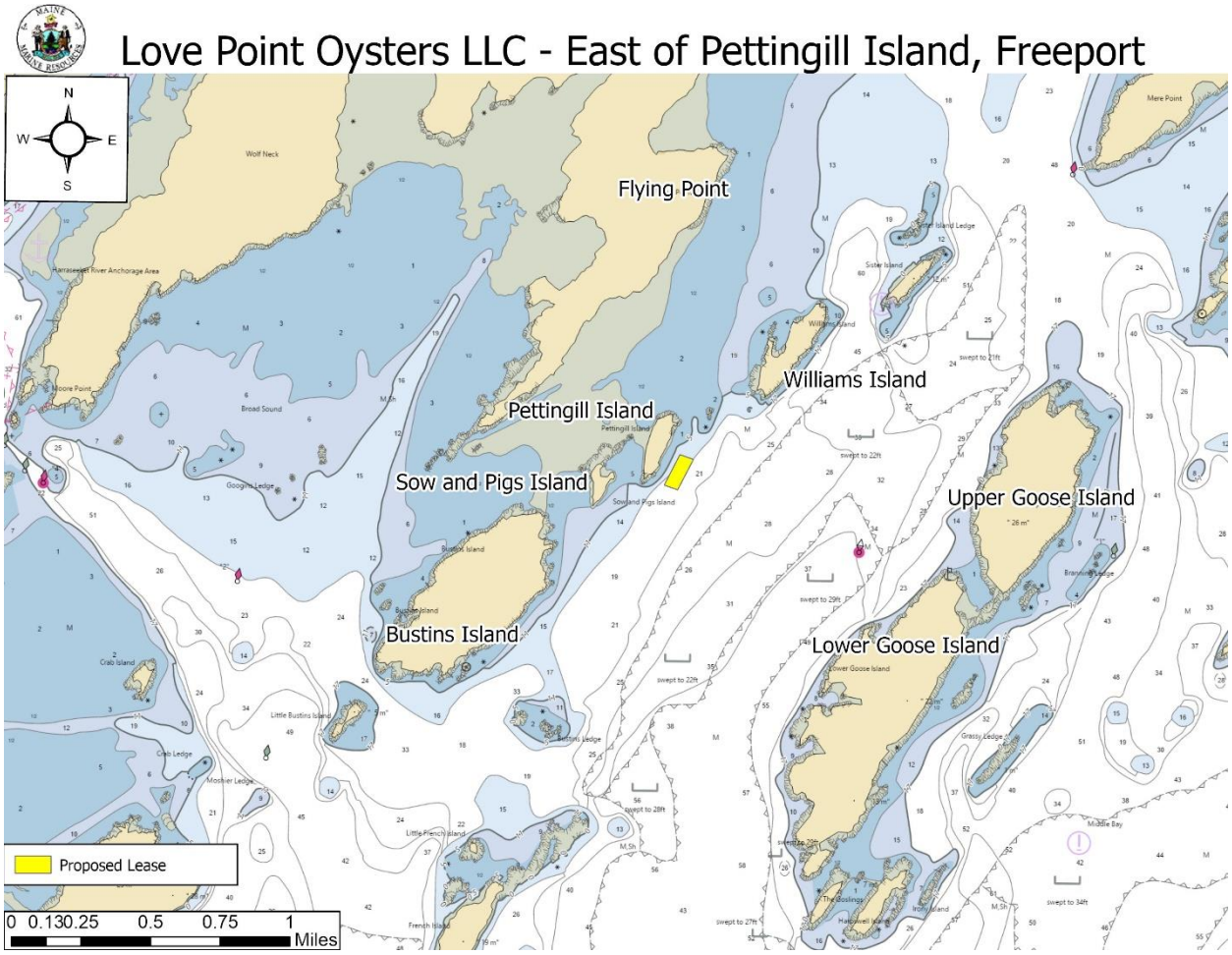

Figure 1. Vicinity map.[1]

Location: East of Pettingill Island, Maquoit Bay, Freeport, Cumberland County, Maine

Purpose: Experimental lease for suspended culture of American/Eastern oysters (*Crassostrea virginica*)

