



Thomas Henninger- Northwest of Littlejohn Island, Yarmouth

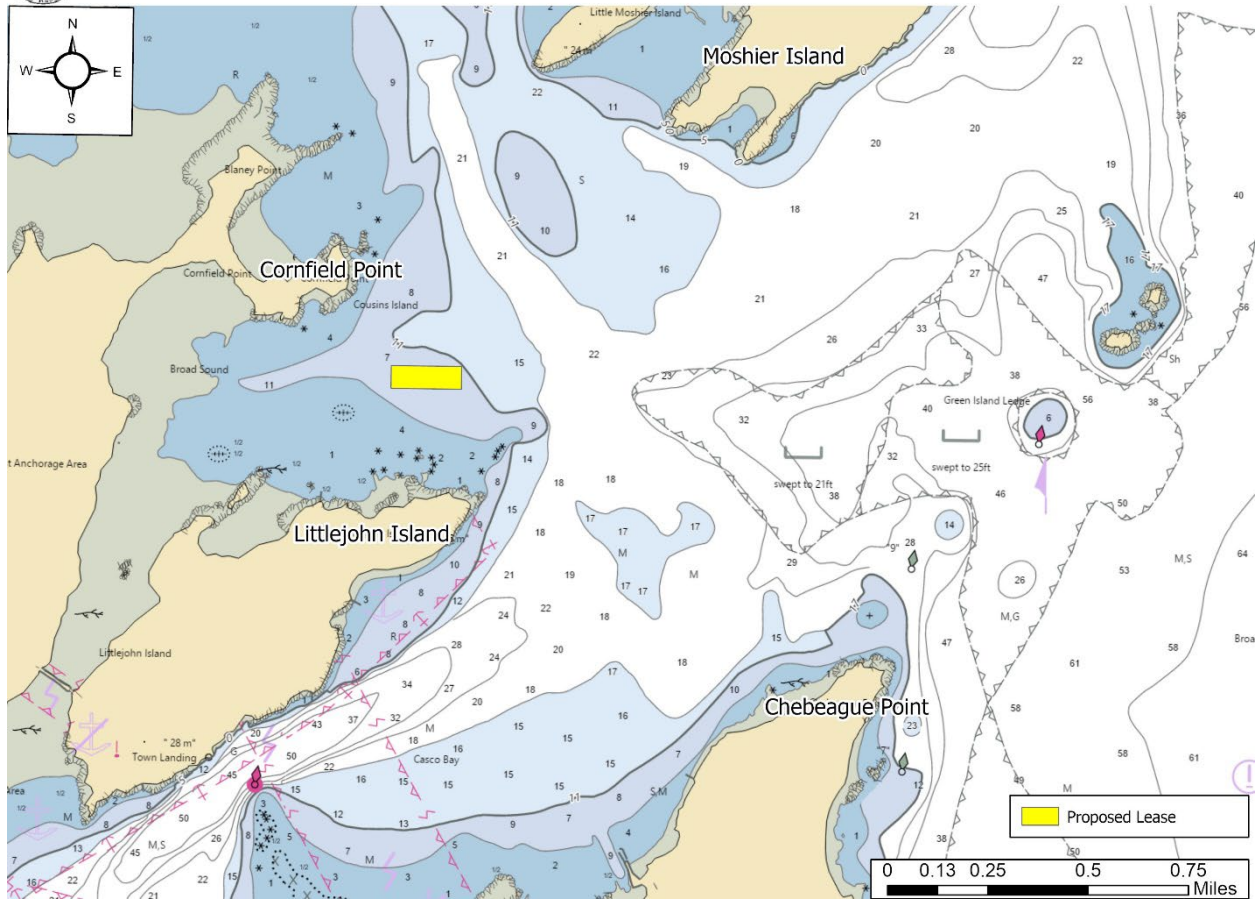


Figure 1. Vicinity map.¹

Location: Northwest of Littlejohn Island, Casco Bay, Yarmouth, Cumberland County, Maine

Purpose: Standard lease for suspended culture of American/eastern oysters (*Crassostrea virginica*) Atlantic sea scallops (*Placopecten magellanicus*), and hard clams/quahogs (*Mercenaria mercenaria*)

