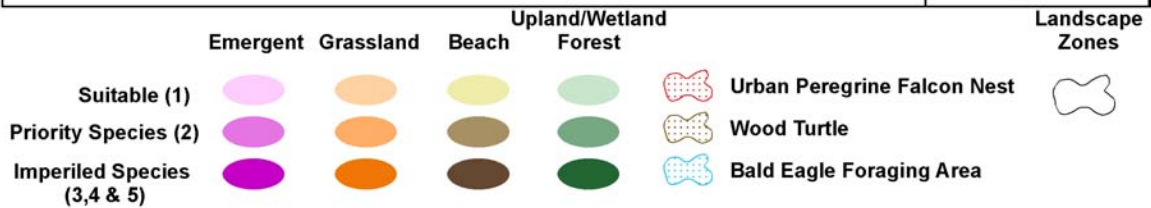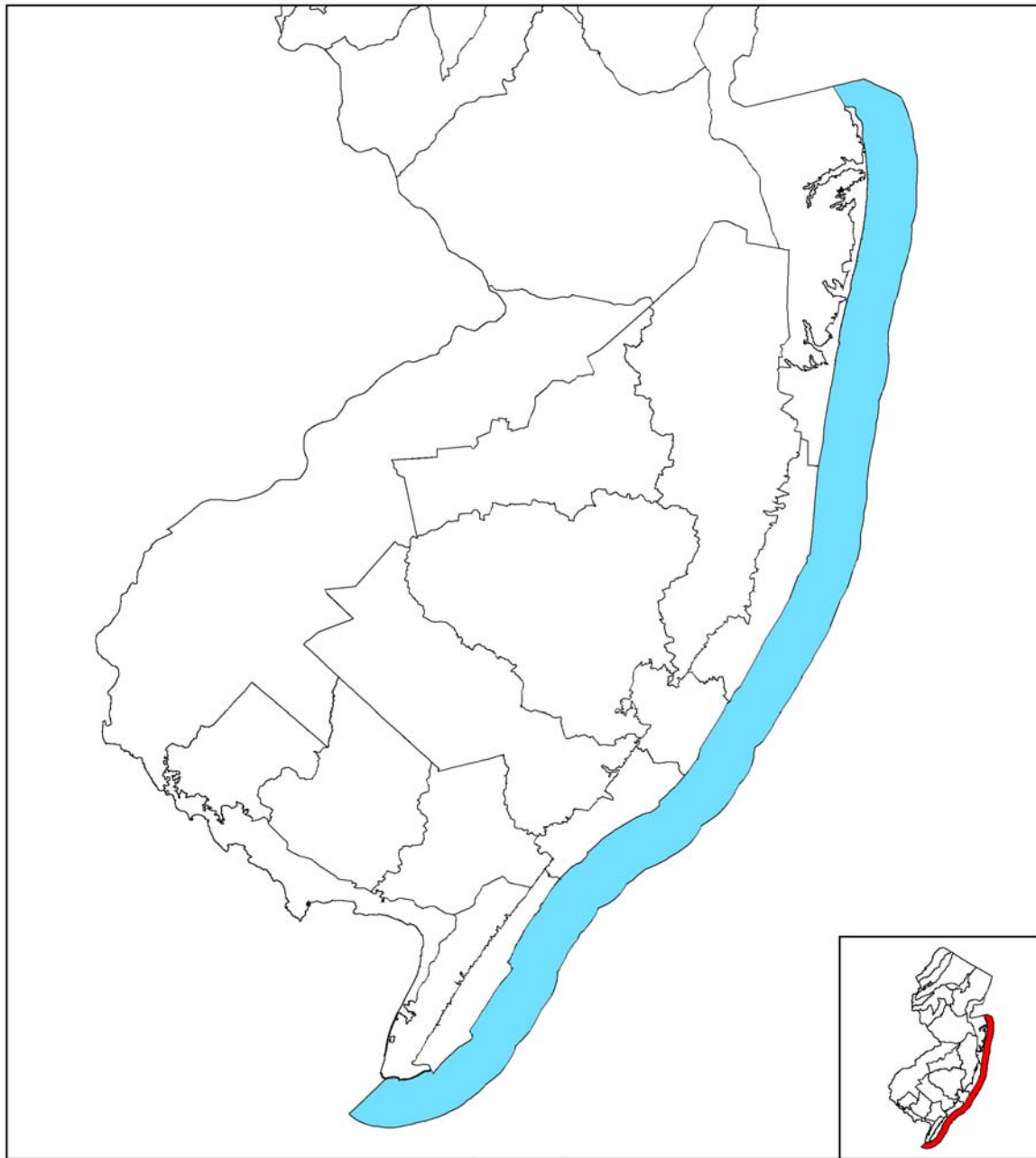## 6. The Atlantic Ocean

