

Quarterly Reports

FY 2021 Third Quarter



*Latest Reports and Study
Profiles Posted to the
Environmental Studies Program
Information System (ESPIS)*

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The Environmental Studies Program (ESP) Quarterly Reports include summaries of the Bureau of Ocean Energy Management (BOEM) environmental studies completed each quarter. These studies inform BOEM's policy decisions on the development of energy and mineral resources on the Outer Continental Shelf (OCS).

Visit ESPIS at <https://marinecadastre.gov/espis>

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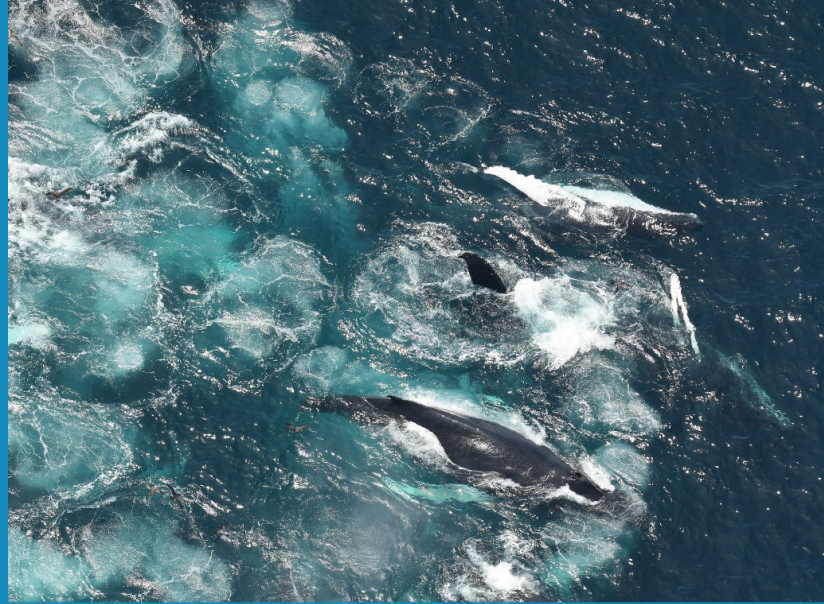
Marine Mammal and Sea Turtle Field Surveys and Marine Resource Characterization for Offshore Wind Energy Planning Offshore Rhode Island and Massachusetts – Phase 2

ESPIS Link: <https://marinecadastre.gov/espis/#/search/study/100216>

Conducted by: New England Aquarium; Woods Hole Oceanographic Institution

National Studies List: AT-17-x10

Study Products (available in ESPIS): Final report, technical summary



Humpback whales observed bubble-net feeding on June 4, 2020; photo taken by New England Aquarium aerial survey team

Purpose/Information Use:

BOEM had nine offshore wind energy leases in southern New England (offshore Massachusetts and Rhode Island) when this study began in 2017. In this area BOEM has approved two commercial offshore wind energy facilities, and was beginning environmental review for other projects. The New England Aquarium has conducted systematic aerial surveys of endangered whales, including the critically endangered North Atlantic right whale, and sea turtles in these areas since 2011. This study supported the surveys conducted in the study area between October 2018 and August 2019 (Campaign 5). The study also includes an analysis of right whale prey species and oceanographic conditions near right whale aggregations during Campaigns 4 and 5 and summarizes interim results from Campaign 6A surveys, which were conducted in the study area between March and October 2020.

Findings/Results:

- The Campaign 5 general and condensed surveys recorded 24 on-effort sightings (sightings observed while on transect) of 67 right whales. Directed surveys (flown to known right whale aggregations) recorded 112 sightings of 164 right whales, although these sightings cannot be used to estimate abundance. In total, Campaign 6A surveys recorded 10 sightings of 15 right whales.
- Right whale density and abundance estimates calculated for Campaigns 4 and 5 show higher right whale densities in recent years (2017–2019) than in past years (2011–2015). In addition, right whales consistently occurred in the study area year-round during Campaigns 4 and 5, but not during 2011–2015. Campaigns 4 and 5 also show that right whales are increasing their use of the eastern side of the study area (i.e., in and adjacent to Nantucket Shoals).

Final Reports:

O'Brien, O, McKenna, K, Hodge, B, Pendleton, D, Baumgartner, M, and Redfern, J. 2021. Megafauna aerial surveys in the wind energy areas of Massachusetts and Rhode Island with emphasis on large whales: summary report Campaign 5, 2018–2019. Sterling (VA): U.S. Department of the Interior, Bureau of Ocean Energy Management. 83 p. Report No.: OCS Study BOEM 2021-033.

