



FV 11th Hour Inc. - Southwest of Sears Island, Searsport

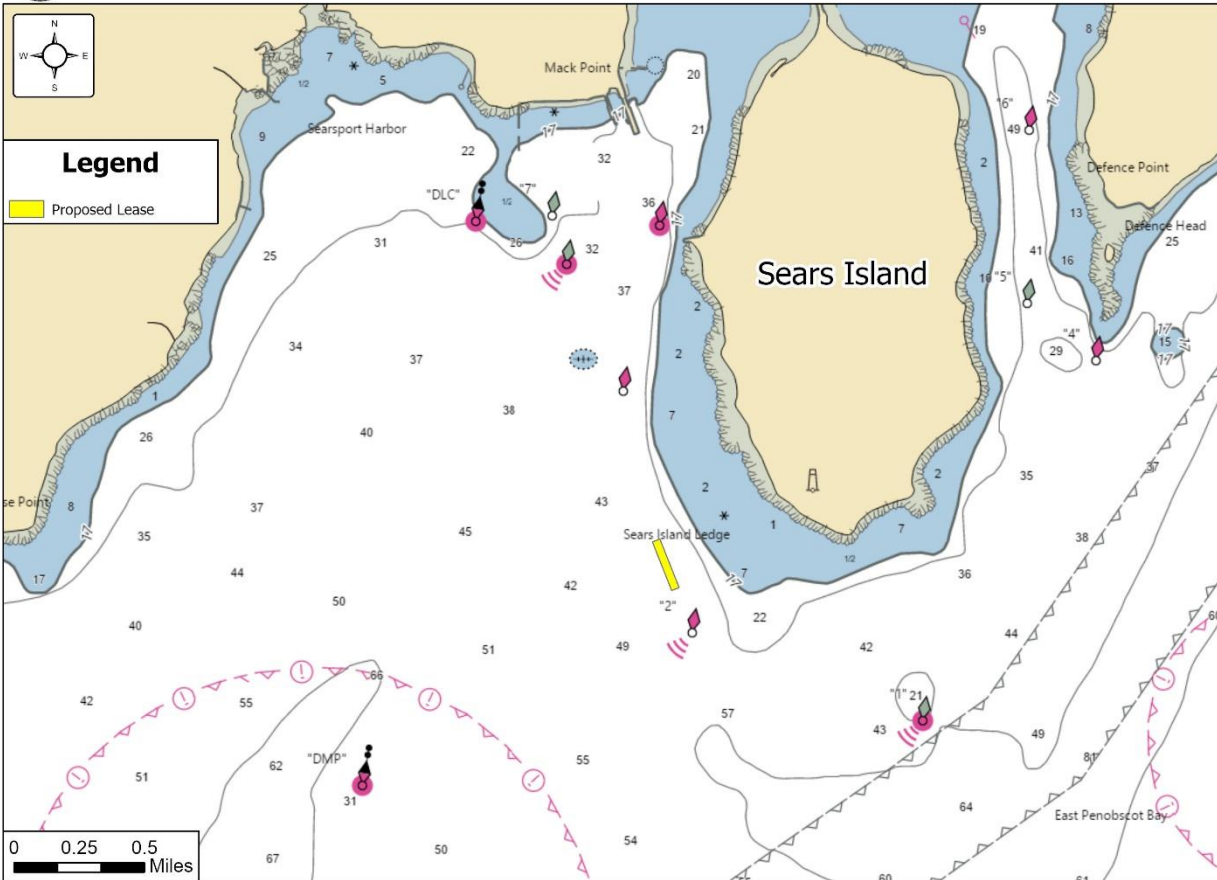


Figure 1. Vicinity map.¹

Location: Southwest of Sears Island, Penobscot Bay, Searsport, Waldo County, Maine

Purpose: Experimental lease for suspended culture of sugar kelp (*Saccharina latissima*), skinny kelp (*Saccharina angustissima*), winged kelp (*Alaria esculenta*), horsetail/fingered kelp (*Laminaria digitata*), dulse (*Palmaria palmata*), and sea lettuce (*Ulva lactuca*).