a. Habitats

The Atlantic Ocean is marine habitat extending from the coasts of Monmouth, Ocean, Atlantic and Cape May counties extending out to the 3-mile limit under state jurisdiction (Figure 10).

b. Wildlife of Greatest Conservation Need

The Atlantic Ocean supports 11 federal endangered or threatened species and three suites of special concern or regional priority wildlife. The federal endangered wildlife species include blue, fin, humpback, right, sei, and sperm whales, hawksbill sea turtle, Kemp's ridley sea turtle, green sea turtle, and leatherback sea turtle. Loggerhead sea turtle, which is state endangered, is the federal threatened species. The Atlantic sturgeon is a federal species of concern. Some pinnipeds (harbor seals), porpoises (harbor porpoises), pelagic birds (including true pelagics and near-shore migrants), and anadromous fish species (Hickory shad) are suites of wildlife of special concern or regional priority. Tables C44 – C47 identify the species of greatest conservation need within this zone.

Figure 10. Critical landscape habitats within the Atlantic Ocean conservation zone, as identified through the Landscape Map (v2).

Wildlife Species of the Atlantic Ocean Zone

Table C44. Federal Endangered and Threatened Species*

Common Name	Ocean
Mammals	
Blue whale	X
Fin whale	X
Humpback whale	X
Right whale	X
Sei whale	X
Sperm whale	X
Reptiles	
Green sea turtle	X
Hawksbill sea turtle	X
Leatherback sea turtle	X
Loggerhead sea turtle	X
Kemp's ridley sea turtle	X

*All Federal Endangered and Threatened species have an Endangered status on the NJ List of Endangered Wildlife
X: Species occurs within the identified habitat.

Table C45. Nongame Species of Conservation Concern

Common Name	Ocean
Mammals	
Harbor porpoise	X
Harbor seal	X
Birds	
Audubon's shearwater	X
Bridled tern	X
Greater shearwater	X
Horned grebe	X
Manx shearwater	X
Northern gannet	X
Razorbill	X
Red-throated loon	X
Fish	
Atlantic sturgeon	X

X: Species occurs within the identified habitat.

Table C46. Game Species of Regional Priority
Note: Species identified within the table have seasonal harvests within New Jersey.

Common Name	Ocean
Birds	
Black scoter	X
Common eider*	X
Harlequin duck*	X
Long-tailed duck	X
Surf scoter	X
White-winged scoter	X

*Species considered regional priority, however, NJ is south of the species' normal winter range and there is no natural habitat. A few occur along
 man-made rock jettys each winter, but this is insignificant to the overall population status.
X: Species occurs within the identified habitat.

Table C47. Fish Species
Note: Species identified within the table are nongame species within New Jersey, currently without state or regional status.

Common Name	Ocean
Fish	
Hickory shad	X

X: Species occurs within the identified habitat.

c. Threats to Wildlife in the Atlantic Ocean

Whale, sea turtle, pinniped, and seabird populations are threatened by many commercial fishing practices, including long lines and gill nets. Sea turtles, pinnipeds and especially whales are susceptible to ship strikes. Atlantic sturgeon are threatened by habitat loss/degradation and commercial fishing practices, such as gillnetting for monkfish and dogfish sharks. Threats to seabirds are less well known as abundance, distribution, and usage patterns within state waters have not been studied extensively. Oil spills, in particular large events which always loom as a threat because of the large amount of oil routinely transported to ports in the Delaware River near Philadelphia and New York Harbor area, have potentially serious short and long-term impacts on all marine species. Proposed offshore wind energy projects may also be a threat to species using the marine environment, in particular seabirds and migratory birds. The impacts of aquaculture, particularly for hard clams (*Mercenaria mercenaria*), as well as hydraulic crab dredging, are largely unmeasured and poorly understood. Also see Section I-E "Threats to Wildlife and Habitats" (page 17) of this document.

