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**The Northwest Atlantic Marine Ecoregional Assessment: Implications for the Rhode Island
Ocean SAMP region**

by

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The following is a first draft of an interpretation of The Nature Conservancy's Identifying Conservation Areas in the Northwest Atlantic Marine Region Final Draft, 06/30/2010. This document intends to illustrate the places in the area of Rhode Island's Ocean SAMP that have been identified as important contributors to biodiversity in the Northwest Atlantic region. Most of this regional analysis was done with data summarized by ten-minute squares and is too coarse at that scale to highlight specific areas within Rhode Island's Ocean SAMP area. With further analysis though, it should be possible to determine some of the features and process that are driving the location of the identified biodiversity hotspots. The purpose of this document is to provide a starting point for deeper investigations into the ecological significance of Rhode Island's marine environment to the larger Northwest Atlantic seascape.

This document is still in development and is currently under review by The Nature Conservancy's Eastern Region and should be considered a draft product.

Please refer to source documents for more details about the data and methods used:

Phase I report:

<http://www.nature.org/wherewework/northamerica/states/easternusmarine>

Phase II report:

Anderson, M.G, J. Odell, M. Clark, Z. Ferdaña, and J.K. Greene. 2010. The Northwest Atlantic Marine Ecoregional Assessment: Identifying Conservation Areas in the Northwest Atlantic Marine Region. Phase Two. The Nature Conservancy, Eastern U.S. Division, Boston, MA.

The benthic habitat classification described in Phase I of the regional report is used as the base of the following map figures. Each number in the legend refers to following list of benthic habitats in the Southern New England sub-region.

Benthic Habitat Descriptions

Adapted from Chapter 3 of The Nature Conservancy's Northwest Atlantic Marine Ecoregional Assessment, Phase 1 Report. <http://www.nature.org/wherewework/northamerica/states/easternusmarine>

Shallow

- 109:** Depressions in very shallow water (0 - 23 m) mostly on medium to coarse sand but occasionally on silt.
- 200:** Depressions at very shallow to moderate depths (0 – 44 m) on very fine to medium sand.
- 25:** Flats and side slopes in very shallow to shallow water (0 – 23 m) on fine to coarse sand.
- 36:** Depressions and high flats in very shallow to moderate depths (0 – 75 m) on medium to coarse sand.
- 390:** Depressions in shallow water (23 - 44 m) in very fine to fine sand.
- 316:** Flats in shallow water (8-44 m) on very fine to medium sand.
- 229:** Depressions in shallow depths (8.4 to 44 meter) on very fine sand.
- 230:** Depressions in shallow depths (23 - 44 m) on very fine sand.
- 873:** Flats and side slopes in shallow water (8 - 31 m) on very fine to medium sand.
- 2537:** Depressions and high flats in shallow water (23 - 31 m) on very fine to fine sand.