Site Review: Meryl Grady and Geoff Shook

Report Preparation: Katie von Hohenleiten, Geoff Shook, and Meryl Grady

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



Application Overview

The applicant, Thomas Henninger, is requesting a 6.37-acre standard lease northwest of Littlejohn Island in Casco Bay, Yarmouth for the suspended culture of shellfish. The applicant currently operates experimental lease CAS LJ2x within the area of the proposal (Figure 4). The applicant is proposing an expansion from 2.06² acres to 6.37 acres. The current experimental lease CAS LJ2x is authorized to cultivate sugar kelp (*Saccharina latissima*), skinny kelp (*Saccharina angustissima*), and American oysters (*Crassostrea virginica*). This standard lease proposal does not contain marine algae.

General Characteristics

On June 4, 2024, Maine Department of Marine Resources (MDMR) scientists assessed the proposed lease site. MDMR scientists arrived on site at approximately 10:35 AM. The proposal is situated northwest of Littlejohn Island and southeast of Cousins Island in Casco Bay. Both islands have scattered residential homes. The shoreline in the area of the proposal consists of rockweed covered ledges leading to mixed forest uplands.

Depth

On June 4, 2024, MDMR scientists began collecting depths at the proposed site shortly after high tide at approximately 10:37 AM. The tide was falling with the next low tide predicted to occur at 4:02 PM (Table 1). Depths were collected at the proposal corners and determined to be between 16.2 and 20.4 feet. Correcting for tidal variations derives water depths to be approximately 6.9 to 11.1 feet at mean low water (MLW, 0.0 feet) (Table 1).

Table 1. Predicted tidal heights in South Freeport, Maine.³

Date	Time	Height (ft)
06/04/2024	3:53 AM	-0.6 L
06/04/2024	10:08 AM	9.4 H
06/04/2024	4:02 PM	0.2 L
06/04/2024	10:21 PM	10.9 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 primarily composed of mud.

² Experimental lease decision history, page 5

³ <https://www.usharbors.com/harbor/maine/south-freeport-me/tides/?tide=2024-06#monthly-tide-chart>



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

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, a nautical chart provided by the National Oceanic and Atmospheric Administration (NOAA), and the application coordinates (Table 3, Figures 2 & 3).

Application Coordinates (WGS84) – 6.37 Acres

<u>Corner</u>	<u>Latitude</u>	<u>Longitude</u>	
NW	43.769634°	-70.119979°	then 926.9 feet at 090° True to
NE	43.769635°	-70.116470°	then 299.6 feet at 180° True to
SE	43.768813°	-70.116470°	then 927.0 feet at 270° True to
SW	43.768815°	-70.119979°	then 298.7 feet at 0° True to NW

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

Feature	Distance
NW Corner to Cornfield Point at MLW	~1,054.7 feet to the northwest
NE Corner to Moshier Island at MLW	~4,104.7 feet to the northeast
SE Corner to Chebeague Point at MLW	~5,596.5 feet to the southeast
SW Corner to Littlejohn island at MLW	~1,117.4 feet to the south