d. Conservation Goals

- Please also refer to the goals and actions identified within the Marine Mammal Workshop report. The report will be available on the NJ Division of Fish and Wildlife's Web site in the near future.
- Inventory, determine distribution, and monitor marine species of conservation concern, primarily marine mammals and sea turtles, and special concern fishes within NJ's waters of the Atlantic Ocean.
- Prevent, stabilize, and reverse declines of endangered, threatened, and rare marine species, primarily marine mammals and sea turtles, and special concern fishes.
- Promote public education and awareness, marine wildlife and indigenous nongame fish species conservation, and viewing opportunities.

e. Conservation Actions

The actions below are identified as primary (1° or priority) and secondary (2°). Prioritization was determined by the Atlantic Coastal Regional Landscape stakeholders during a meeting held on March 29, 2007 (see *Attachment H*). These actions, with a focus on the priority actions, should be incorporated in planning and project development in conjunction with the priority state-level objectives (goals) and strategies (actions).

Priority	Conservation Actions
Inventory, determine distribution, and monitor marine species	
1°	Use existing survey data (NJAS SeaWatch, SeaNet Beach Bird Surveys) to develop a database of seabird species (near-shore migrants and pelagic birds) presence and their distribution. Initiate additional survey efforts to gain a better understanding of usage patterns/distribution. *(Monitor wildlife - long-term monitoring)*

Priority	Conservation Actions (continued)
1°	Develop and implement a reliable survey for measuring pelagic bird populations and/or trends of near-shore water birds of conservation need. *(Monitor wildlife - long-term monitoring)*
1°	Conduct surveys in shipping lane vicinities and along the coast during whale migration to determine the seasonal distribution of whales, particularly for right whales. *(Monitor wildlife - long-term monitoring; Conserve wildlife – rare wildlife)*
1°	Use predictive GIS model based on available species occurrence information and habitat data to predict right whale migration routes off the NJ coast and conduct surveys to validate the model. *(Protect habitat – Landscape Project, Conserve wildlife – rare wildlife)*
1°	Determine whale distribution and right whale migration routes through the participation in the East Coast's Sightings Advisory System for mariners. *(Monitor wildlife - long-term monitoring)*
1°	Increase or initiate monitoring programs for marine species of conservation concern as identified within NJ's Wildlife Action Plan where present data is insufficient. *(Protect habitat – Landscape Project)*
2°	Use existing data to develop a database of the Atlantic bottlenose dolphin and harbor porpoise populations' abundance and distribution. *(Monitor wildlife - long-term monitoring)*
2°	Evaluate existing data on the Atlantic bottlenose dolphin and harbor porpoise and initiate regular surveying and/or monitoring, if deemed necessary. *(Monitor wildlife - long-term monitoring)*
Prevent, stabilize, and reverse declines of wildlife and fish populations	
1°	Incorporate the recommendations and needs identified through the Marine Mammal Workshop (held April 17-19, 2006) for the conservation of NJ's marine mammals and sea turtles. *(Conserve wildlife – rare wildlife)*
1°	Develop and implement conservation plans specific to New Jersey waters for whales, pinnipeds, seabirds (consistent with the North American Waterbird Conservation Plan), and sea turtles. *(Conserve wildlife – rare wildlife)*
1°	Work with experts and other government agencies to establish criteria to protect seabird species (near-shore migrants and pelagic birds) through regulatory measures. *(Conserve wildlife – rare wildlife)*
1°	Reduce "by-catch" of listed and other critical species through regulatory or volunteer measures. *(Protect aquatic wildlife – humans)*
1°	Conduct research to assess the potential impacts of coastal and offshore wind turbines on breeding, migrating, and wintering bird and bat populations. Conduct studies and create models to identify migratory routes of and assess the potential impacts of wind turbines, tall buildings, radio towers and other "human-made" tall structures to populations of breeding and migratory birds and bats. Carry out post-construction monitoring of both existing and future wind turbines to assess the actual impacts these structures have on bats. *(Protect aquatic wildlife – humans)*

