

Figure 1. Vicinity map.¹

Location: East of Upper Dodge Cove, Damariscotta River, Newcastle, Lincoln County, Maine

Purpose: Standard lease for suspended culture of American/Eastern Oysters (*Crassostrea virginica*)

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Report Preparation: Meryl Grady and 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, Norumbega Oyster Inc., is requesting a 6.01² acre standard lease east of Upper Dodge Cove in the Damariscotta River, Newcastle for the suspended culture of American/eastern oysters (*Crassostrea virginica*). The applicant currently operates the experimental lease DAM DUx within the footprint of this standard lease proposal (Figure 4). This proposal is larger than the existing experimental lease DAM DUx. The applicant is proposing a westerly expansion of approximately 15 feet and an easterly expansion of approximately 100 feet from 3.93³ acres to 6.01 acres.

General Characteristics

On August 9, 2023, Maine Department of Marine Resources (MDMR) scientists assessed the proposed lease site. MDMR scientists arrived on site at approximately 10:27 AM. The proposal is situated in subtidal waters of the Damariscotta River east of Upper Dodge Cove. The western shoreline consists of mature, undeveloped forest with occasional rocky beaches owned by the State of Maine. The eastern shoreline is rocky with forested uplands and scattered residential homes.

Depth

On August 9, 2023, MDMR scientists began collecting depths at the proposed site at approximately 10:30 AM. The tide was ebbing with the next low tide predicted to occur at 12:32 PM (Table 1). Depths were collected at proposal corners and determined to be between 9.7 and 31.4 feet. Correcting for tidal variation derives water depths to be approximately 7.1 to 28.8 feet at mean low water (MLW, 0.0 feet) and 17.1 to 38.8 feet at the next high tide (Table 1).

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

Date	Time	Height (ft)
2023/08/09	12:20 AM	0.3 L
2023/08/09	6:25 AM	9.0 H
2023/08/09	12:32 PM	1.0 L
2023/08/09	6:46 PM	10.0 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 Applicant originally requested 6.0 acres. MDMR calculations indicate the area is 6.01 acres.

³ Experimental lease DAM DUx decision history page 1

⁴ <https://www.usharbors.com/harbor/maine/newcastle-me/tides/?tide=2023-08#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, digital orthophotography provided by the Maine Office of GIS, and the application coordinates (Table 3, Figure 2).

Application Coordinates (WGS84) – 6.01 Acres

<u>Corner</u>	<u>Latitude</u>	<u>Longitude</u>	
NW	43.992992°	-69.551772°	then 307.8 feet at 114° True to
NE	43.992650°	-69.550703°	then 818.1 feet at 201° True to
SE	43.990556°	-69.551819°	then 330.1 feet at 294° True to
SW	43.990903°	-69.552978°	then 824.9 feet at 022° True to NW

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

Feature	Distance
NW corner to Upper Dodge Cove at MLW	~131 feet to the west
NE corner to eastern shoreline of Damariscotta River at MLW	~1,004 feet to the southeast
SE corner to eastern shoreline of Damariscotta River at MLW	~972 feet to the east
SW corner to Upper Dodge Cove at MLW	~161 feet to the west