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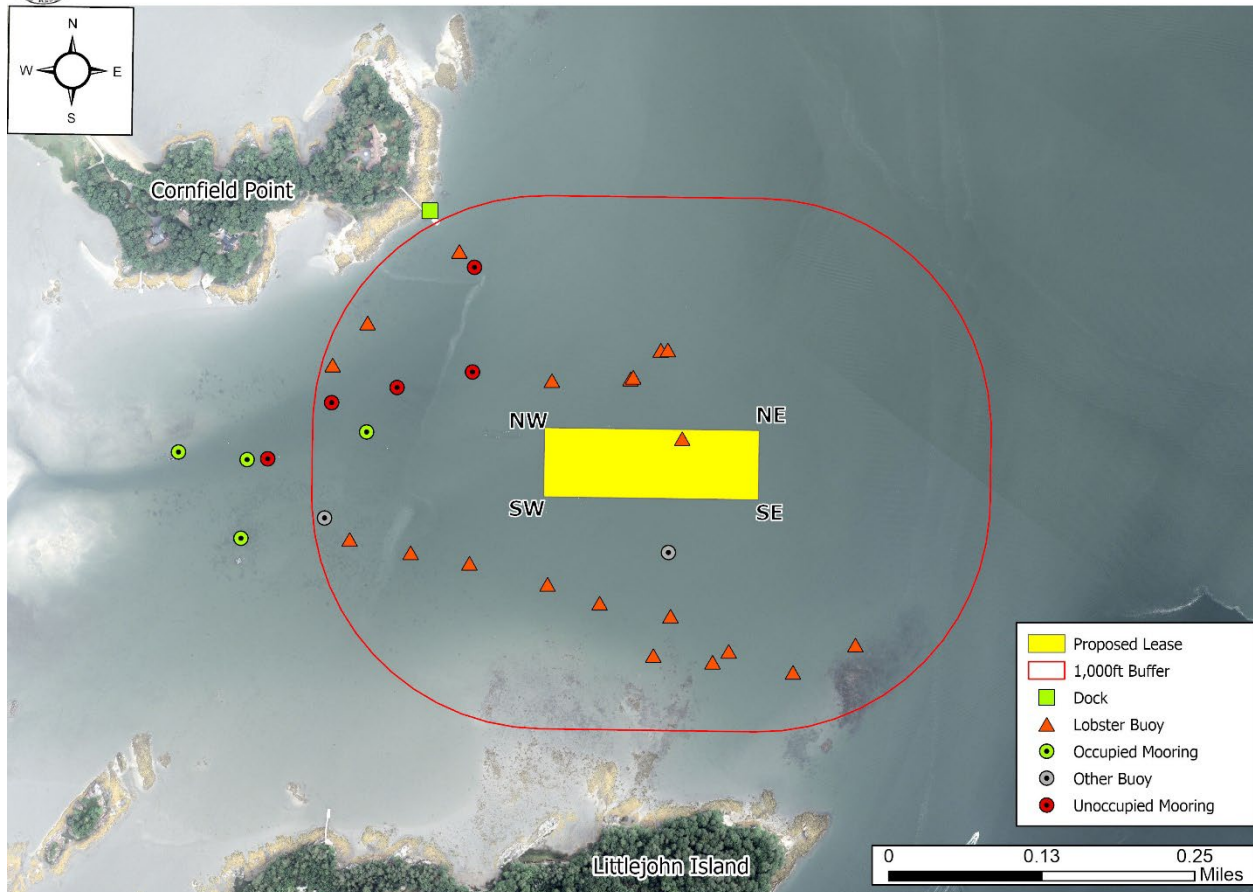


Figure 2. Proposed lease area with site visit observations.

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

During the site visit, MDMR scientists observed four unoccupied moorings and one occupied mooring that had four floats and two ramps attached to it within 1,000 feet of the proposed lease (Figure 2). Located just over 1,000 feet from the proposal, there was one unoccupied mooring and three occupied moorings. One mooring had a 33-foot outboard vessel, one had a small powerboat, and the third had a float with aquaculture gear stored on it. MDMR scientists observed one pier just over 1,000 feet to the northwest of the proposal. There was no dock in the water at the time of the site visit. Additionally, there were two buoys within 1,000 feet of the proposed lease that were classified as “other”, as their purpose could not be determined. One appeared to be a toggle buoy, and the other was a bumper buoy.



A Harbormaster Questionnaire was completed by the local harbormaster and submitted to the MDMR Aquaculture Division on May 3, 2023. The harbormaster indicated that the proposal will not impact riparian ingress and egress.

(2) Navigation

The proposed lease is located approximately 1,117.4 feet to the northwest of Littlejohn Island and approximately 1,054.7 feet to the southeast of Cornfield point on Cousins Island at MLW. The proposed lease is approximately 1,000 feet to the west of the nearest navigational channel (Figure 3). During the site assessment, MDMR observed four powerboats, one catamaran sailing vessel, and one commercial fishing vessel transiting southerly in the channel to the east of the proposal. One powerboat was navigating westerly between the proposal and Cornfield Point.

The harbormaster indicated in the Harbormaster Questionnaire that the proposed lease would have no effect on navigation for this area.