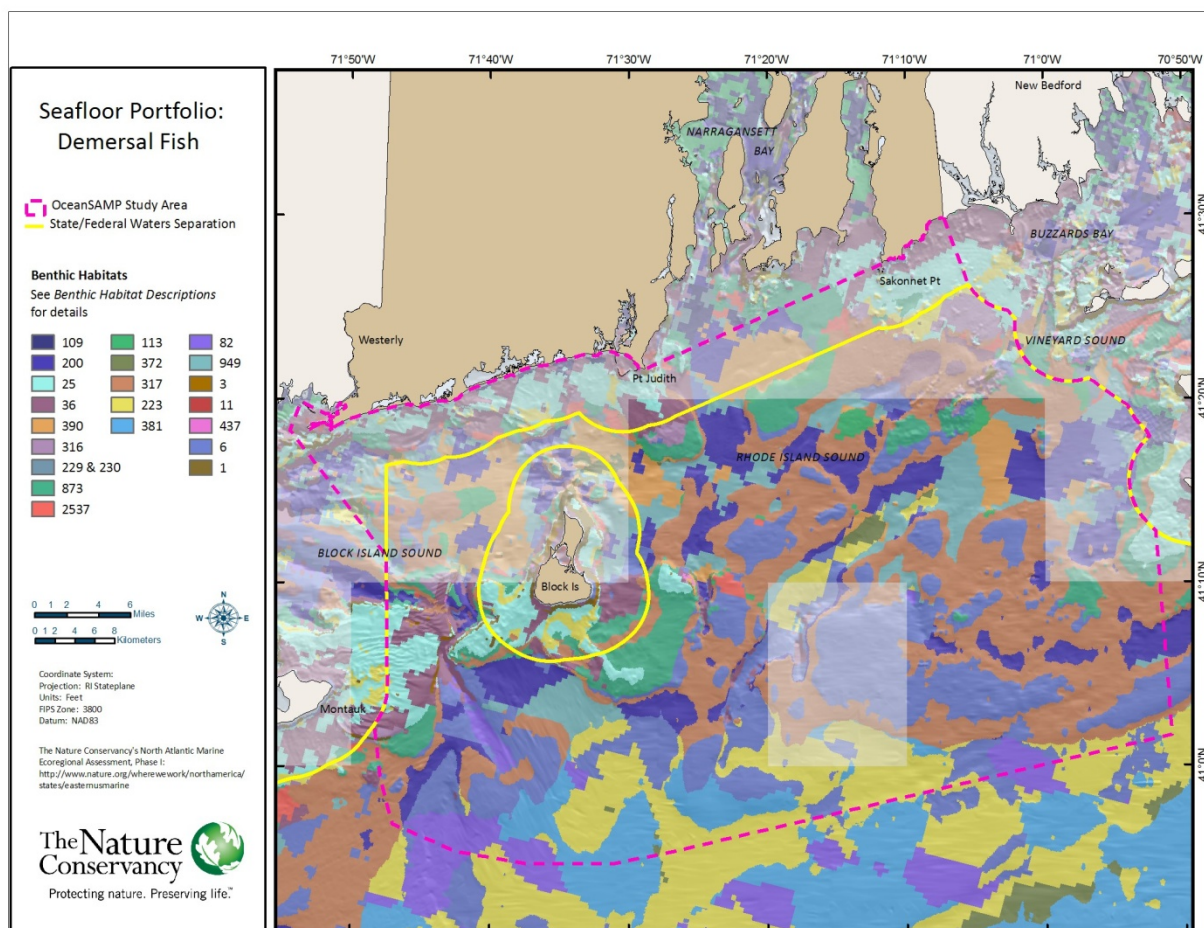
Moderate Depths

- 113:** Depressions and mid-position flats at moderate depths (23 - 44 m) on very fine sand.
- 372:** Depressions and low slopes at moderate depths (44 – 75 m) on very fine sand.
- 317:** Mid-position flats at moderate depths (31 - 75 m) on fine to medium sand.
- 223:** Mid-position flats and depressions at moderate depths (44 - 75 m) on fine to medium sand.
- 381:** Mid and high position flats in moderate depths (44 - 79 m) on fine to very fine sand.

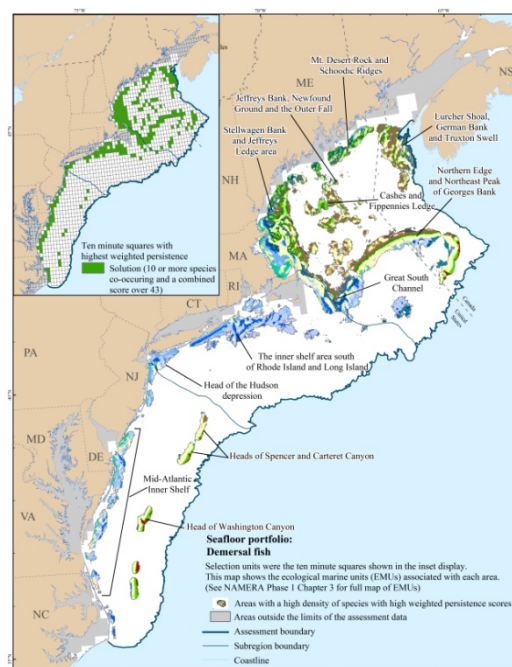
Moderate to Deep Depths

- 82:** All types of flats in moderately deep water (44 – 139 m) on medium to coarse sand.
- 949:** Mid and low flats in deep water (75-139 m) on medium to fine sand.
- 3:** Flats and slopes at moderate to very deep depths (average 128 m, min 44 m) on fine to very fine sand.
- 11:** High slopes, canyons, flats in deep water (60 – 485 m) on medium to fine sand.
- 437:** High flats and slopes in deep to very deep water (75 - 200 m) on fine sand.
- 6:** High slopes and flats at moderate to deep depths (44 - 139 m) on coarse to fine sand.
- 1:** Variable settings in a wide range of depths on fine to coarse sand. A very mixed set of samples with many unidentified species and few commonalities. Not a benthic habitat type, but listed here for completeness.