The report for Campaign 6A will be published in the future.

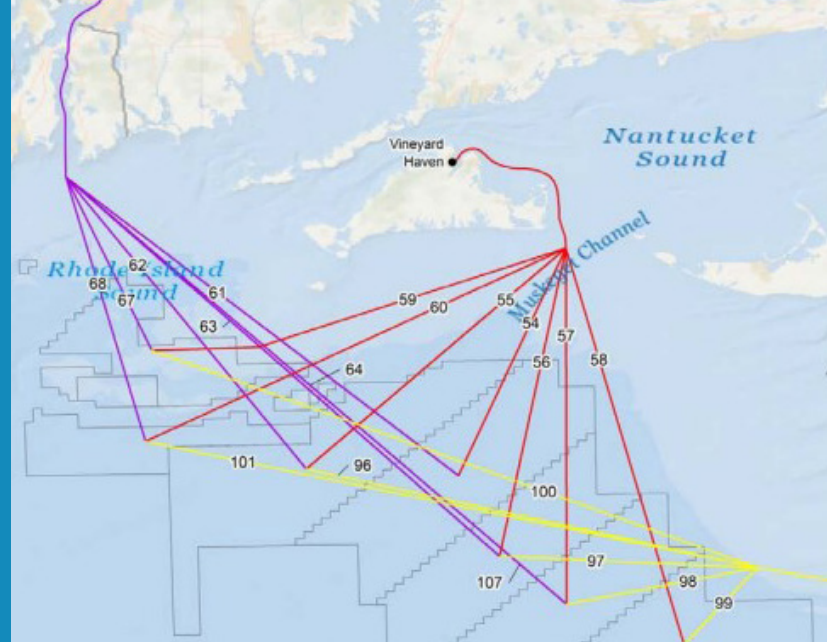
Risk Analysis for Vessel Strikes on Whales from Offshore Wind Development Support Activities

ESPIS Link: <https://marinecadastre.gov/espis/#/search/study/100251>

Conducted by: CSA Ocean Sciences Inc.

National Studies List: AT-19-01

Study Products (available in ESPIS): Final report, technical summary, vessel risk calculator



Pre-dawn vessel track lines from Montauk, Massachusetts, to the Massachusetts and Rhode Island wind energy areas

Purpose/Information Use:

The approval of offshore wind projects involves an assessment of the environmental risks, including any potential impacts to wildlife. Vessel strike has been identified as a source of injury and mortality affecting the recovery of large whales and sea turtles. Qualitative assessments of encounter rates and/or strike probabilities often result in conservatively high estimates of vessel strike risk based on many assumptions of potential risk. The goals of this study were to characterize the risk of a strike on large whales or sea turtles by the vessel types operating in support of offshore wind energy and to develop a model that can account for geospatial, temporal, and species-specific parameters for any wind energy areas (WEAs) on the Atlantic Outer Continental Shelf. The model will provide BOEM with another tool to assess potential impacts to whales and turtles from offshore wind energy development.

Findings/Results:

- The analytical model developed by the study was used to create a vessel risk calculator with a graphical user interface (GUI) to assess the likelihood of vessel encounters with marine mammals and sea turtles in Atlantic WEAs.
- The GUI allows a user to manipulate vessel types, routes, and trip frequency within the model to build cumulative risk probabilities across offshore wind development phases and display the user-defined scenarios in a heat map.
- Results of the analytical model for the calculator were validated against an animal movement model that used more detailed vessel and animal movement inputs. In general, the calculator showed good agreement with the animal movement model, although it tended to result in a slightly higher (3% to 5%) estimate than the animal movement model.

Final Reports:

Barkaszi MJ, Fonseca M, Foster T, Malhotra A, Olsen K. 2021. Risk assessment to model encounter rates between large whales and vessel traffic from offshore wind energy on the Atlantic OCS. Sterling (VA): U.S. Department of the Interior, Bureau of Ocean Energy Management. 54 p + appendices. Report No.: OCS Study BOEM 2021-034.