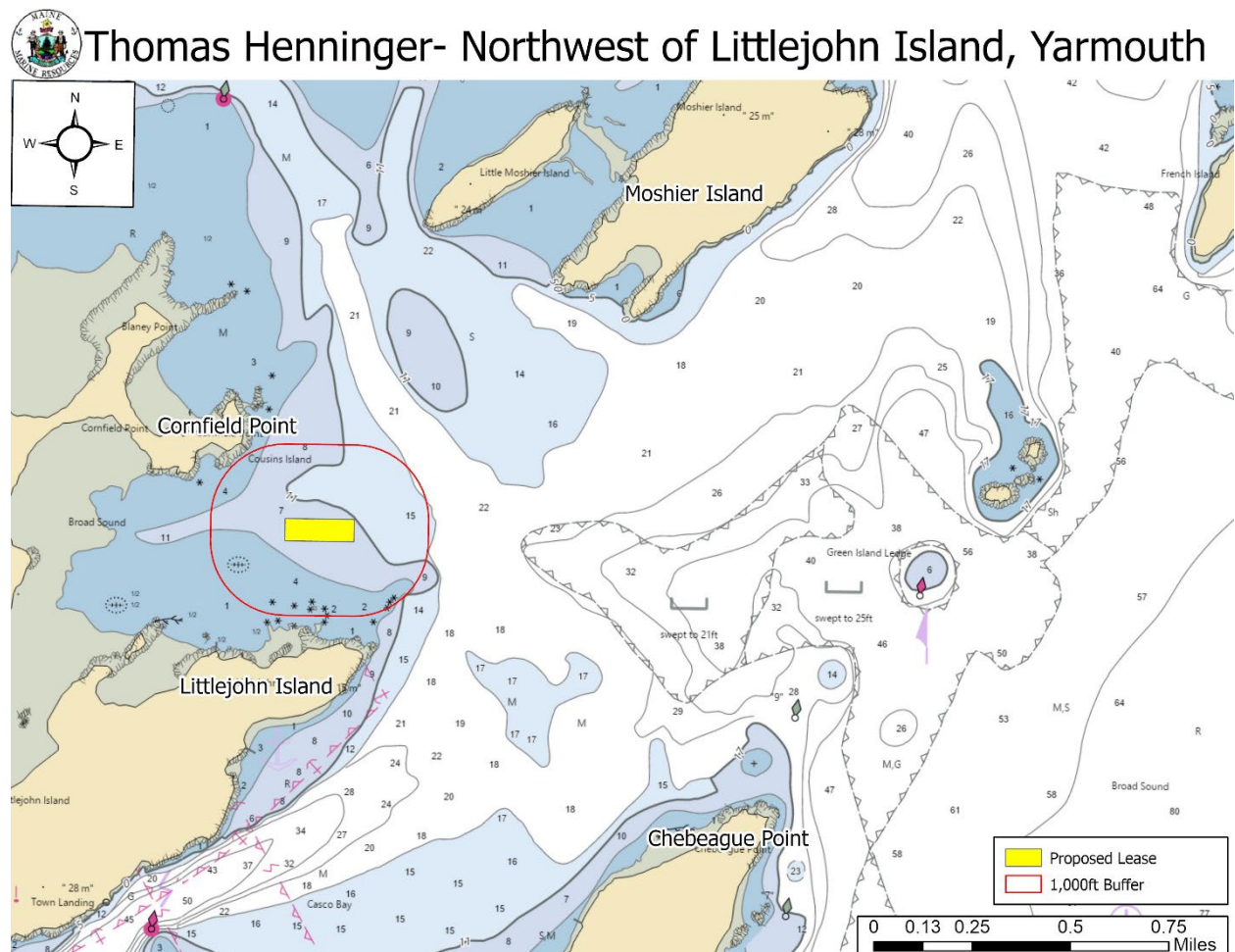


Figure 3. Navigational channels in the vicinity of the proposed lease area.



(3) Fishing and Other Uses

During MDMR’s site assessment, one skiff was observed recreationally fishing along the Cousins Island shoreline northwest of the proposed lease. During the site visit, 20 lobster buoys were observed within 1,000 feet of the proposed lease (Figure 2). The closest lobster buoy was observed within the footprint of the proposed lease.