Site Review: Geoffrey Shook, Chloe Kilborn
Report Preparation: Katie von Hohenleiten, Geoffrey Shook, 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, Love Point Oysters LLC, is requesting 3.99 acres east of Pettingill Island in Maquoit Bay for the suspended culture of American/Eastern Oysters (Figure 1). Gear will remain onsite during winter months but will be sunk to the ocean floor. Gear tending activity is estimated to occur two to four times per week in the summer, and once to twice per week in the winter.[2]

General Characteristics

On October 4, 2023, Maine Department of Marine Resources (MDMR) scientists assessed the proposed lease site. MDMR scientists arrived on site at approximately 11:51 AM. The eastern shore of Pettingill Island is uninhabited in the vicinity of the proposal.[3] The island consists of a rocky coastline leading to forested uplands (Figure 2).

Depth

MDMR scientists began collecting depths at the proposed site during a rising tide at approximately 11:52 AM. Measured depths at corners of the proposed lease site ranged from 16.2 to 26.4 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 12.3 to 22.5 feet (Table 1).

Table 1. Predicted tidal heights in South Freeport, Maine.[4]

Date	Time	Height (ft)
2023/10/04	3:30 AM	9.2 H
2023/10/04	9:23 AM	0.8 L
2023/10/04	3:41 PM	9.9 H
2023/10/04	10:07 PM	0.0 L

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] Application page 6
[3] According to aerial Imagery taken in 2019 and 2022.
[4] https://www.usharbors.com/harbor/maine/south-freeport-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) – 3.99 Acres

Corner	Latitude	Longitude	
N	43.807433°	-70.056619°	then 271.36 feet at 109° True to
E	43.807192°	-70.055647°	then 650.14 feet at 207° True to
S	43.805600°	-70.056758°	then 268.63 feet at 289° True to
W	43.805836°	-70.057722°	then 650.96 feet at 027° True to N

Table 3. Approximate distances from proposed lease corners to surrounding features (Figure 3).

Feature	Distance
S corner to Lower Goose Island at MLW	~4,353.9’ to the east
W corner to Pettingill Island shoreline at MLW	~267.9' to the west
N corner to Pettingill Island shoreline at MLW	~275.6' to the west
E corner to Williams Island shoreline at MLW	~1,667.3’ to the northeast