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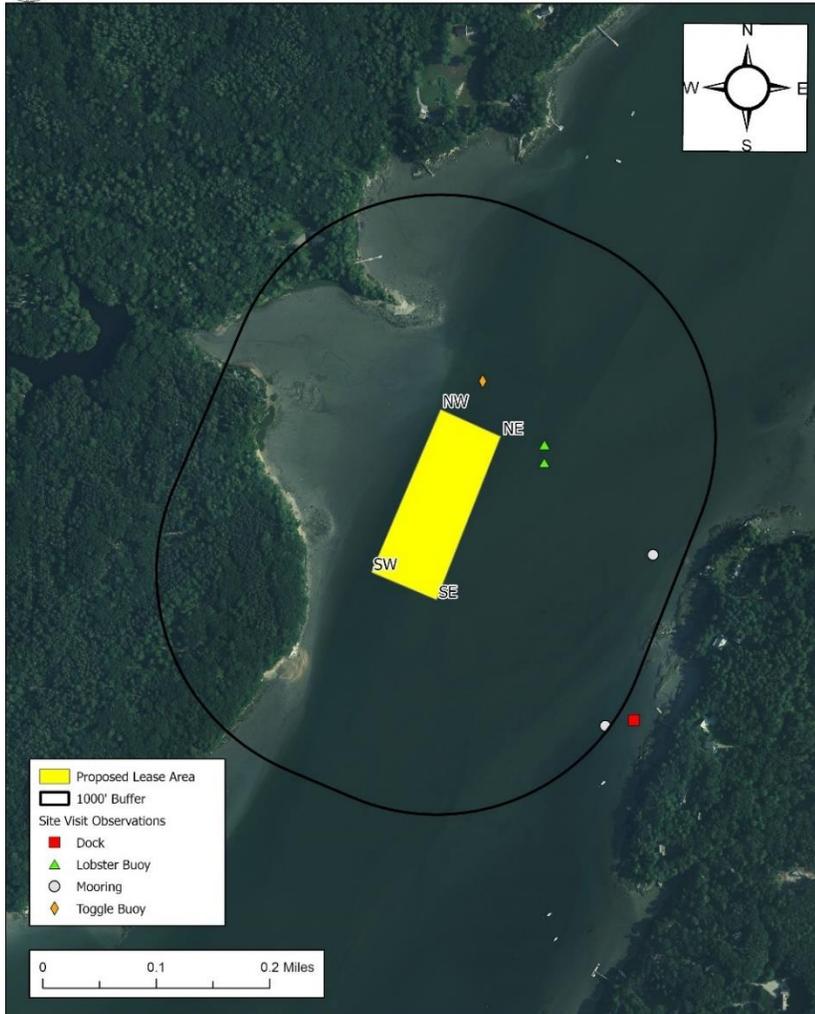


Figure 2. Proposed lease area with site visit observations.

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 on August 9, 2023, MDMR observed one dock and two moorings located east of the proposal. The dock had three kayaks and a small powerboat tied up to it. The dock is approximately 1,075 feet southeast of the SE corner of the proposal. MDMR observed a vacant mooring near the dock at the time of the site visit. The vacant mooring is 980 feet southeast of the proposal. The second observed mooring is 861 feet east of the proposal. At the time of the site visit, there was a commercial fishing vessel moored to it (Figure 2).



A Harbormaster Questionnaire was completed by the local harbormaster and submitted to the MDMR Aquaculture Division on September 14, 2022. The harbormaster indicated that the proposal should not impact riparian ingress and egress.

(2) Navigation

The proposal is located on the western edge of the navigational channel in the Damariscotta River. There is 860 feet of navigable water at all tidal stages from the eastern boundary of the proposal to the eastern edge of the navigational channel. During the site assessment, MDMR observed four powerboats traveling in the main river channel east of the proposal.

The harbormaster indicated in the Harbormaster Questionnaire that the proposal should not impact navigation in the area of the proposal.