Site Review: Geoff Shook, Chloe Kilborn, Katie von Hohenleiten

Report Preparation: Katie von Hohenleiten, Meryl Grady, Amanda Ellis

¹ Unless otherwise noted, all figures in this report were created in ArcGIS Pro version 2.9 using digitized NOAA Nautical Charts or georeferenced aerial photographs provided by The Maine Office of GIS.



Application Overview

The applicant, FV 11th Hour Inc, is requesting 3.95² acres southwest of Sears Island in Penobscot Bay for the suspended culture of marine algae. The applicant intends to remove all gear from June 16 through September 30 except the six required boundary markers and ten mooring buoys totaling sixteen moorings.³

General Characteristics

On October 26, 2023, Maine Department of Marine Resources (MDMR) scientists assessed the proposed lease site. MDMR scientists arrived on site at approximately 10:22 AM. The southwestern shore of Sears Island, in the vicinity of the proposal, consists of rocky and muddy coastline leading to a mixed forested upland. A walking trail with hikers could be seen from the vicinity of the proposal during the site visit.

Depth

MDMR scientists began collecting depths at the proposed site while the tide was ebbing at approximately 10:25 AM. Measured depths at the corners of the proposed lease site ranged from 53.6 to 58.8 feet. Correcting for tidal variation derives water depths at the corners of the proposal at mean low water (MLW, 0.0 feet) to be from 43.5 to 48.7 feet (Table 1).

Table 1. Predicted tidal heights in Searsport, Maine.⁴

Date	Time	Height (ft)
2023/10/26	2:55 AM	-0.3 L
2023/10/26	9:14 AM	11.2 H
2023/10/26	3:24 PM	-0.3 L
2023/10/26	9:38 PM	11.5 H

Bottom Characteristics

MDMR scientists observed the bottom characteristics of the proposed lease site via a remotely operated vehicle (ROV). Bottom characteristics were categorized using the Coastal and Marine Ecological Classification Standard (CMECS), a national standard for describing features of the marine environment (Table 2). Sediment information was determined based on visual analysis of the video. The bottom of the proposed lease site is composed of mud.

Table 2. Bottom characteristics of the proposed site.

Substrate Origin	Substrate Class	Substrate Subclass	Substrate Group
Geologic Substrate	Unconsolidated Mineral Substrate	Fine Unconsolidated Substrate	Mud

² Applicant originally requested 3.94 acres. MDMR calculations indicate the area is 3.95 acres.

³ Application page 8

⁴ <https://www.usharbors.com/harbor/maine/searsport-me/tides/?tide=2023-10#monthly-tide-chart>



Position and Distances to Shore

The measuring tool in ArcGIS Pro 2.9 was used to verify the distances and bearings between proposed lease corners. Distances to shore were determined using the measuring tool in ArcGIS Pro 2.9, digital orthophotography provided by the Maine Office of GIS, and the application coordinates (Table 3, Figure 2).

Application Coordinates (WGS84) – 3.95 Acres

<u>Corner</u>	<u>Latitude</u>	<u>Longitude</u>	
NW	44.42769°	-68.89533°	then 162.4 feet at 068° True to
NE	44.42785°	-68.89475°	then 1,058.5 feet at 158° True to
SE	44.42515°	-68.89326°	then 162.4 feet at 248° True to
SW	44.42499°	-68.89384°	then 1,058.5 feet at 338° True to NW

Table 3. Approximate distances from proposed lease corners to surrounding features (Figures 2 & 3).

Feature	Distance
NE corner to Sears Island Ledge at MLW	~1,196.4' to the east
SE corner to Sears Island at MLW	~2,749.2' to the east
SW corner to red navigation buoy "2"	~944.3' to the southeast
NW corner to red navigational buoy	~3,114.3' to the north



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Figure 2. Proposed lease area with site visit observations.

Pursuant to statute and regulation, aquaculture leases are evaluated in consideration of applicable decision criteria. The site report documents MDMR’s observations of the area and other information, in consideration of those criteria, as noted below:

(1) Riparian Ingress and Egress

MDMR did not observe any docks, houses, or moorings in the vicinity of the proposal. Nearby Sears Island, located to the northeast of the proposal, is owned by the State of Maine and no docks or other structures were observed at the time of the site visit. The proposal is over 1,000 feet from any shoreline.