(4) Other Aquaculture Uses

The applicant currently operates experimental lease CAS LJ2x within the boundaries of this proposal. This standard lease proposal is intended to replace CAS LJ2x. There are four limited purpose aquaculture (LPA) sites within 1,000 feet of the proposed lease area – AGAI121, AGAI221, HERR120, and HERR220 (Figure 4).

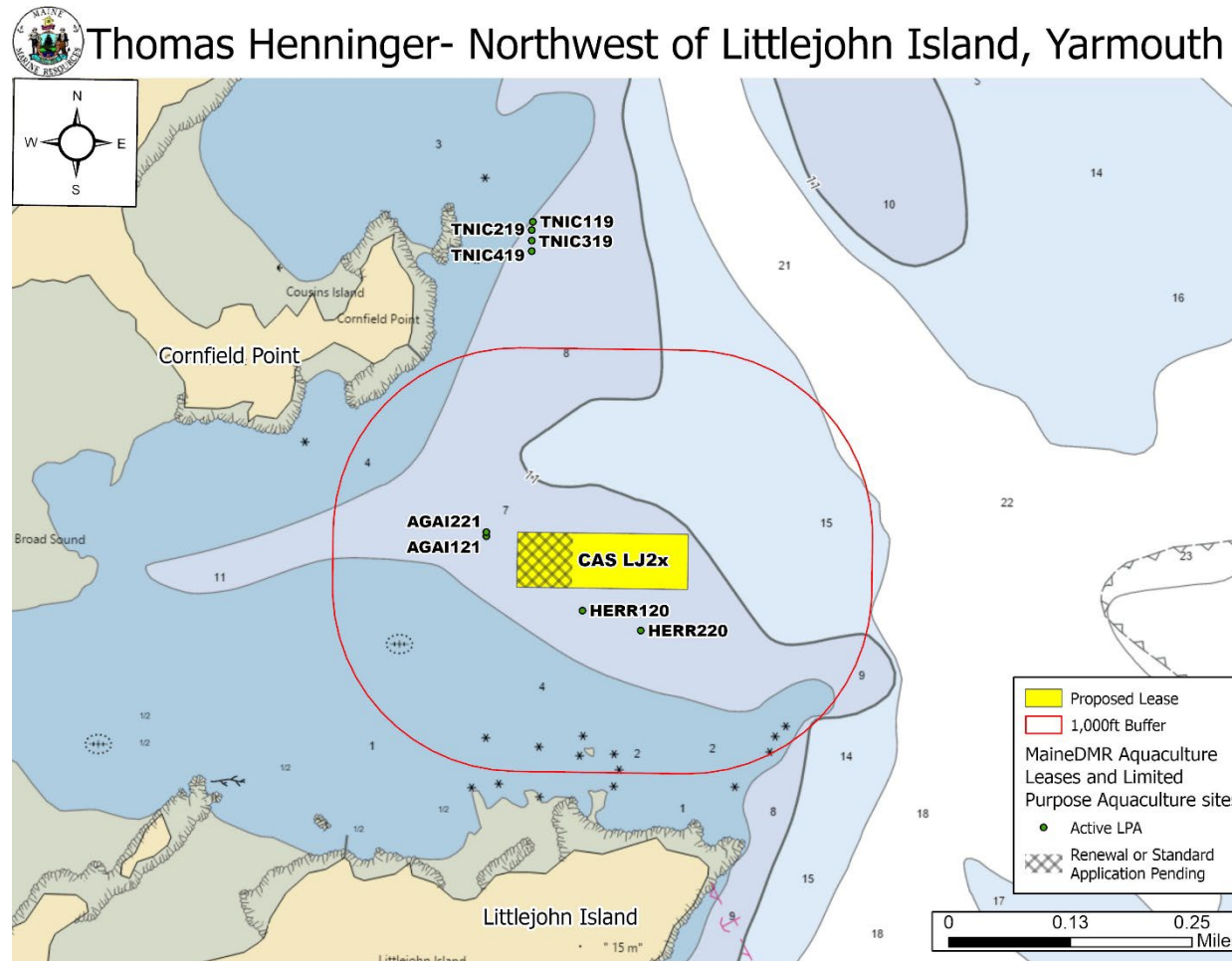


Figure 4. Aquaculture leases and LPA licenses in the vicinity of the proposed lease area.