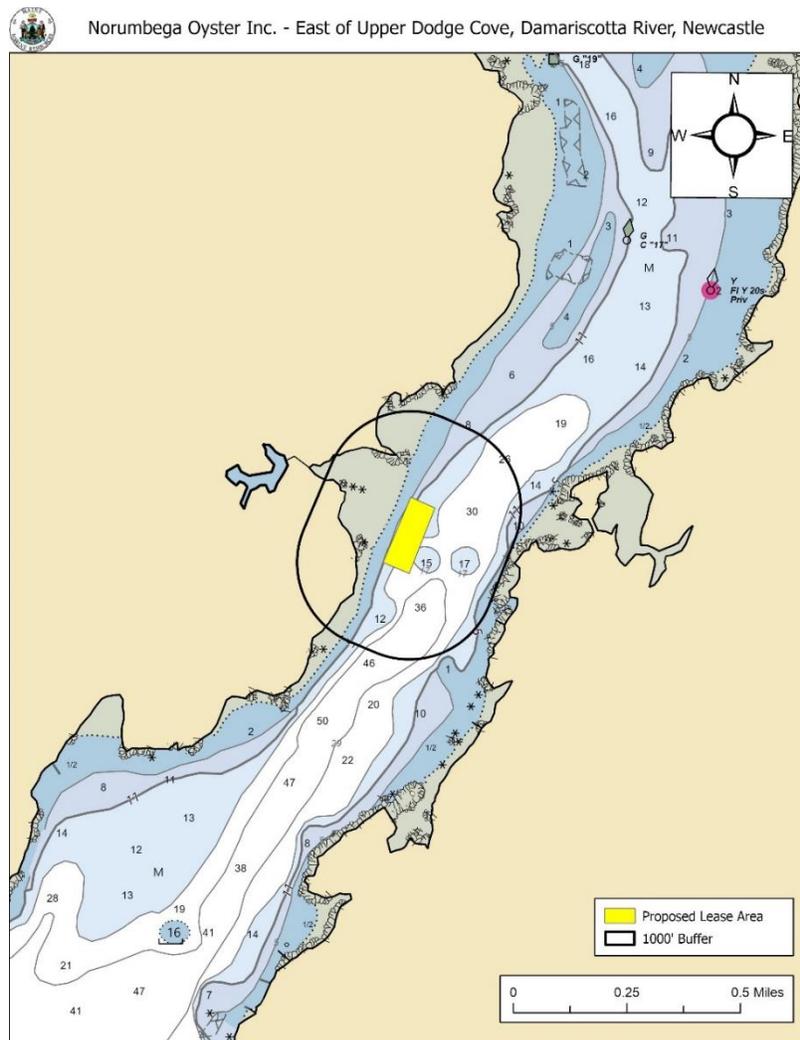


Figure 3. Navigational channels in the vicinity of the proposed lease area.



(3) Fishing and Other Uses

During MDMR's site assessment, two lobster buoys and a toggle buoy were observed in the vicinity of the proposal. The two lobster buoys were 206 feet and 235 feet east of the proposal. The toggle buoy was 200 feet north of the proposal (Figure 2). At the time of the site visit, there was a recreational fishing vessel observed in the vicinity of the proposal. The occupants were fishing with rod and reel and casting towards shore to the north and west of the proposal.

The harbormaster indicated in the Harbormaster Questionnaire that there is no commercial or recreational fishing within the area of the proposed lease.

(4) Other Aquaculture Uses

The applicant currently operates experimental lease DAM DUx within the boundaries of this proposal. There is one additional aquaculture lease within 1,000 feet of this proposal. DAM WP is issued to Glidden Point Oyster Company for bottom culture only and is approximately 740 feet east of the proposal. There are no limited purpose aquaculture (LPA) sites within 1,000 feet of the proposed lease site (Figure 4).