(2) Navigation

The proposal is located approximately 944.3 feet northwest of the red navigational channel buoy “2” and 3,114.3 feet south of the next red navigational channel buoy (Figure 3). The center of the navigational channel is located approximately 3,539.4 feet to the west of the proposal. Sears



Island is located 2,250 feet (at MLW) east of the northeastern corner of the proposal. Sears Island Ledge located between the proposal and Sears Island is approximately 1,196.4 feet east of the proposal. During the site visit, MDMR scientists observed one recreational powerboat navigating to the west of the site. A vessel marked "security" was stationary to the north of the proposal near Mack Point. It is possible that the vessel is utilized to conduct security related patrols in the area.

In the harbormaster questionnaire received on April 22, 2023, the local harbormaster expressed concern that the proposed lease is between two navigational buoys on a course that many recreational and commercial vessels regularly traverse. The harbormaster suggested moving the lease 400 feet to the east to significantly reduce the likelihood of vessel interactions.



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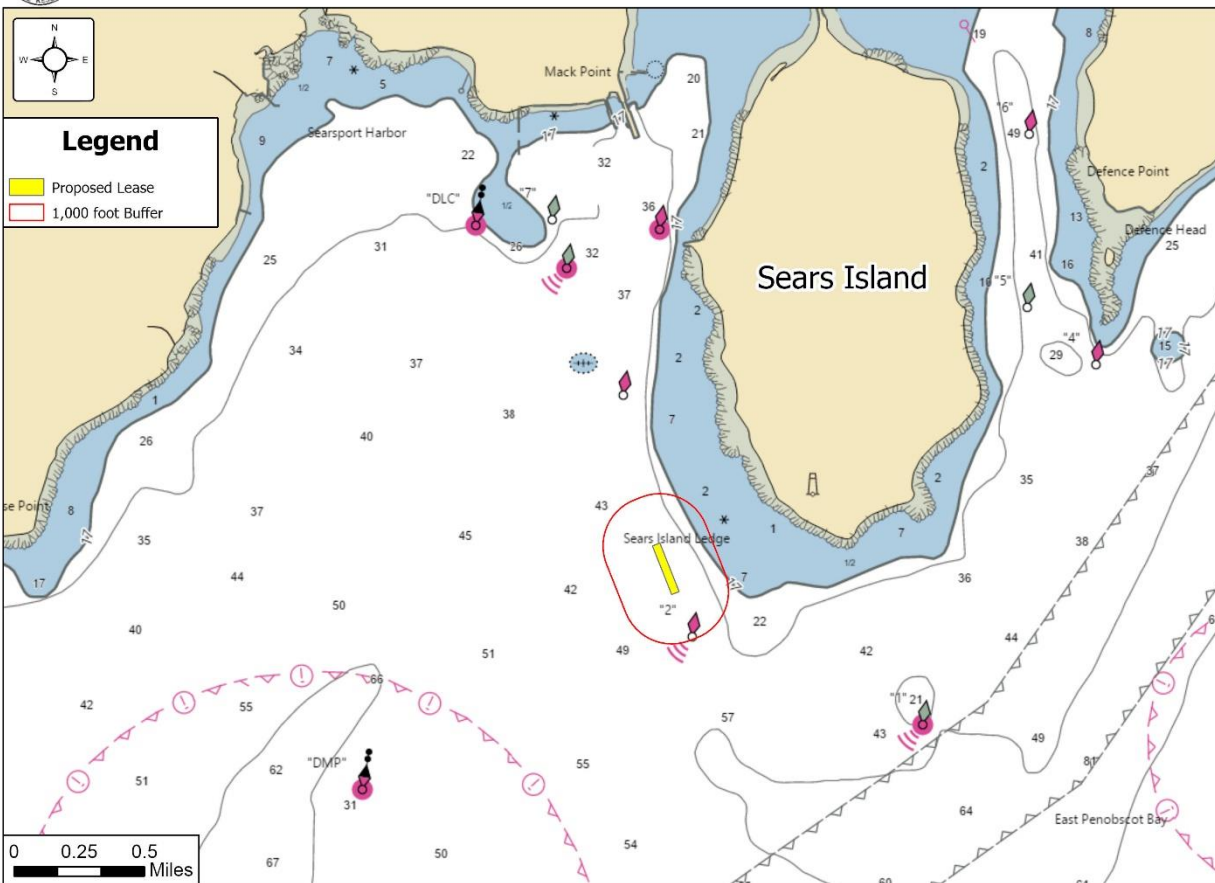