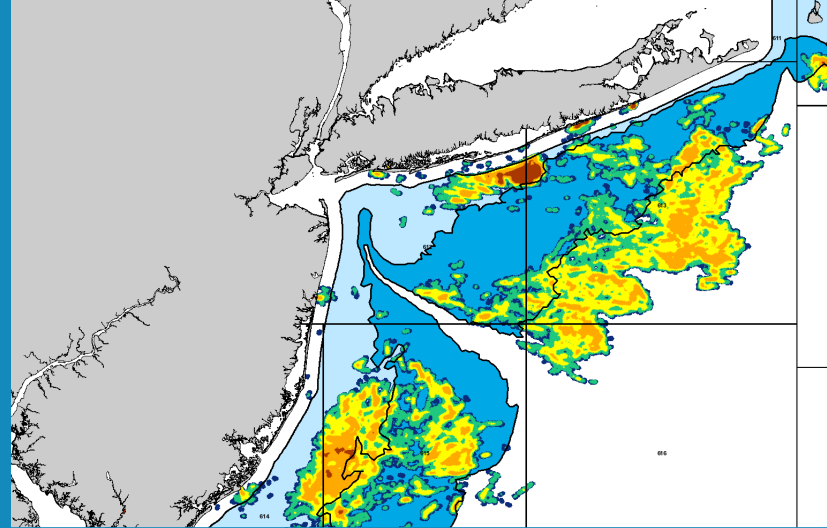
New York Bight Fish, Fisheries, and Sand Features: Data Review

ESPIS Link: <https://marinecadastre.gov/espis/#/search/study/100285>

Conducted by: Rutgers University, The State University of New Jersey

National Studies List: MM-19-02

Study Products (available in ESPIS): Final reports, technical summary



Distribution of commercial fishing activity for surfclam and ocean quahog within the study area, 2015-2016

Purpose/Information Use:

BOEM authorizes the use of outer continental shelf sand resources for the construction of an increasing number of shore protection and beach and wetland restoration projects. Sand provides important habitat for many organisms. Sand dredging activities can potentially harm or disturb fish directly or alter their habitat over varying time scales. By synthesizing existing literature and data, this study sought to better understand organisms' use of habitats and sand features in the New York Bight (NYB) within the Mid-Atlantic; compile existing datasets into an accessible format; and identify and recommend methods for filling data gaps. This information will enable BOEM to better evaluate the use of potential sand borrow areas offshore of New Jersey and New York.

Findings/Results:

- Both demersal species (species inhabiting the bottom layers of water near the ocean floor) and pelagic (open-water) species may associate with sand features.
- The wide seasonal migratory and foraging range and life history of species adapted to use the highly dynamic NYB sand habitat may insulate populations from local effects of dredging, but they also may be cumulative with effects of disturbances in other regions and vice versa.
- Important knowledge gaps include: an improved understanding of how organisms interact with their sand habitat; an understanding of scale effects to predict how disturbances reshape trophic organization (feeding relationships) and recruitment (new individuals added to the population); and direct observations to understand the potential for acute injury, mortality, or feeding opportunities that result from dredging activity.

Final Reports:

Grothues TM, Iwicki CM, Taghon GL, Borsetti S, Hunter E. 2021. Literature synthesis of NY Bight fish, fisheries, and sand features; volume 1: literature synthesis and gap analysis. Sterling (VA): U.S. Department of the Interior, Bureau of Ocean Energy Management. 114 p. Report No.: OCS Study BOEM 2021-036.

Grothues TM, Hunter EJ, Iwicki CM, Taghon GL, Borsetti S. 2021. Data synthesis of NY Bight fish, fisheries, and sand features; volume 2: data synthesis and analysis. Sterling (VA): U.S. Department of the Interior, Bureau of Ocean Energy Management. 90 p. Report No.: OCS Study BOEM 2021-036.