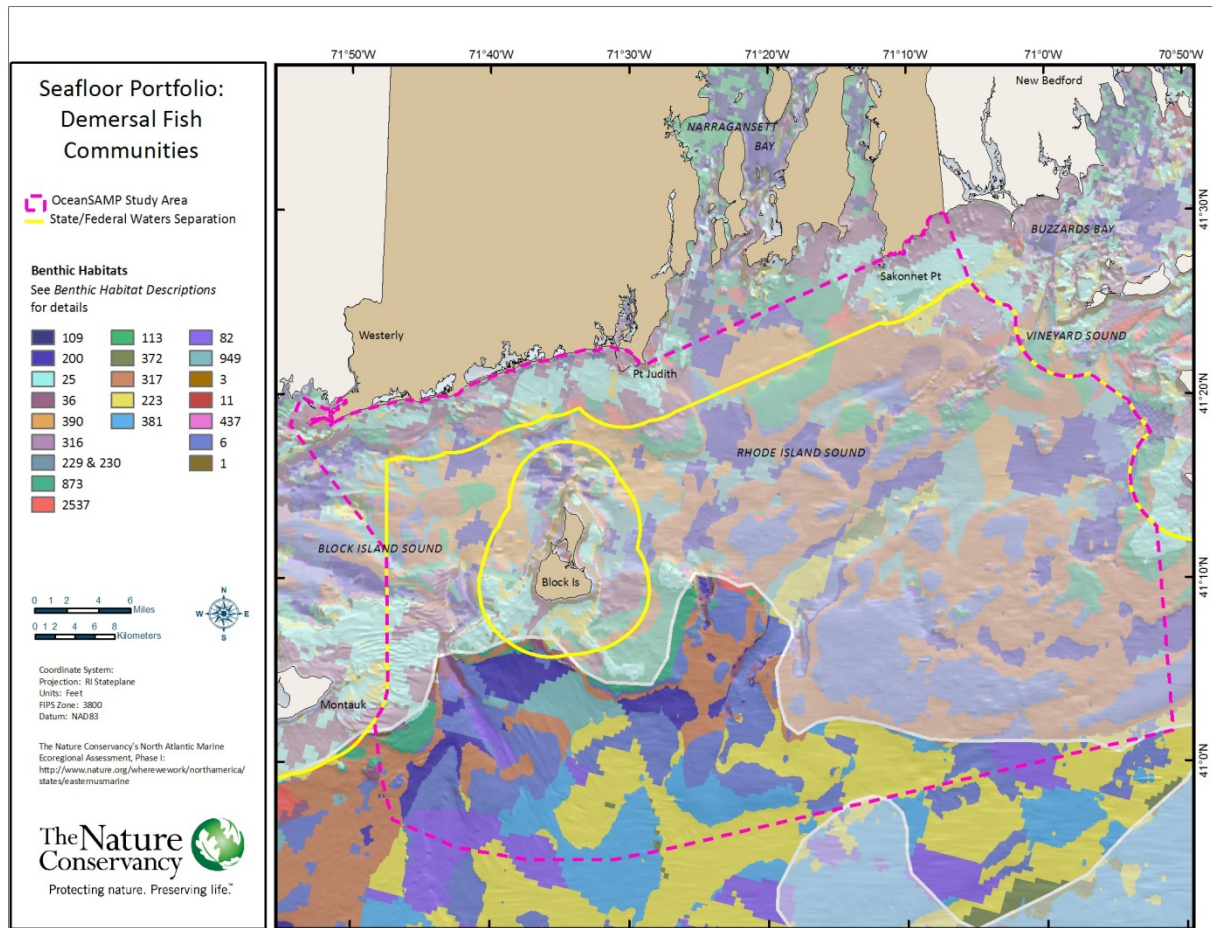
Sea Floor Portfolio Demersal Fish Persistence