(5) Existing System Support

Epibenthic Flora and Fauna

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 transects is described below in Table 4.

Table 4. Species observed using underwater camera footage.

Species Observed	Abundance
Sand shrimp (<i>Crangon septemspinosa</i>)	Abundant
Rockweed (<i>Ascophyllum nodosum</i>)	Occasional

Eelgrass (*Zostera marina*)

Recent records of seagrass collected by the Maine Department of Environmental Protection (MDEP) in 2022 indicate four patches of mapped eelgrass in the vicinity of the proposal. The nearest patch is approximately 301.5 feet southwest of the proposal (Figure 5).⁴ No eelgrass was observed within the proposal boundaries during MDMR’s site assessment.

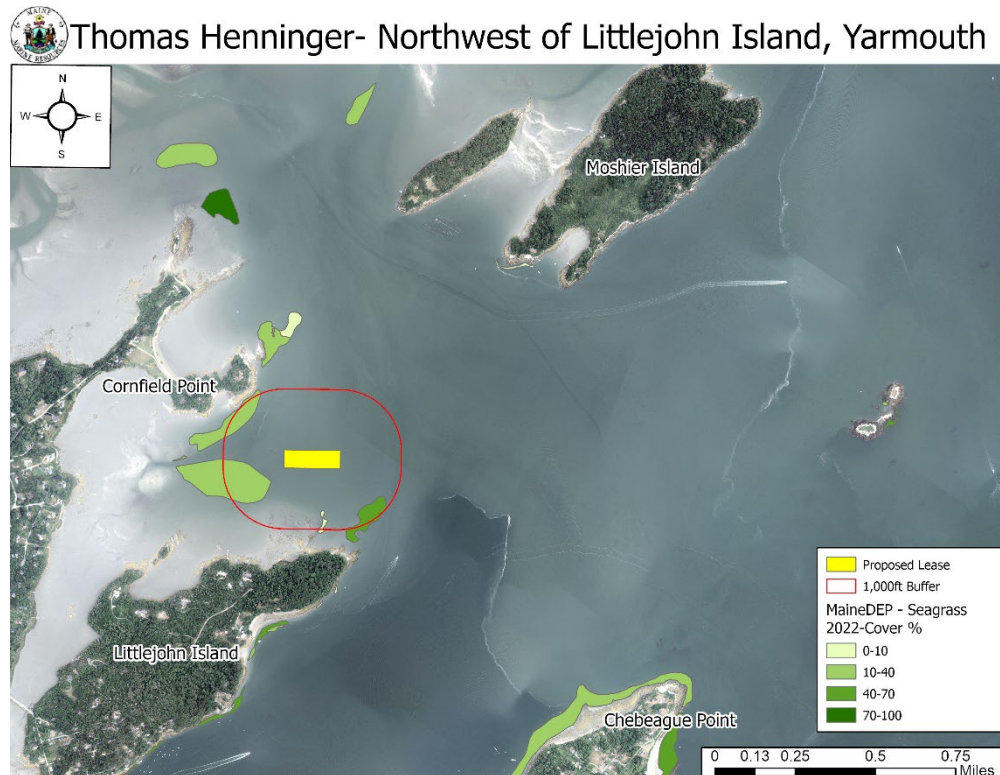


Figure 5. Mapped eelgrass (*Z. marina*) in the vicinity of the proposed lease area.

⁴ Data obtained from The Maine Office of GIS “GISVIEW.MEDEP.Seagrass2022”. Widgeon grass was observed only in the New Meadows River area off Old Brunswick Road near shore. Eelgrass was the dominant vascular species in all other locations. This is the most current record of mapped eelgrass within the vicinity of the proposal.



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 located 689.3 feet to the northwest of mapped Tidal Waterfowl and Wading Bird Habitat (TWWH) (Figure 6). 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 1.54 miles northwest of the proposal.