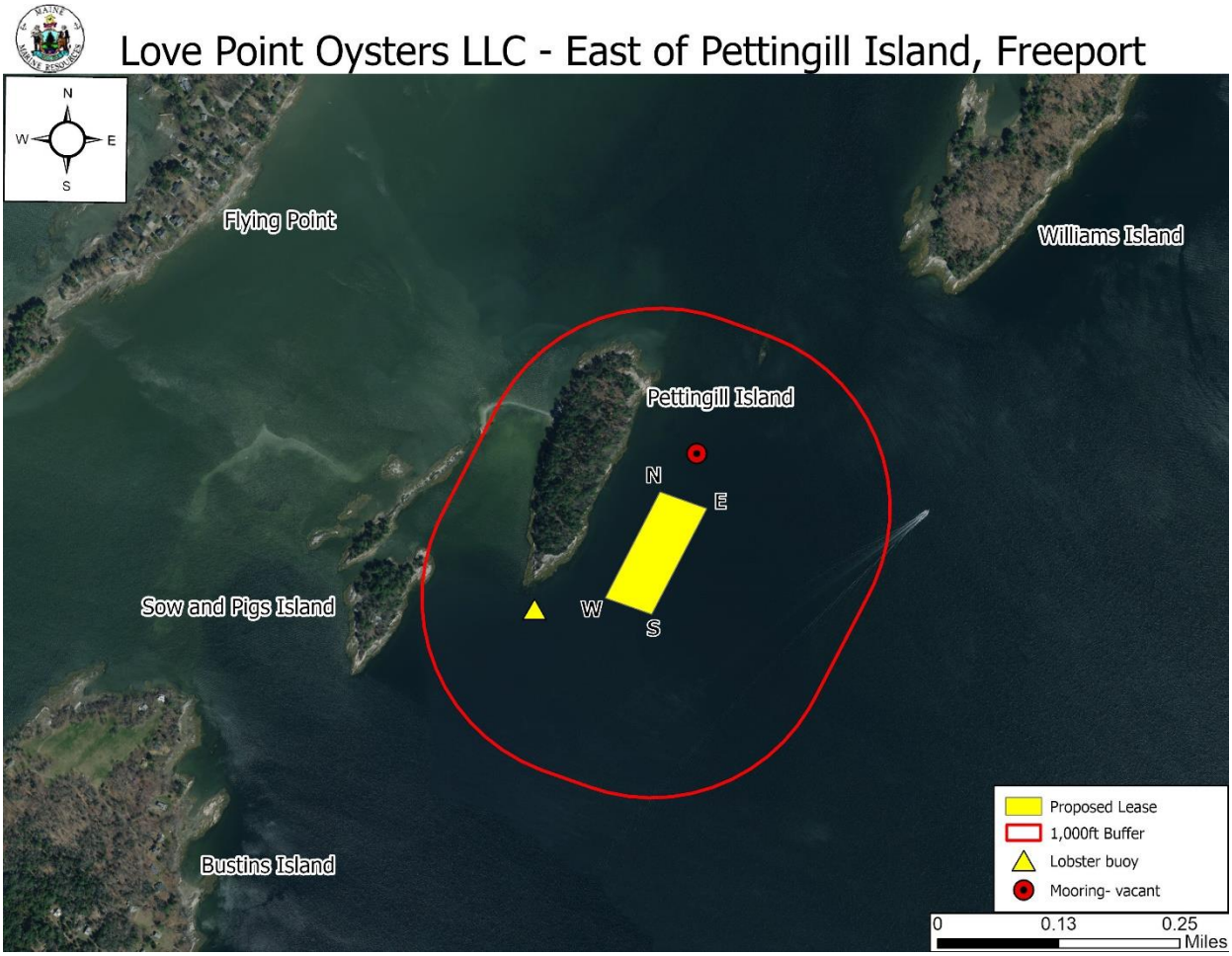

Figure 2. Proposed lease area with site visit observations.

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 on October 4, 2023, MDMR scientists observed one vacant mooring located approximately 263 feet to the north of the proposal. MDMR did not observe any docks, houses, or other moorings in the vicinity of the proposal.

(2) Navigation

The proposal is located approximately 267.9 feet to the east of Pettingill Island at MLW. There is approximately 4,353.9 feet of navigable water between the proposal and the western shore of Lower Goose Island at MLW. The charted main navigational channel is located approximately 890.7 feet to the east of the proposal (Figure 3).

During the site visit, a small skiff was observed transiting to the east of the proposal.