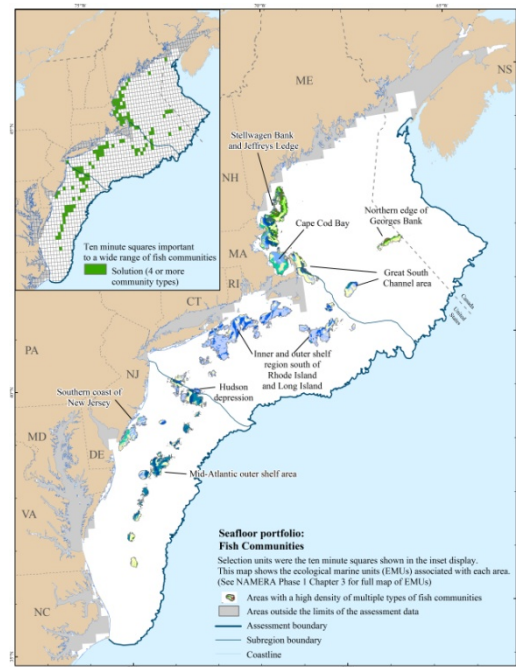
The regional assessment identified the inner shelf south of Long Island and Rhode Island as a hotspot for persistently abundant demersal fish. Since most of the OSAMP is a part of this hotspot and the patterns that are found within this scale could be attributed partly to sampling distribution, it is difficult to highlight particular areas within the OSAMP that merit attention. The regional significance of this area, though, is unquestionable.