During the site assessment, MDMR scientists observed a school of Atlantic menhaden (*Brevoortia tyrannus*) at the surface of the water, double-crested cormorant (*Nannopterum auritum*), herring gull (*Larus argentatus*), lesser black backed gull (*Larus fuscus*), common loon (*Gavia immer*) and an osprey nest in the vicinity of the proposal.

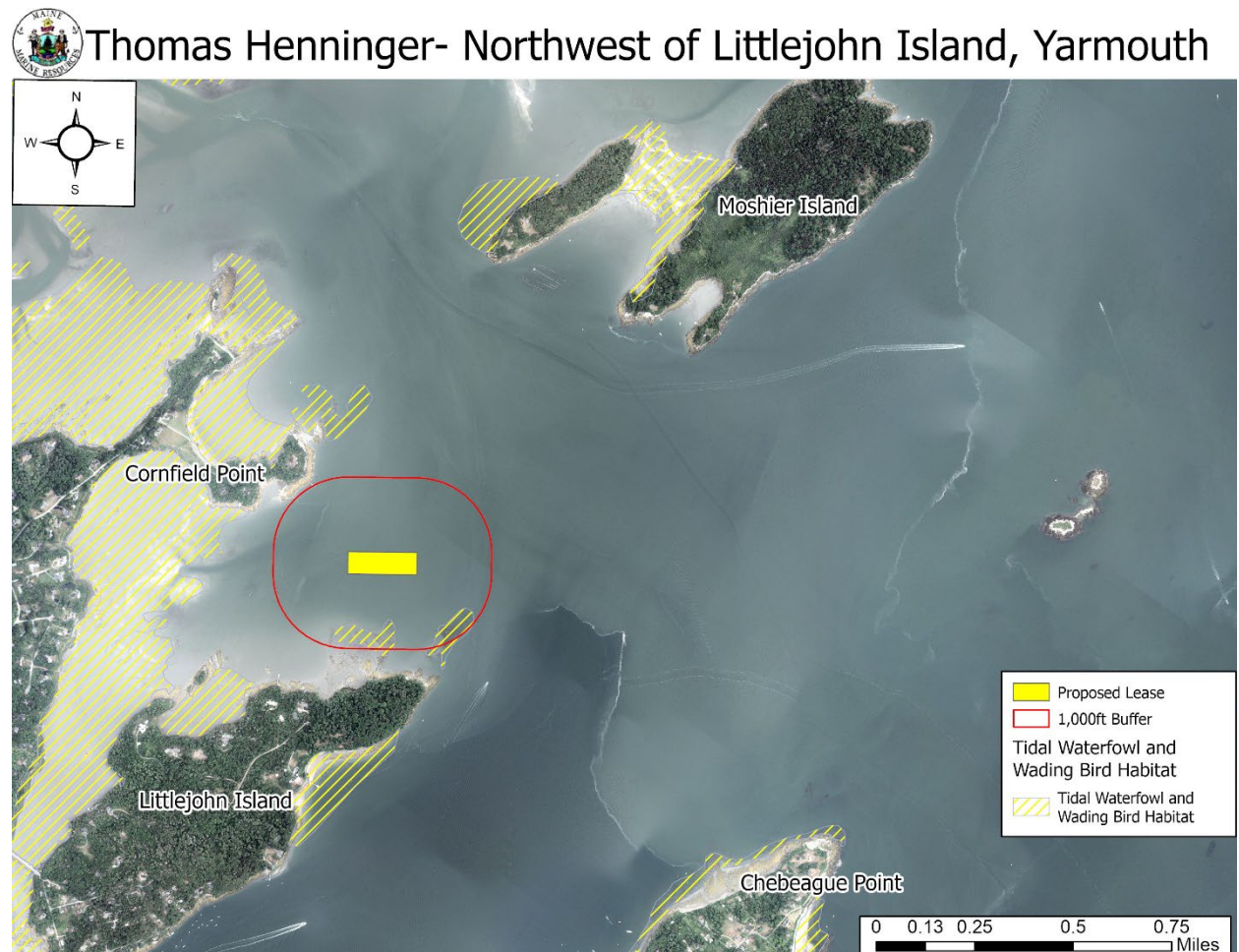


Figure 6. Mapped bald eagle nests and TWWH.⁵

⁵ Data obtained from USFWS “Bald_Eagle_Nests_-_Maine_2023” and MDIFW maintained SDE Feature Class “GISVIEW.MEIFW.Twwh”



(6) Interference with Public Facilities

The proposed lease is not within 1,000 feet of any beach, park, docking facility, or conserved lands owned by federal, state, or municipal governments (Figure 7).