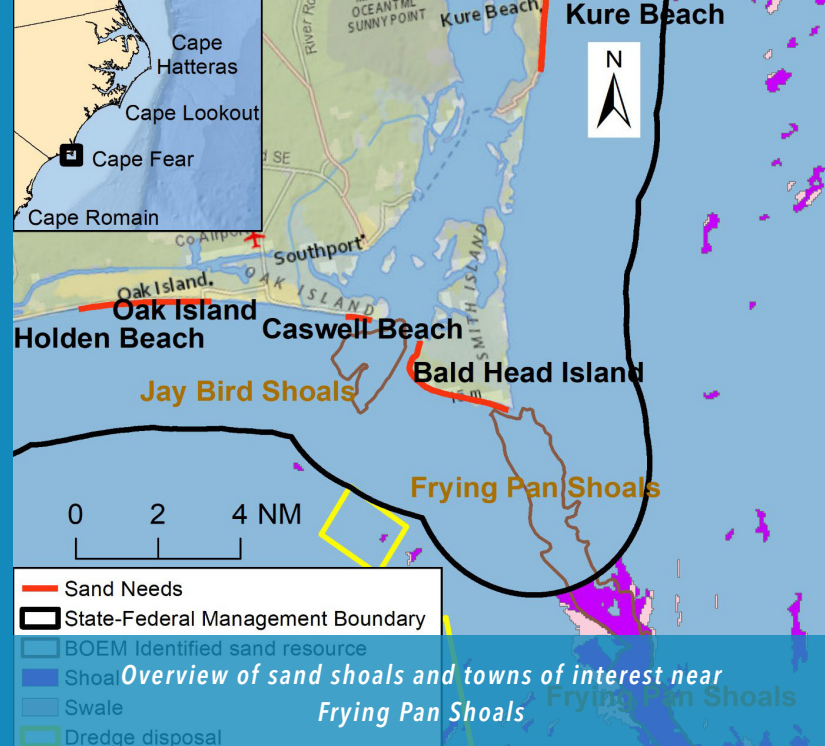
Workshop and Research Planning to Improve Understanding of the Habitat Value and Function of Frying Pan Shoals, NC on the Atlantic Outer Continental Shelf

ESPIS Link: <https://marinecadastre.gov/espis/#/search/study/100312>

Conducted by: Kearns & West, CSS-Inc.

National Studies List: MM-19-x06

Study Products (available in ESPIS): Final report, technical summary



Purpose/Information Use:

The coastal communities of the Cape Fear Region of North Carolina have experienced rapid population growth, increased economic growth via tourism, and increased land values. Investments in beach nourishment projects in the Cape Fear Region from 2000 to 2019 have exceeded \$137 million and placed over 20 million cubic yards of sand along the region’s beaches. Erosion continues to be a long-term challenge, and the demand for long-term beach-compatible sand resources to support future nourishment needs is increasing. Based on recent sand search surveys, long-term sand resource options are severely limited, except for Frying Pan Shoals (FPS). This study used data and information gathered from a literature review, exchanges with key stakeholders, and a technical expert workshop to assess FPS as a potential sand source. The results of the study will help BOEM identify and fill data gaps at FPS in advance of future lease requests to help formulate a science research strategy.

Findings/Results:

- The study synthesized existing knowledge regarding the geology, oceanography, and biology of FPS along with knowledge gained from workshops and input shared by technical experts and stakeholders.
- Researchers identified knowledge gaps and research priorities that will guide future research into the viability of using FPS as a sand source.

Final Reports:

Pickens BA. 2021. Assessment of Frying Pan Shoals as a potential sand source in the Cape Fear Region of North Carolina. Sterling (VA): U.S. Department of the Interior, Bureau of Ocean Energy Management. 81 p. Report No.: OCS Study BOEM 2021-028.

BOEM-MARINe (Multi-Agency Rocky Intertidal Network)

ESPIS Link: <https://marinecadastre.gov/espis/#/search/study/100090>

Conducted by: University of California, Santa Cruz

National Studies List: PC-15-02

Study Products (available in ESPIS): Final report, technical summary, related publications



Targeted species are monitored annually or semi-annually within fixed plots

Purpose/Information Use:

In 1997, the Minerals Management Service (BOEM's predecessor) initiated the formation of the long-term monitoring program, MARINe. The program monitors nearly 200 rocky shore sites and is the largest and longest-running program of its kind. It currently includes more than 40 partners consisting of Federal, state, and local government agencies; universities; tribes; and private organizations. Of particular interest to BOEM, MARINe collects information about rocky intertidal communities that are adjacent to areas of ocean energy development, including oil and gas platforms offshore southern California and proposed wind and wave energy devices offshore Oregon. Monitoring of coastal biota (plant and animal life) along the California and Oregon coasts provides BOEM with baseline information needed to assess impacts to these resources from energy development.

Findings/Results:

- MARINe surveys have been instrumental in assessing impacts to intertidal communities as a result of four oil spills along the California coast.
- MARINe data have also been used to evaluate the design and effectiveness of California Marine Protected Areas and assess long-term resilience of intertidal communities to impacts of climate change.

Final Reports:

Miner CM, Swearingen AK. 2020. Multi-agency rocky intertidal highlights. Camarillo (CA): U.S. Department of Interior, Bureau of Ocean Energy Management. 8 p. Report No.: OCS Study BOEM 2020-053.