Figure 3. Navigational channels in the vicinity of the proposed lease area.



(3) Fishing and Other Uses

During the site visit, MDMR documented 6-10 lobster buoys within 1,000 feet of the proposed lease. MDMR recorded the location of buoys closest to the proposal, as seen in Figure 2, including a cluster of lobster buoys that are represented as a single point. During the site visit, MDMR scientists observed one commercial fishing vessel in the general area of the proposed lease. According to the lease application⁵ and harbormaster questionnaire, both commercial and recreational fishing in this area is uncommon.

(4) Other Aquaculture Uses

There are no aquaculture leases or limited purpose aquaculture (LPA) sites within 1,000 feet of the proposed lease site (Figure 4).



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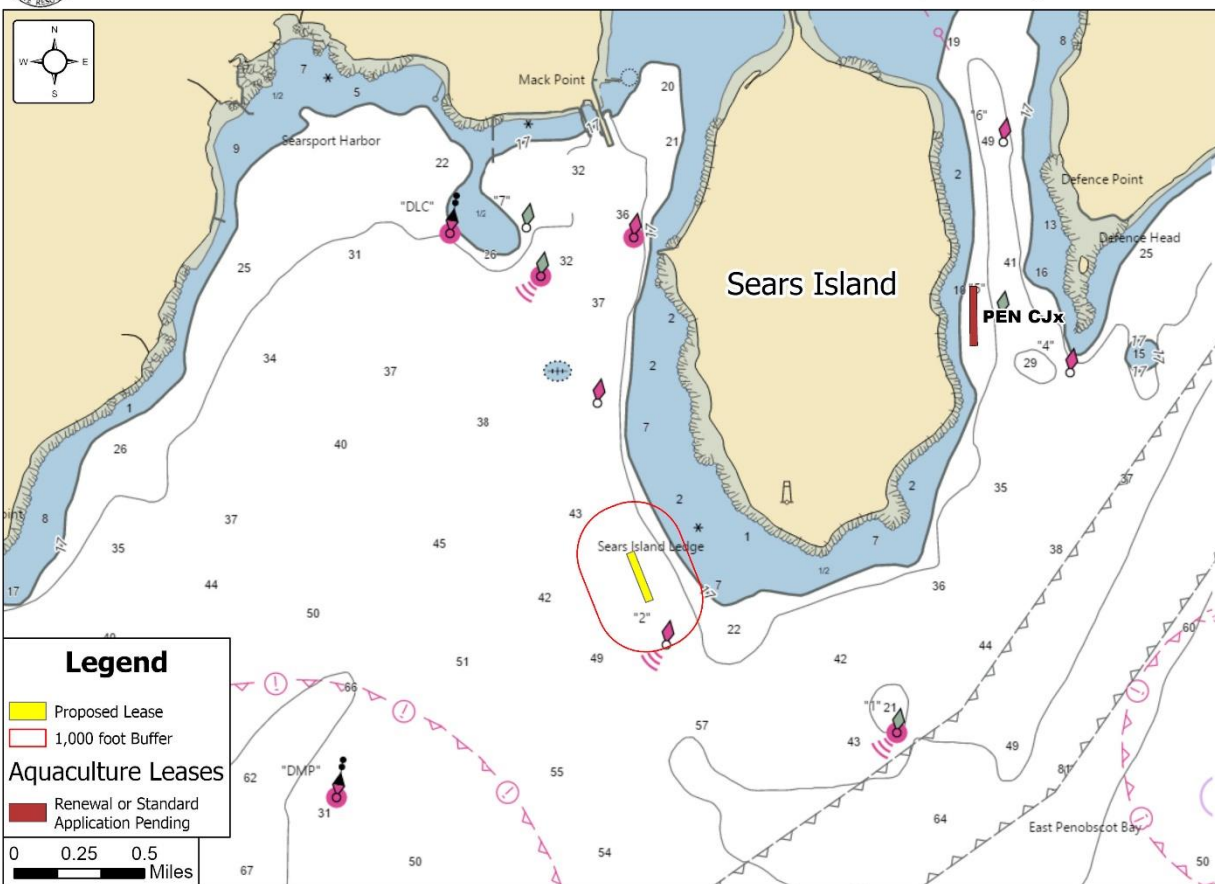