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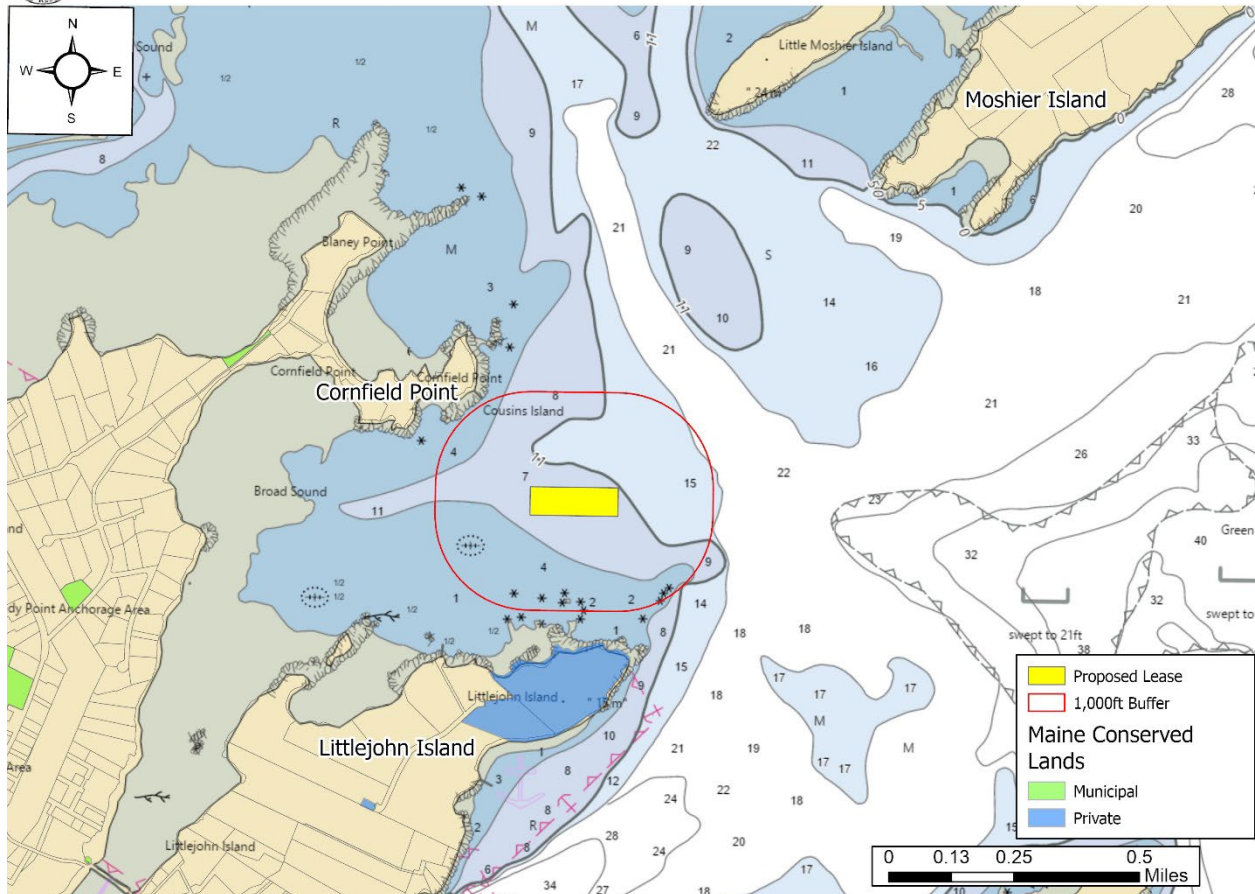


Figure 7. Public facilities near the proposed lease site.⁶

(7) Water Quality

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

⁶ Data obtained from The Maine Office of GIS "GISVIEW.MECONSLANDS.Conserved_Lands"