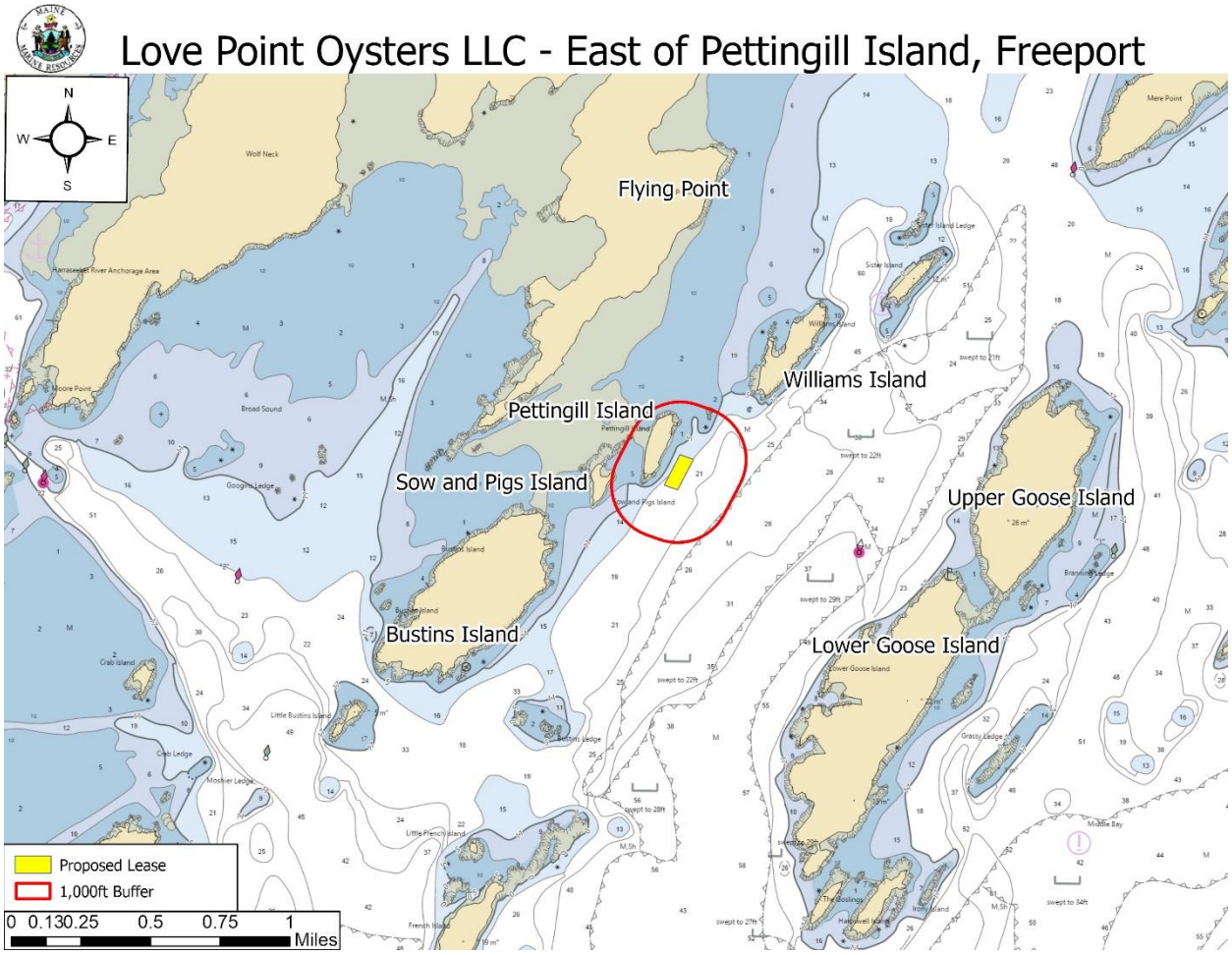

Figure 3. Navigational channels in the vicinity of the proposed lease area.

(3) Fishing and Other Uses

During the site visit, MDMR documented one lobster buoy approximately 389.5 feet southwest of the proposal. Overall, MDMR observed sparse fishing in the vicinity of the proposal, but did observe light lobster fishing activity near the southern end of Williams Island.

During the site visit, seven tandem kayaks were observed paddling to the north of the proposal near the southern end of Williams Island.

(4) Other Aquaculture Uses

There are four limited purpose aquaculture (LPA) licenses within 1,000 feet of the proposed lease site. Three LPAs are located within the proposal boundaries (CBAR422, CBAR522, BHAM722) and one is located 36 feet to the east of the proposal (BHAM822). The LPAs are licensed to Cameron Barner and Ben Hamilton, both of which are applications of this proposal

under consideration.[5] All four LPAs will be relinquished if this proposal is granted.[6] There are no aquaculture leases or additional LPA sites within 1,000 feet of the proposed lease site (Figure 4).