Figure 4. Aquaculture leases and LPA licenses in the vicinity of the proposed lease area.

⁵ Application page 10



(5) Existing System Support

Epibenthic Flora and Fauna

On October 26, 2023, MDMR scientists utilized an ROV to assess the epibenthic ecology of the proposed lease. The relative abundance of epibenthic flora and fauna observed in the video transect is described below in Table 4.

Table 4. Species observed using underwater camera footage.

Species Observed	Abundance
Shrimp (<i>Crangon septemspinosa</i>)	Common
Rock Crab (<i>Cancer irroratus</i>)	Occasional
Hermit Crab (<i>Pagurus spp.</i>)	Rare
Moon Jellyfish (<i>Aurelia aurita</i>)	Rare

Eelgrass (*Zostera marina*)

Historical records of eelgrass collected by MDMR in 2010 does not indicate mapped eelgrass presence in the vicinity of the proposal (Figure 5).⁶ No eelgrass was observed on underwater camera footage within the proposal boundaries during MDMR’s site assessment.

⁶ Data obtained from The Maine Office of GIS “GISVIEW.MEDMR.Eelgrass”. This is the most current record of mapped eelgrass within the vicinity of the proposal.



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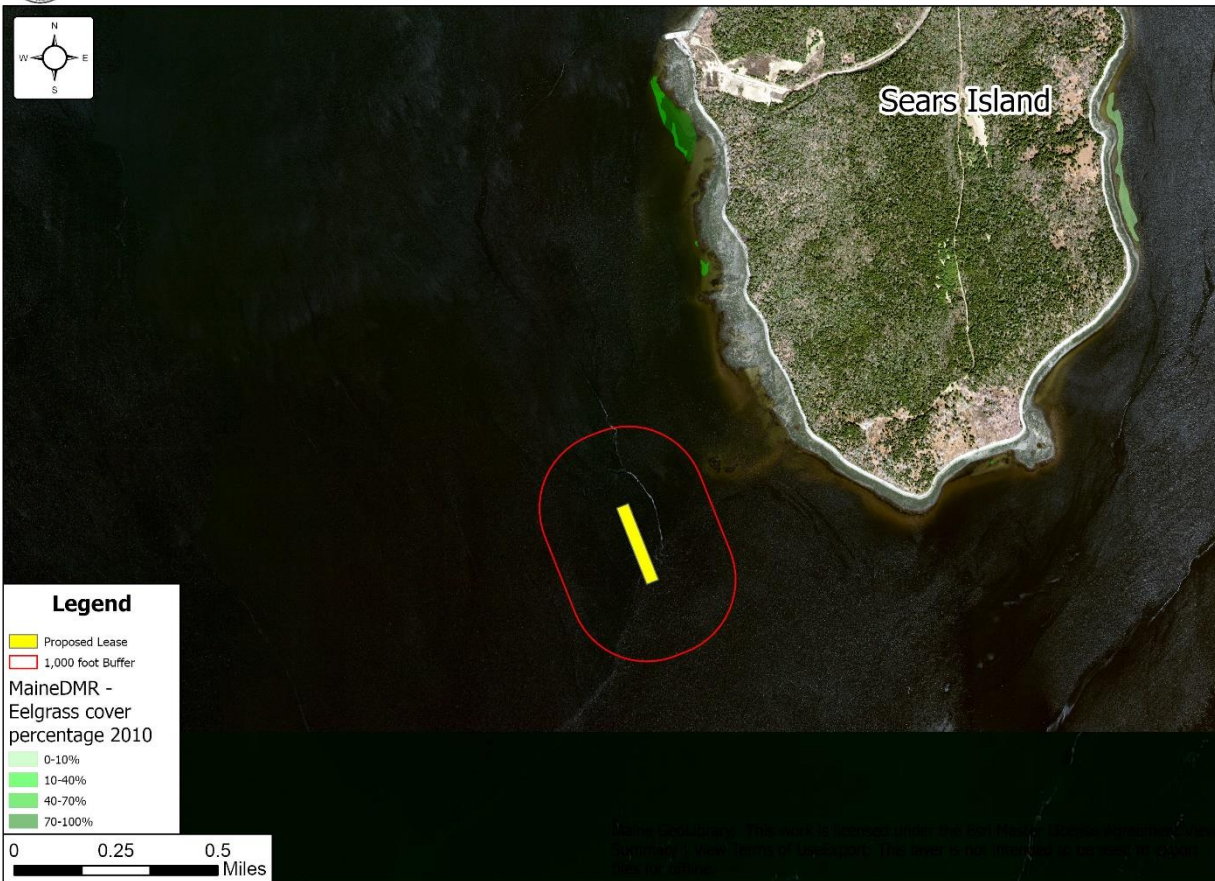


