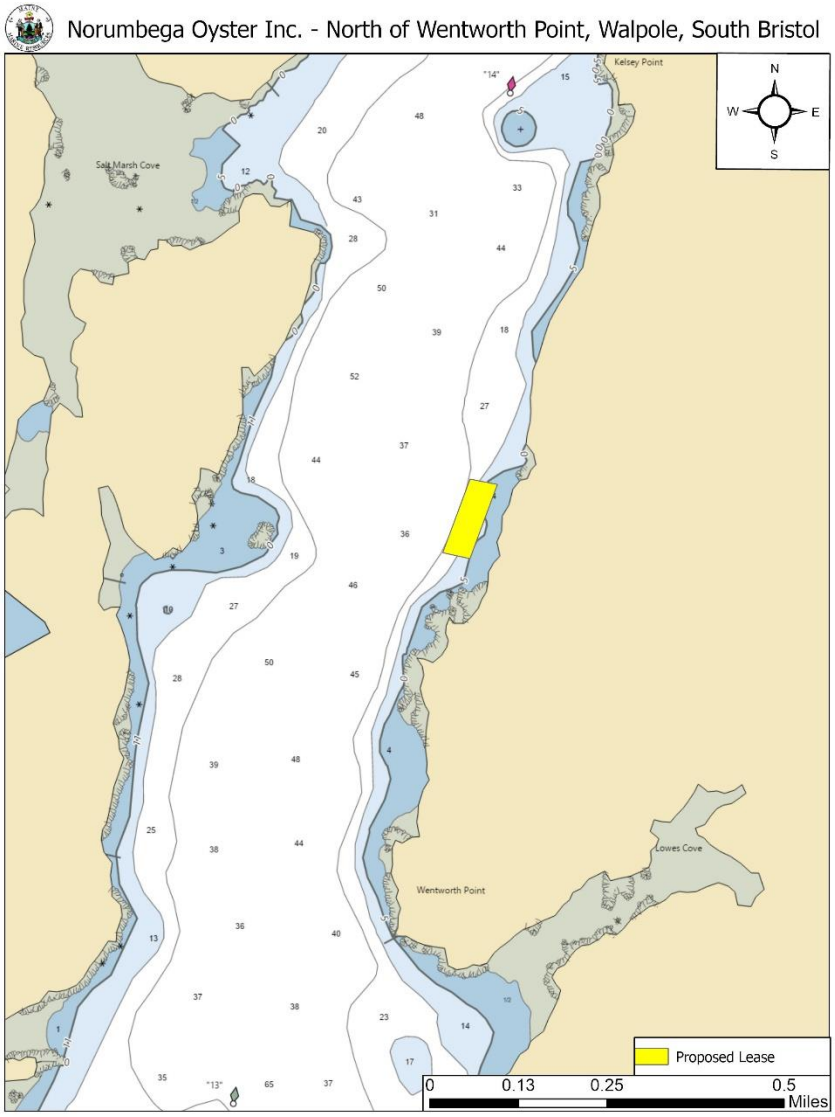

Figure 1. Vicinity map.[1]

Location: North of Wentworth Point, South Bristol, Damariscotta River, Lincoln County, Maine

Purpose: Experimental lease for suspended culture of American Oysters (*Crassostrea virginica*)

Site Review: Meryl Grady, Geoff Shook, Chloe Kilborn
Report Preparation: Katie von Hohenleiten, Geoff Shook, 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 geo-referenced aerial photographs provided by The Maine Office of GIS.

Application Overview

The applicant, Norumbega Oyster Inc, is requesting a 2.77[2] acre experimental lease north of Wentworth Point in the Damariscotta River for the suspended culture of American oysters. The proposed lease is located 50 feet south of an existing 3.95-acre experimental lease, DAM MIx, also held by Norumbega Oyster Inc. Gear will remain onsite all year; approximately 50% of the gear will be sunk to the seafloor between November through April.[3]

General Characteristics

On September 20, 2023, Maine Department of Marine Resources (MDMR) scientists assessed the proposed lease site. MDMR scientists arrived on site at approximately 10:44 AM. Both sides of the Damariscotta River shoreline, in the vicinity of the proposal, consist of rocky shore that extends into forested uplands.

Depth

MDMR scientists began collecting depths at the proposed site at approximately 10:44 AM. The tide was flooding with the next high tide predicted at 3:00 PM. Measured depths at corners of the proposed lease site ranged from 10.0 to 34.6 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 7.3 to 31.9 feet (Table 1).