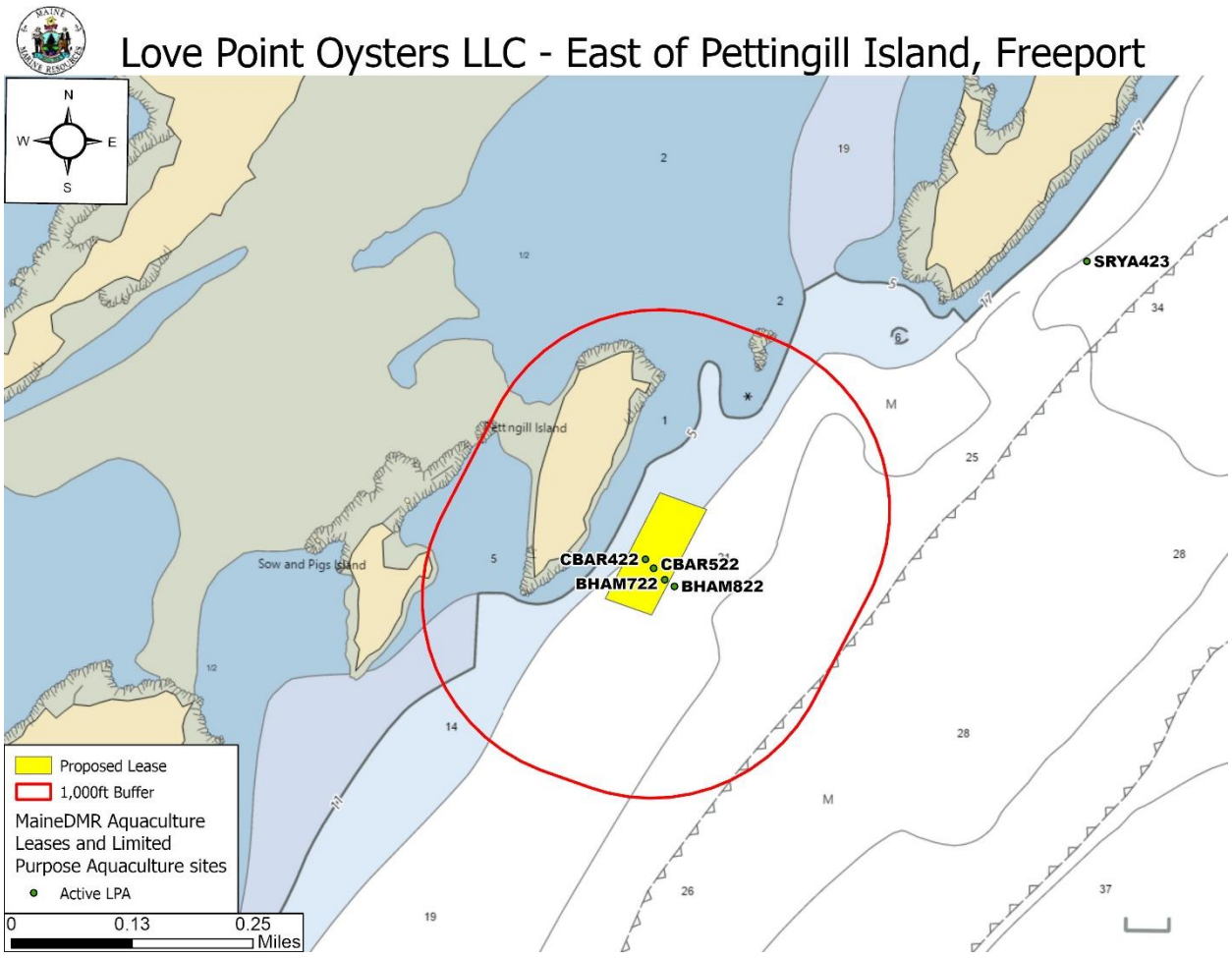

Figure 4. LPA licenses in the vicinity of the proposed lease area.

(5) Existing System Support

Epibenthic Flora and Fauna

On October 4, 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.

[5] Application page 23
[6] Application page 10

Table 4. Species observed on underwater camera footage.

Species Observed	Abundance
Rockweed (*Ascophyllum nodosum*)	Occasional
Crab (*Cancer* spp)	Occasional
Mud snail (*Ilyanassa* sp.)	Common
Hermit Crab (*Pagurus* spp.)	Common
Horseshoe crab (*Limulus polyphemus*)	Rare

Eelgrass (*Zostera marina*)

Records of eelgrass collected by the Maine Department of Environmental Protection (MDEP) in 2022 indicate no mapped eelgrass presence in the vicinity of the proposal. The nearest mapped eelgrass is approximately 2,147.5 feet southwest of the proposal (Figure 5).[7] No eelgrass was observed on underwater camera footage within the proposal boundaries during MDMR's site assessment.