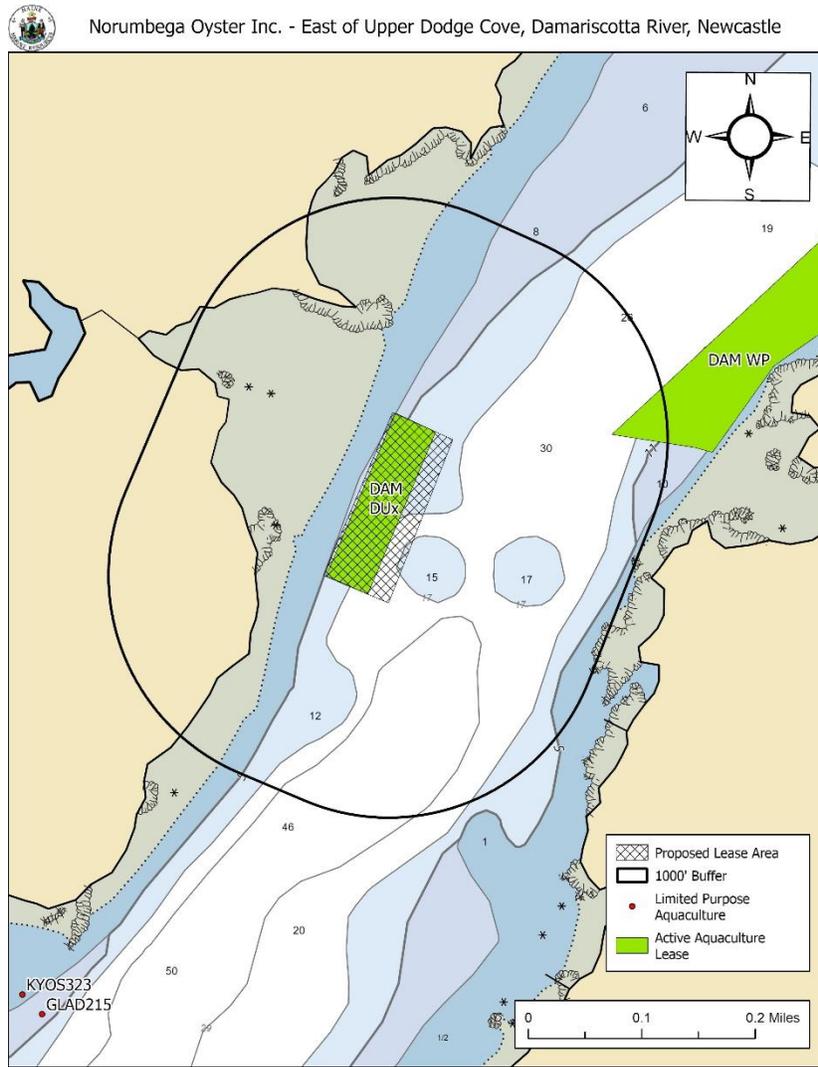


Figure 4. Aquaculture sites in the vicinity of the proposed lease area.

(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>)	Occasional



Eelgrass (*Zostera marina*)

Records of eelgrass collected by Maine Department of Environmental Protection (MDEP) in 2023 indicate no mapped eelgrass presence in the vicinity of the proposal. The nearest mapped eelgrass is four miles north in the Great Salt Bay (Figure 5).⁵ No eelgrass was observed within proposal boundaries during MDMR's site assessment.