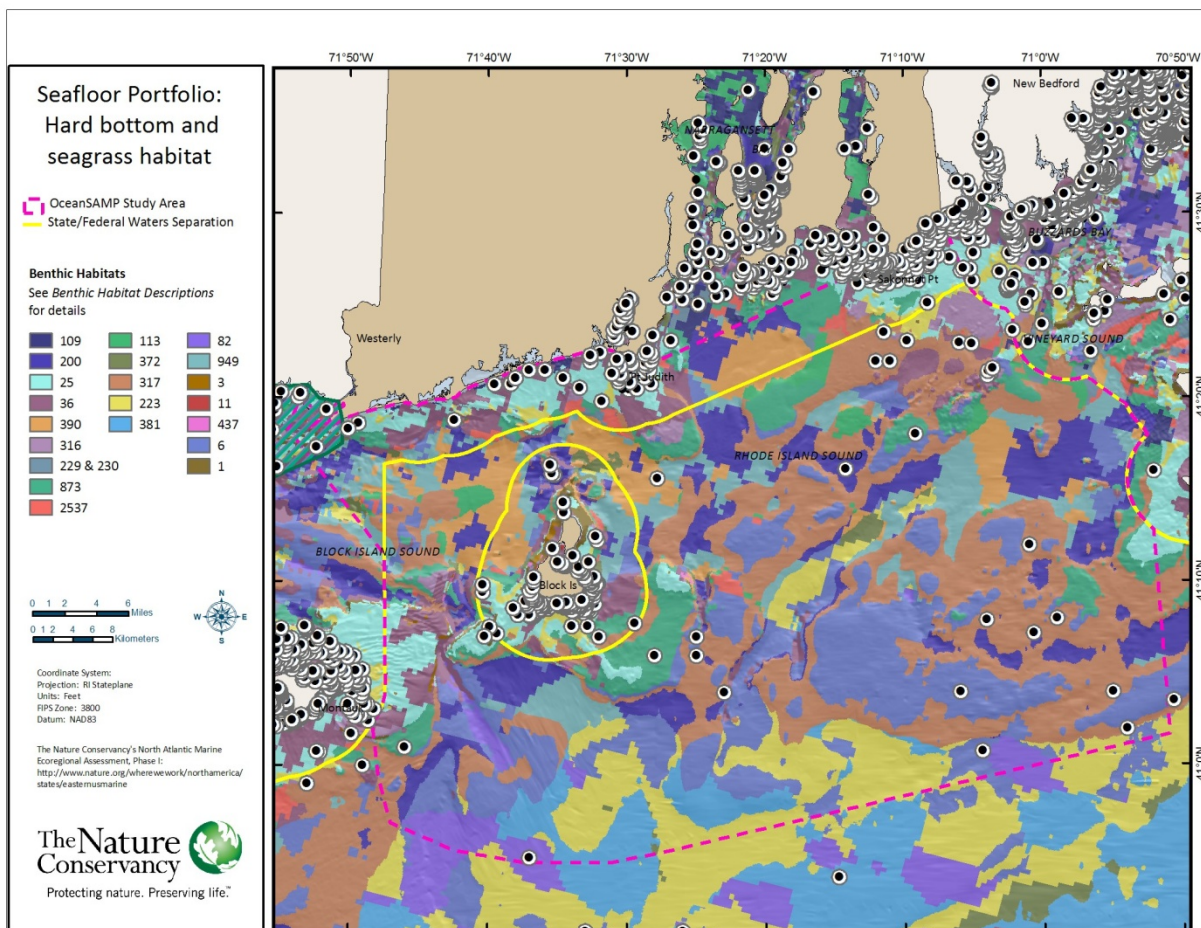
Fish Community Diversity



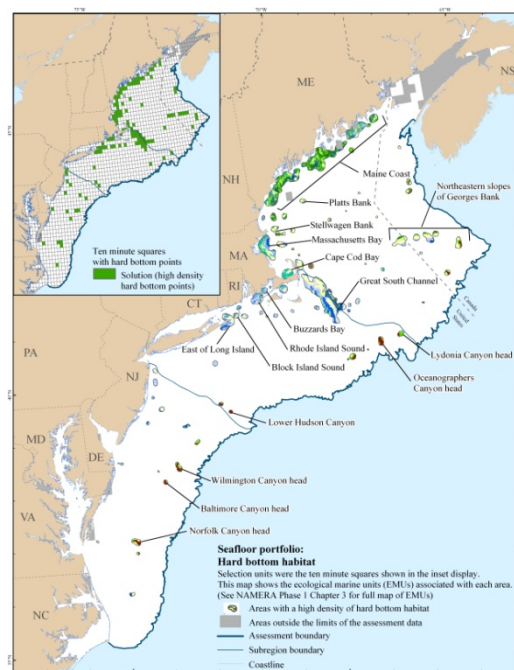
The sandy depressions south of the moraine appear to be an area that supports a high density of multiple fish communities. Further investigation is needed to understand the processes driving this diversity.