Priority	Conservation Actions (continued)
1º	Identify regulations per the Marine Mammal Protection Act (MMPA) currently not being enforced and enforce them. These regulations include but are not limited to restrictions on approach distance to right whales (a minimum 500 yards or 457.2 meters) and all other marine mammals (a minimum of 50 yards or 45.72 meters), and prohibits the harassment, hunting, capturing, and killing of marine mammals. *(Protect aquatic wildlife – humans)*
2º	Identify and protect habitat for fish by plotting distributions of special concern fish species, and integrate those data into the Biotics database. *(Monitor wildlife – fish; Protect habitat – Landscape Project)*
2º	Conduct literature searches, surveys, and work with marine species researchers along the eastern coast to identify the threats facing whales, pinnipeds, porpoises, and sea turtles including ship strikes and commercial fishing gear. *(Protect aquatic wildlife – humans)*
2º	Assess the threats and determine the health of the Atlantic bottlenose dolphin and harbor porpoise populations through research and from expert opinion. *(Conserve wildlife – rare wildlife)*
2º	Investigate sound sources off the NJ coast to determine the potential acoustical threats to marine mammals. Develop and incorporate a plan into a marine mammal protection strategy, as recommended through the Marine Mammal Workshop (held April 17-19, 2006), to minimize the impacts off the NJ Coast within NJ state waters (3 nautical miles from the coastline). *(Protect aquatic wildlife – humans)*
2º	Develop, implement, and evaluate management actions to enhance populations of special concern and rare fish, and implement adaptive management strategies. *(Conserve wildlife – rare wildlife; Protect habitat - fish)*
2º	Investigate impacts to Atlantic sturgeon from commercial fishing practices and recommend restrictions on fishing gear and locational and/or seasonal restrictions. *(Protect aquatic wildlife – humans)*
2º	Conduct investigations of healthy and stranded marine mammals and sea turtles to determine diet, contaminant loads, general health, and parasite load.
2º	Protect water quality through the enforcement of Clean Vessel Act regulations. Boaters to observe pump-out and no discharge zone designations. *(Protect habitat – rare wildlife, fish)*
2º	Refine existing Landscape Project species occurrence areas through research and, where lacking, develop new species occurrence areas as data on species requirements become available. Develop, review and improve species-habitat associations as new land use/land cover data become available. *(Protect habitat – Landscape Project)*

Priority	Conservation Actions (continued)
Assess status of selected marine and estuarine fishes through the Delphi Process	
1°	Prevent declines in marine and estuarine fishes and pelagic bird populations by utilizing the NOAA Proactive Conservation Program's Species of Concern list to inform NJ's Delphi process when determining species that may warrant a state listing of endangered, threatened, or special concern. *(Status – fish; Monitor wildlife – fish; Conserve wildlife – rare wildlife)*
Promote public education and awareness	
1°	Develop educational brochures, posters, and programs (targeted at both children and adults) that convey the threat posed by contaminants and persistent marine debris to marine life. *(Education – humans)*
1°	Develop educational programs and present to schools, local environmental organizations, community groups, and the general public to promote understanding of threats to marine mammals, sea turtles, and other marine species and to increase environmental stewardship. *(Education – humans)*
2°	Develop and maintain educational brochures and posters and potential viewing opportunities of marine mammals and sea turtles for the public consistent with species recovery goals to enhance public awareness of wildlife conservation and environmental issues by cooperating with federal, state, and local government, and non-governmental organization partners. *(Education – humans)*
2°	Develop and encourage opportunities for Atlantic Ocean wildlife eco-tourism including but not limited to the creation of viewing opportunities, interpretive trails, and other wildlife viewing experiences. *(Education – humans)*
2°	Develop brochures and posters to educate the public and increase awareness of New Jersey's indigenous nongame fish species. *(Education – humans)*
2°	Provide public education and outreach efforts focused on NJ's Clean Marina Program and encourage marina owners, boaters, etc. to adopt voluntary practices aimed at preventing adverse impacts to water quality. *(Education – humans)*

f. Potential Partnerships to Deliver Conservation

<u>Public</u>
- Expand volunteer Citizen Scientist Program recruitment and activities.
- Recruit volunteers through Citizen Scientist Program or other conservation organizations to participate in the Seabird Ecological Assessment Network's (SEANET) beached bird surveys.
- Identify other projects where Citizen Scientist Program could assist with surveying and monitoring of marine species.