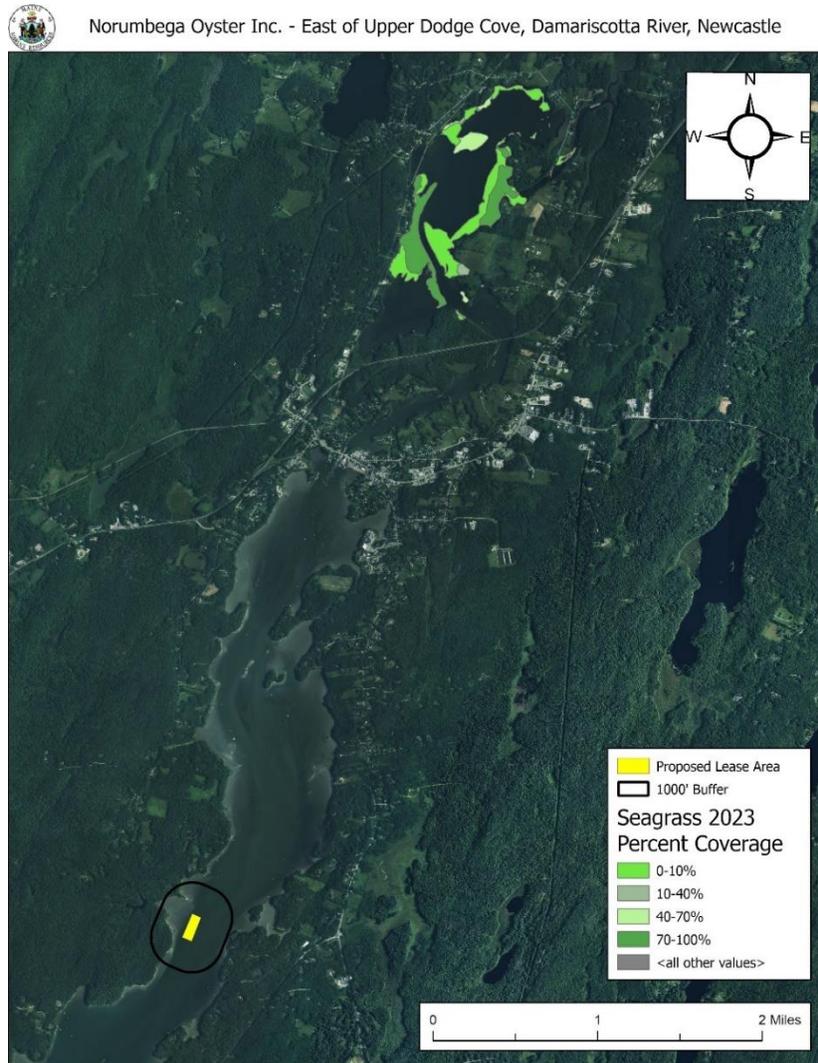


Figure 5. Mapped eelgrass (*Z. marina*) in the vicinity of the proposed lease area.

⁵ Data obtained from The Maine Office of GIS "GISVIEW.MEDEP.Seagrass2023". Widgeon grass was observed only in a tributary to the Great Salt Bay, upstream of a culvert that likely restricts tidal flow. 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 92 feet east of mapped Tidal Waterfowl and Wading Bird Habitat (Figure 6). Data collected by the United States Fish and Wildlife Service (USFWS) in 2022 by aerial nest survey shows the closest mapped bald eagle nesting site to be approximately 1.5 miles north of the proposal.

On September 12, 2022, a Wildlife Biologist with MDIFW responded by email to a “Request for Agency Review and Comment” stating that minimal impacts to wildlife are anticipated.⁶