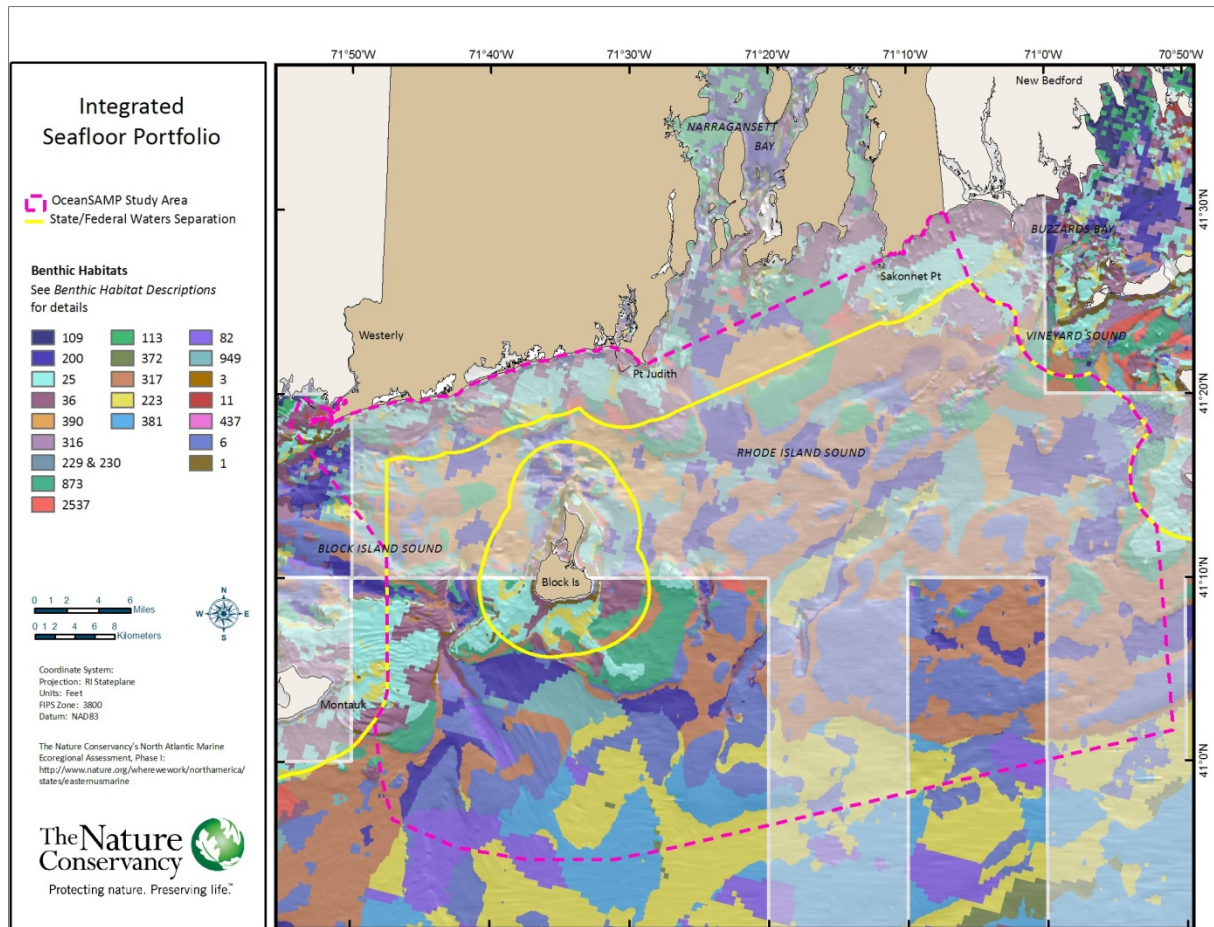
Hard Bottom and Seagrass Habitat



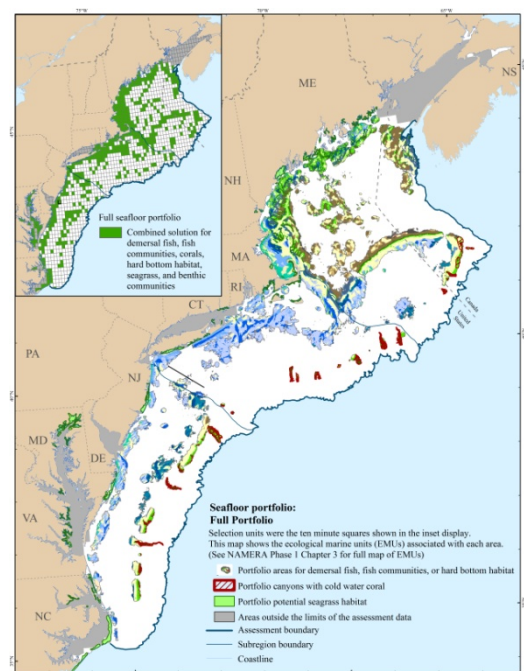
This area has some of the highest concentrations of hard bottom habitat in the Northwest Atlantic.