Figure 5. Mapped eelgrass (*Z. marina*) in the vicinity of the proposed lease area.

Wildlife

According to Geographic Information System (GIS) data maintained by the Maine Department of Inland Fisheries and Wildlife (MDIFW) and available through the Maine Office of GIS (MEGIS), the proposed lease is not located within 1,000 feet of mapped Tidal Waterfowl and Wading Bird Habitat. Data collected by the United States Fish and Wildlife Service in 2023 by aerial nest survey shows the closest mapped bald eagle nesting site to be approximately 2.0 miles east of the proposal; with another bald eagle nest located 2.25 miles to the northwest of the proposal (Figure 6).

In addition to the epibenthic flora and fauna observed, there were double-crested cormorants (*Nannopterum auritum*), ring billed gulls (*Larus delawarensis*), and black guillemots (*Cepphus grille*) in the general vicinity of the proposal.



On June 22, 2023, a Wildlife Biologist with MDIFW responded by email to a “Request for Agency Review and Comment” stating minimal impacts to wildlife are anticipated for this project.⁷



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Figure 6. Mapped bald eagle nests and Tidal Waterfowl and Wading Bird Habitat.⁸

(6) Interference with Public Facilities

The proposed lease is not within 1,000 feet of any beach, park, or docking facility owned by federal, state, or municipal governments.

The State of Maine has chosen a state-owned portion of Sears Island, reserved for port development, as the preferred port location for the Maine Offshore Wind Initiative.⁹ This may lead to the construction of a port facility on the western shore of Sears Island, which would

⁷ Email correspondence between MDIFW and MDMR

⁸ Data obtained from USFWS “Bald_Eagle_Nests_-_Maine_2023” and MDIFW maintained SDE Feature Class “GISVIEW.MEIFW.Twwh”

⁹ <https://www.maine.gov/governor/mills/news/governor-mills-announces-sears-island-preferred-site-port-support-floating-offshore-wind-2024>



be used for offshore wind fabrication, staging, assembly, and deployment (Figure 7).¹⁰ The estimated timeline of construction would be between 2025-2030.¹¹



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Figure 7. Mapped Maine conserved lands and possible future port facility for offshore wind development¹²

(7) Water Quality

The proposed lease is currently located within an area classified as Approved by the MDMR Bureau of Public Health and Aquaculture.

¹⁰ Ibid.

¹¹ https://www.maine.gov/energy/sites/maine.gov.energy/files/inline-files/Maine_Offshore_Wind_Roadmap_February_2023_ExSum.pdf

¹² Data obtained from The Maine Office of GIS "https://gis.maine.gov/arcgis/rest/services/acf/Conserved_Lands/MapServer"