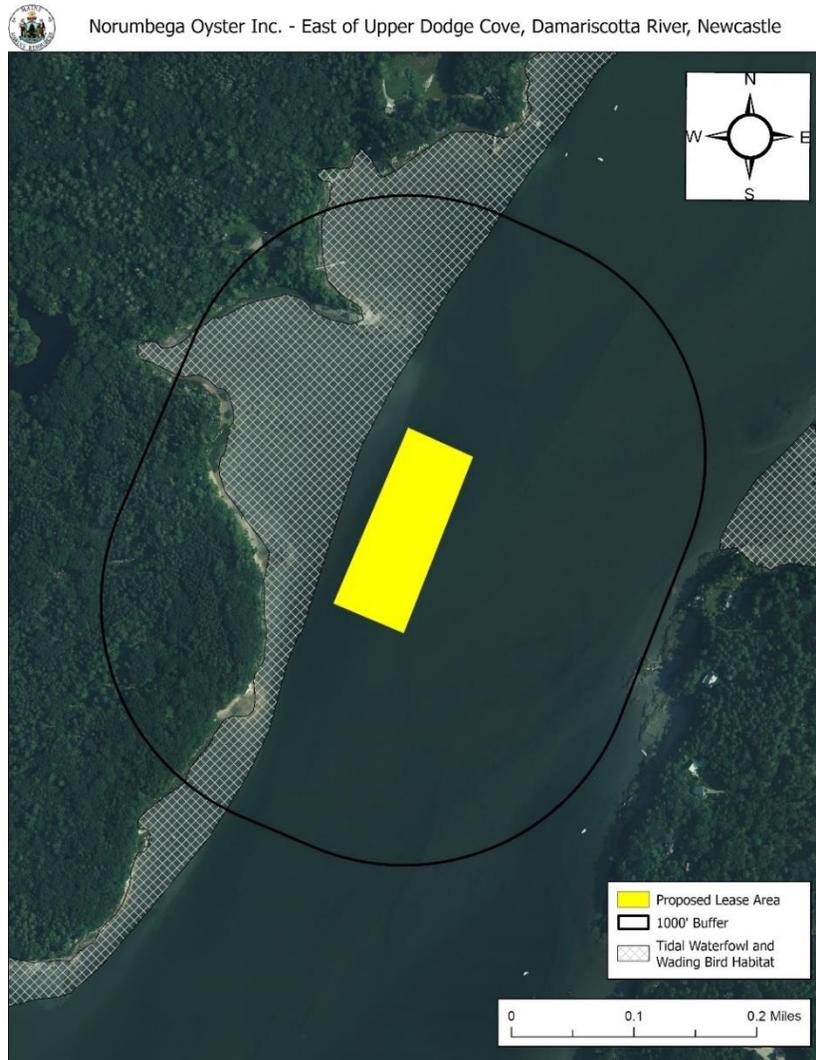


Figure 6. Mapped Tidal Waterfowl and Wading Bird Habitat.⁷

⁶ Email correspondence between MDIFW and MDMR

⁷ 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. The proposed lease is within 1,000 feet of Dodge Point Public Land (DPPL), which is conserved lands owned by the Maine Department of Agriculture, Conservation and Forestry (DACF). The land is managed by the Bureau of Parks and Lands within DACF. DPPL is 131 feet west of the proposal at MLW and 300 feet at MHW (Figure 7). A dock associated with DPPL is 3,730 feet south of the proposal. During the site visit, MDMR observed several people walking along the shoreline of DPPL.

The harbormaster indicated in the Harbormaster Questionnaire that the proposal should not affect any local, state, or federally owned beaches, parks, or docking facilities within 1,000 feet of the proposed area.



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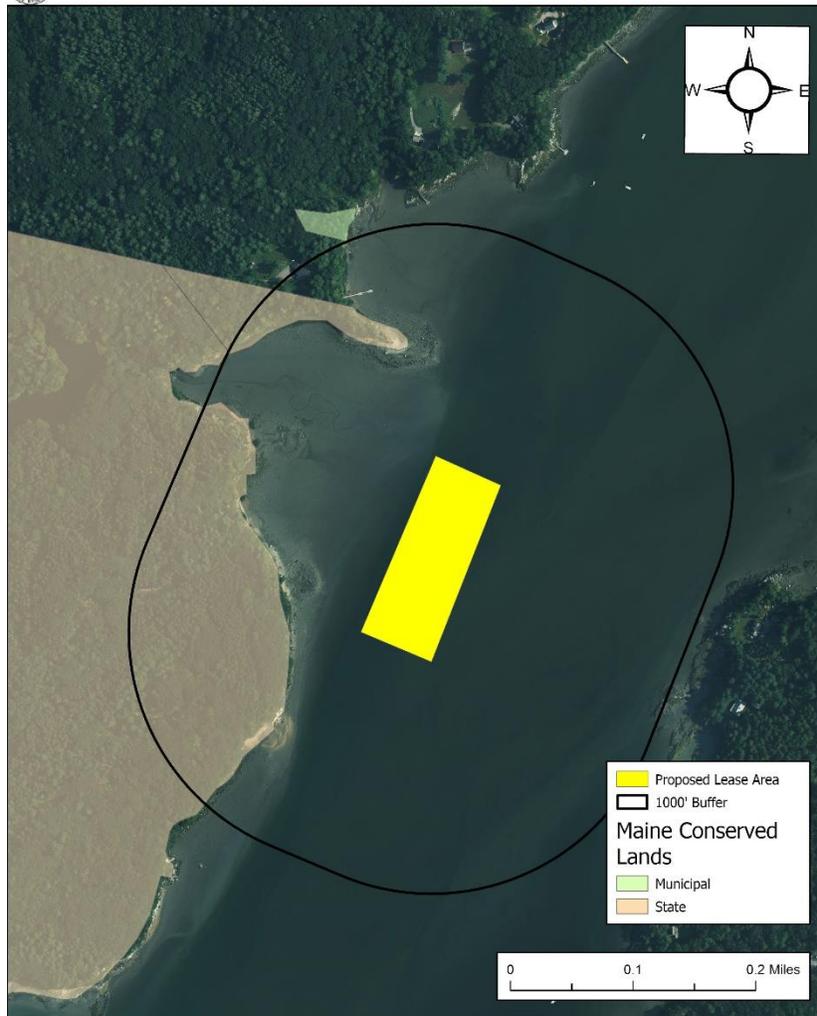


Figure 7. Public facilities near the proposed lease site.⁸

⁸ Data obtained from The Maine Office of GIS “GISVIEW.MECONSLANDS.Conserved_Lands”



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(7) Water Quality

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