<u>Commercial and Recreational Fishermen</u>
- Enlist the support of commercial and recreational fishermen in identifying whales and pelagic birds in New Jersey waters.
- Enlist commercial and recreation fishermen, along with members of the Garden State Seafood Association, to serve as reviewers in the Delphi Process.

Conservation Organizations
- Work with the Marine Mammal Stranding Center, Riverhead Foundation, and other stranding organizations to participate in marine mammal/sea turtle conservation workshop and identify conservation needs.
- Work with New Jersey Audubon Society to improve our understanding of pelagic bird species, possibly by expanding their current survey efforts of near-shore migrants, which consists of an annual fall survey (from land) at one location. Coordinate efforts to assess threats of wind energy projects.
- Continue to work with the Wildlife Trust (and Tufts University) which has implemented a Seabird Ecological Assessment Network (SEANET) for New Jersey that includes beached bird surveys at targeted locations along the coast, development of a seabird database, and identification of causes of bird mortality.

Academic Institutions
- Work with Rutgers University, including Center for Coastal and Marine Studies, to identify conservation needs and initiate (or continue) research projects as appropriate.
- Work with Rutgers University, Richard Stockton College of NJ and other academic institutions to participate in the marine mammal/sea turtle conservation workshop and identify conservation needs.
- Continue to work with Tufts University (through SEANET) to identify causes of mortality of pelagic seabirds.
- Enlist experts from Rutgers University, Richard Stockton College of NJ and other academic institutions to serve as reviewers in the Delphi Process.

Local Government, Other State and Federal Agencies
- Partner with local, state, and federal government agencies to protect, enhance, and create habitats and to protect populations of marine mammals, sea turtles, near-shore and pelagic birds, and Atlantic sturgeon.
- NJ Department of Environmental Protection's Division of Fish and Wildlife (DFW), US Fish and Wildlife Service (USFWS)–NJ Field Office, and National Oceanic and Atmospheric Administration (NOAA) Fisheries to work together to implement recovery plans.
- DFW, NOAA Fisheries, and other marine experts to collaborate in a workshop to identify conservation needs of marine mammals, reptiles, birds, and fish.
- DFW to collaborate with USFWS, Atlantic Flyway Council, and Atlantic Coast Joint Venture to develop and implement an operational sea duck and near-shore bird survey for species of conservation need.
- DFW to identify important pinniped areas.
- DFW and NOAA Fisheries to investigate the impacts of fisheries gear interactions (including by-catch) on marine mammals, sea turtles, pelagic birds and Atlantic sturgeon.
- DFW and NOAA Fisheries to determine acoustic threats to marine mammals.
- DFW and the National Marine Fisheries Industry to develop guidelines and/or regulations to reduce by-catch of marine mammal, sea turtles, and pelagic birds.
- DFW to expand efforts to develop materials for eco-tourism.
- DFW and NOAA Fisheries, and Mid-Atlantic Fishery Management Council to conduct Delphi Process.

- DFW to work with USFWS and other state and federal partners to implement North American Waterfowl Management Plan as appropriate.
- DFW to work with federal and state agencies, including USFWS, USCG, NOAA, NJ Bureau of Emergency Response, and NJ Office of Natural Resources Restoration, to plan for and assist with emergency oil spill response.

g. Monitoring Success
- Monitor populations and abundance of whales, pinnipeds, sea turtles, and near-shore and pelagic birds of conservation need.
- Determine if by-catch of critical species is reduced.
- Conduct Delphi Process every three to four years to update status of marine species.
- Employ/implement adaptive management techniques for the goals and conservation actions established for species of greatest conservation need. Review effectiveness of research and management, and improve techniques as necessary.