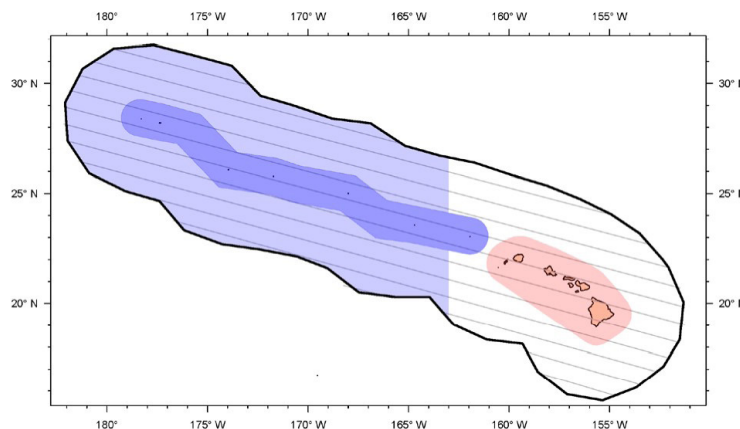
Pacific Marine Assessment Partnership for Protected Species

ESPIS Link: <https://marinecadastre.gov/espis/#/search/study/100179>

Conducted by: National Oceanic and Atmospheric Administration (NOAA) Pacific Islands Fisheries Science Center, NOAA Southwest Fisheries Science Center

National Studies List: PC-17-04

Study Products (available in ESPIS): Final reports, technical summaries, related publications



Black outline denotes the study area for the Hawaiian Islands Cetacean and Ecosystem Assessment Survey, for which scientists conducted visual sightings and acoustic detections for cetaceans and visual sightings for seabirds

Purpose/Information Use:

The Pacific Marine Assessment Partnership for Protected Species (PacMAPPS) was a four-year multi-agency partnership to collect data and carry out density analyses necessary to support the regulatory and management missions of BOEM, NOAA, and the U.S. Navy. PacMAPPS comprised two components—the California Current Ecosystem Survey (CCES) and the Hawaiian Islands Cetacean and Ecosystem Assessment Survey (HICEAS). CCES was a line-transect survey for coastal pelagic (open sea) fisheries stocks, marine mammals (cetaceans), seabirds, and ecosystem data that spanned the entire continental shelf and slope off the U.S. West Coast. HICEAS included summer-fall cetacean and seabird surveys in 2017, and a winter cetacean and seabird survey in 2020. BOEM will use the data generated from PacMAPPS to inform decisions pertaining to renewable energy development in the Pacific region.

Findings/Results:

- CCES surveyed an almost 8,000-mile transect line for marine mammals and seabirds. In total, 2,122 marine mammal groups were sighted—a record for a California Current cetacean stock assessment survey. For seabirds, 133 species were sighted.
- HICEAS 2017 resulted in 345 cetacean groups and 58 seabird species sighted.
- Winter HICEAS 2020 provided systematic line-transect survey coverage around the main Hawaiian Islands, the first such systematic effort during winter in Hawaii. A total of 326 groups of cetaceans were seen.

Final Reports:

Moore JE. 2021. Final report of the California Current Ecosystem Survey (CCES) 2018: a PacMAPPS study. Camarillo (CA): U.S. Department of the Interior, Bureau of Ocean Energy Management. 187 p. Report No.: OCS Study BOEM 2021-013.

Oleson EM. 2021. Final report of the Hawaiian Islands Cetacean and Ecosystem Assessment Study (HICEAS) 2017 and 2020: a PacMAPPS study. Camarillo (CA): U.S. Department of the Interior, Bureau of Ocean Energy Management. 313 p. Report No.: OCS Study BOEM 2021-042.

Department of the Interior Mission

The Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities.

Bureau of Ocean Energy Management

The mission of the Bureau of Ocean Energy Management is to manage development of U.S. Outer Continental Shelf energy and mineral resources in an environmentally and economically responsible way.

BOEM Environmental Studies Program

The mission of the Environmental Studies Program (ESP) is to provide the information needed to predict, assess, and manage impacts from offshore energy and marine mineral exploration, development, and production activities on human, marine, and coastal environments. The proposal, selection, research, review, collaboration, production, and dissemination of each of BOEM's Environmental Studies follows the DOI Code of Scientific and Scholarly Conduct, in support of a culture of scientific and professional integrity, as set out in the DOI Departmental Manual (305 DM 3).

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