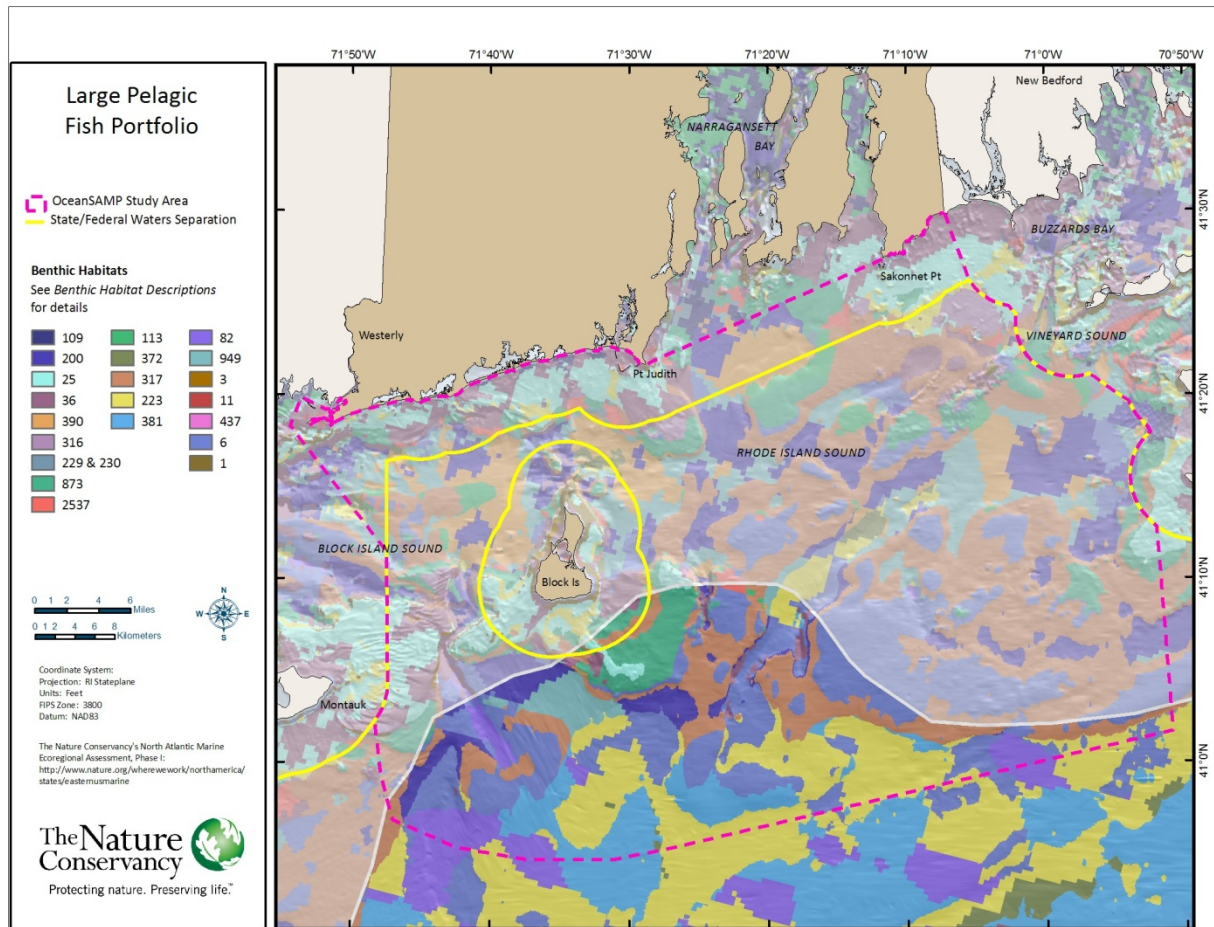
Integrated Seafloor Portfolio



The highlighted areas on the above map shows in a general way the places where there is a coincidence of highly persistent fish, diverse communities, and/or hard bottom habitat. The regional analysis highlights the importance of the area south of the moraine and particularly south of Block Island to demersal fish.

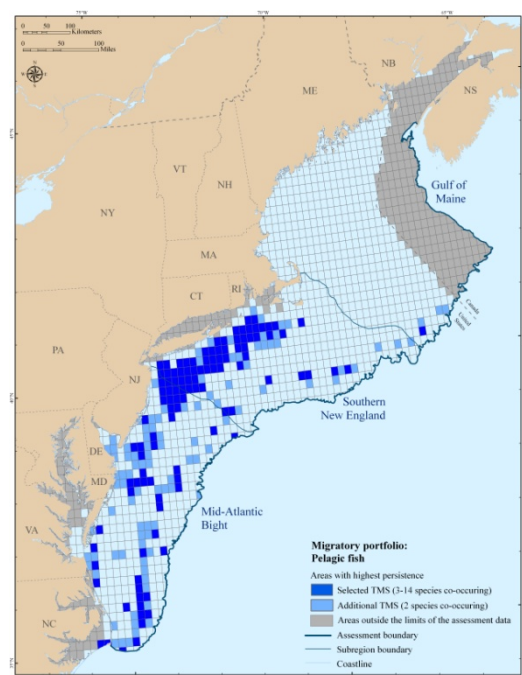


Migratory Portfolio *Large Pelagic Fish*



The persistent observations of target large pelagic fish were concentrated in the inner shelf area south of Long Island and Rhode Island as well as the shelf slope break. The highlighted area south of the moraine shows the rough extent of this regionally significant area in relation to the OSAMP.

For the purposes of this draft only the large pelagic fish will be highlighted from the migratory portfolio. This group was the most significant contributor to regional biodiversity of the analyzed migratory species for this area.



Integrated Portfolio

The Nature Conservancy's assessment looked at the coincidence of ecologically important seafloor, migratory and coastal habitats. Please refer to the original document for text and figures that illustrate this regional perspective in more detail.

Conclusions

Some general observations can be made from this regional analysis. It is clear that the marine environment off of Rhode Island's coast is an important contributor to the biodiversity in the Northwest Atlantic Ocean. The benthic habitats that can be found among the complex structures and hard rocky substrates of the moraine and areas to the north in proximity to the relatively flat sandy depressions to the south contribute to this areas unique role in the Atlantic.

The Rhode Island Chapter of The Nature Conservancy has just begun the interpretation of these data and will continue to refine the content of this document as we get more feedback and continue to analyze more of the source data.