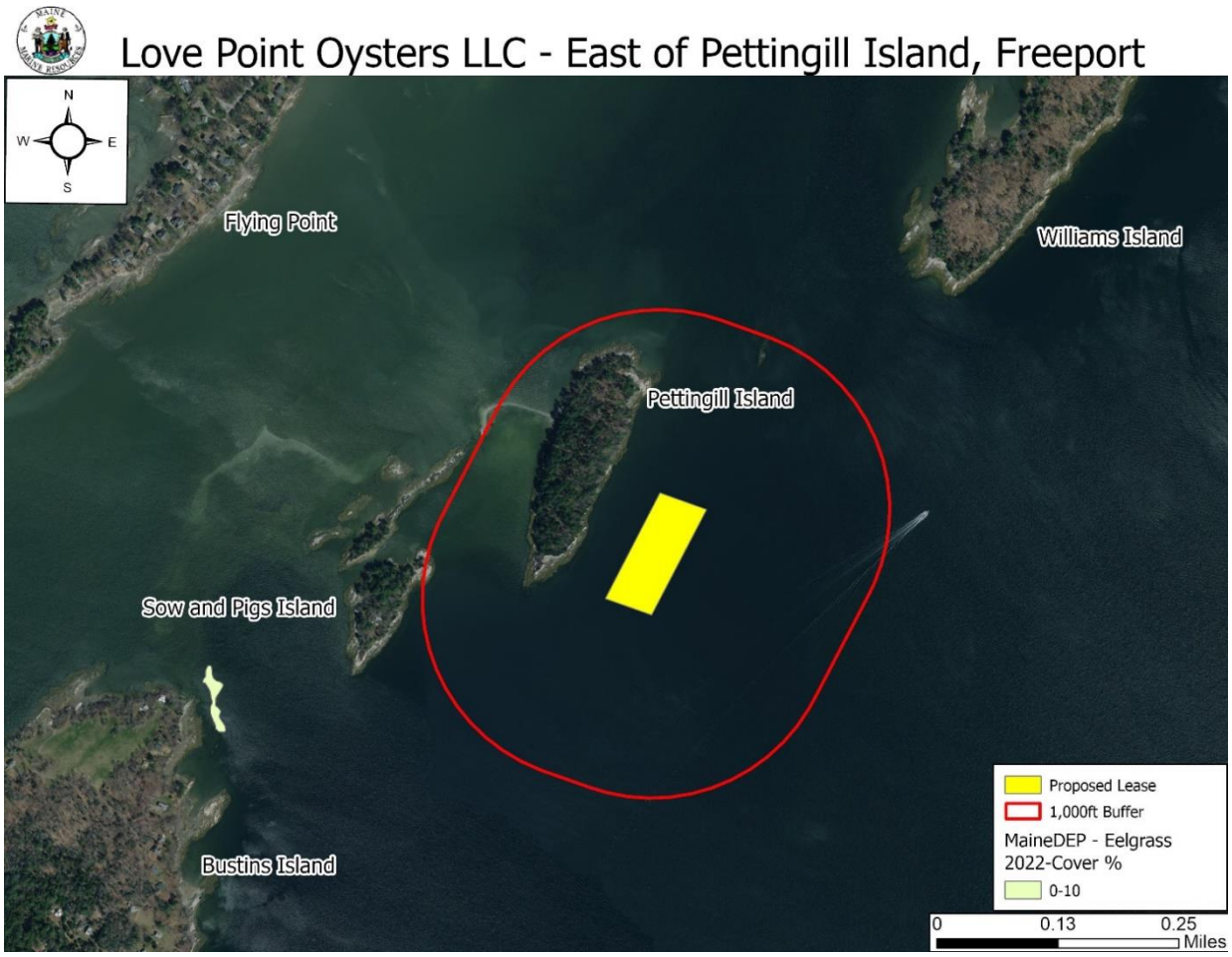

Figure 5. Mapped eelgrass (*Z. marina*) in the vicinity of the proposed lease area.

[7] 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 approximately 680 feet to the southeast of mapped Tidal Waterfowl and Wading Bird Habitat (TWWH). Data collected by the United States Fish and Wildlife Service in 2023 by aerial nest survey shows two bald eagle nesting sites in the vicinity of the proposal. The nests are located approximately 698 and 1,150 feet west of the proposal (Figure 6). The proposal is located outside of the recommended 660 foot buffer zone. On August 10, 2023, a Resource Biologist with MDIFW responded by email to a "Request for Agency Review and Comment" stating minimal impacts to wildlife are anticipated for this project.[8]

During the site assessment, MDMR scientists observed double-crested cormorants (*Nannopterum auritum*) and American black ducks (*Anas rubripes*) in the general vicinity of the proposal.

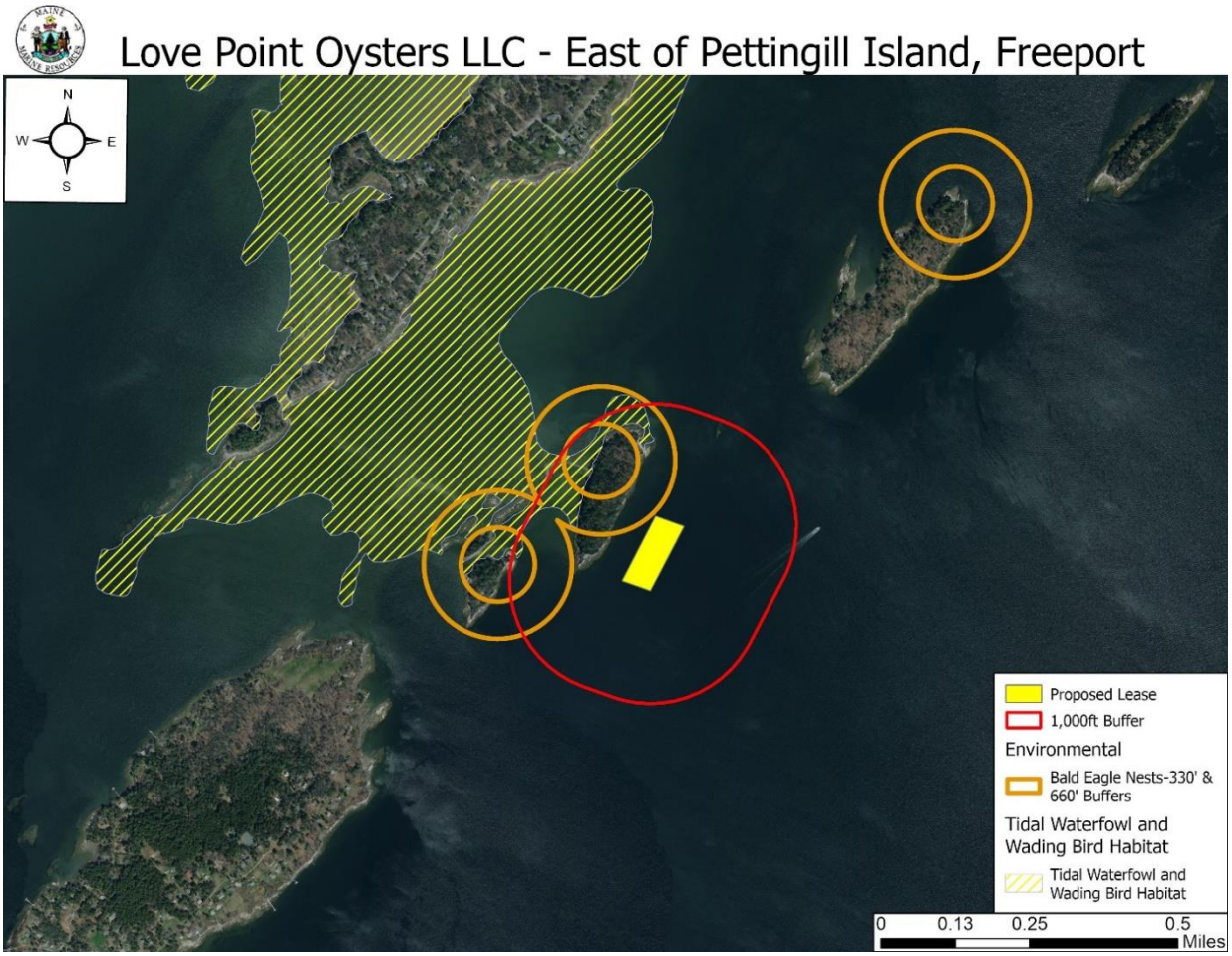

Figure 6. Mapped bald eagle nests and TWWH in the vicinity of the proposed lease. [9]

[8] Email correspondence between MDIFW and MDMR

[9] 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, or docking facility owned by federal, state, or municipal governments.

(7) Water Quality

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