Table 1. Predicted tidal heights in East Boothbay, Maine.[4]

Date	Time	Height (ft)
2023/09/20	2:50 AM	8.5 H
2023/09/20	8:53 AM	1.1 L
2023/09/20	3:00 PM	9.3 H
2023/09/20	9:27 PM	0.6 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] Applicant originally requested 2.78 acres. MDMR calculations indicate the area is 2.77 acres.
[3] Application page 5.
[4] https://www.usharbors.com/harbor/maine/east-boothbay-me/tides/?tide=2023-09#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) – 2.77 Acres

Corner	Latitude	Longitude	
NW	43.944528°	-69.578906°	then 207.7 feet at 101° True to
NE	43.944422°	-69.578131°	then 589.1 feet at 200° True to
SE	43.942903°	-69.578892°	then 207.8 feet at 281° True to
SW	43.943019°	-69.579664°	then 585.0 feet at 020° True to NW

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

Feature	Distance
NE corner to eastern shoreline at MLW	~115.2’ to the east
SE corner to eastern shoreline at MLW	~166.6’ to the east
SW corner to western shoreline at MLW	~1,726.6' to the west
NW corner to western shoreline at MLW	~1,709.2’ to the west

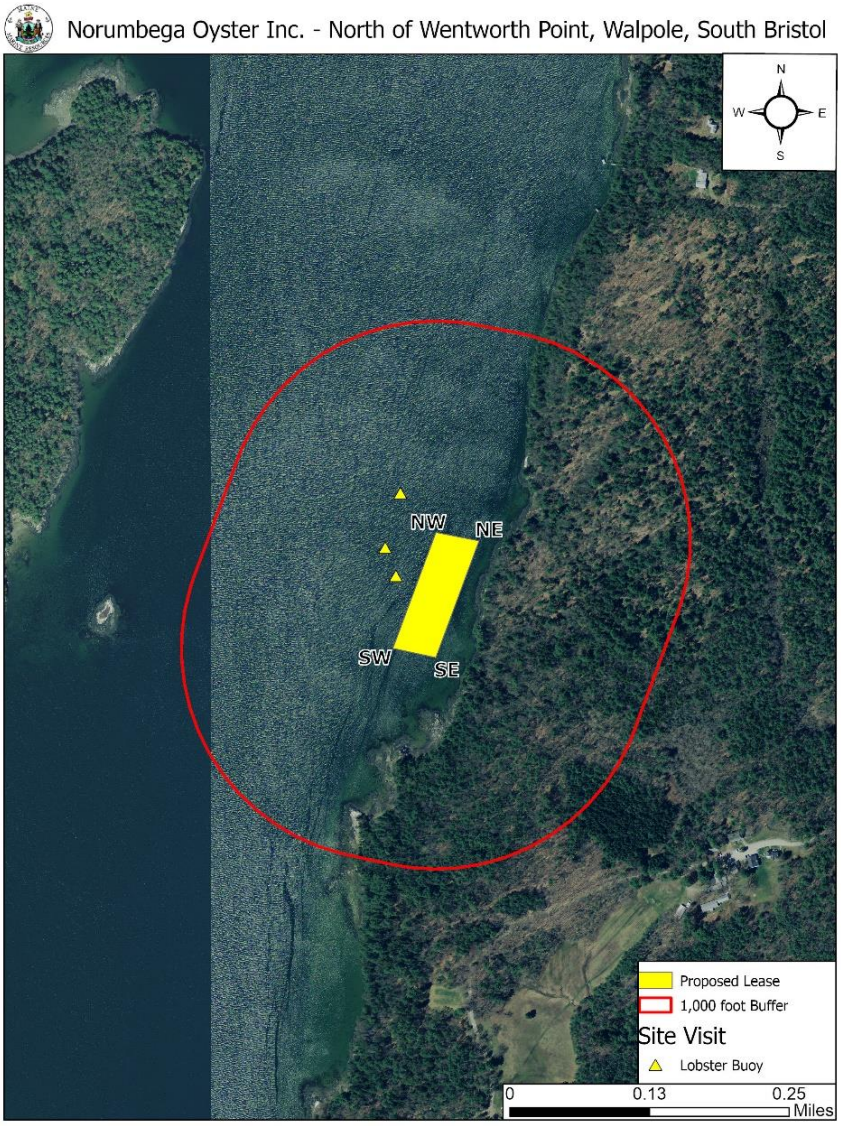

Figure 2. Proposed lease area with site visit observations.

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 assessment, MDMR scientists did not observe any docks or moorings in the vicinity of the proposal. A harbormaster questionnaire received by MDMR on April 4, 2023, states that the proposed site should not impede the riparian owner to the east of the proposal.

(2) Navigation

The proposal is situated along the eastern side of the Damariscotta River; approximately 70.8 feet east of the navigational channel. The harbormaster questionnaire states that the proposal should have no effect on navigation in the area.

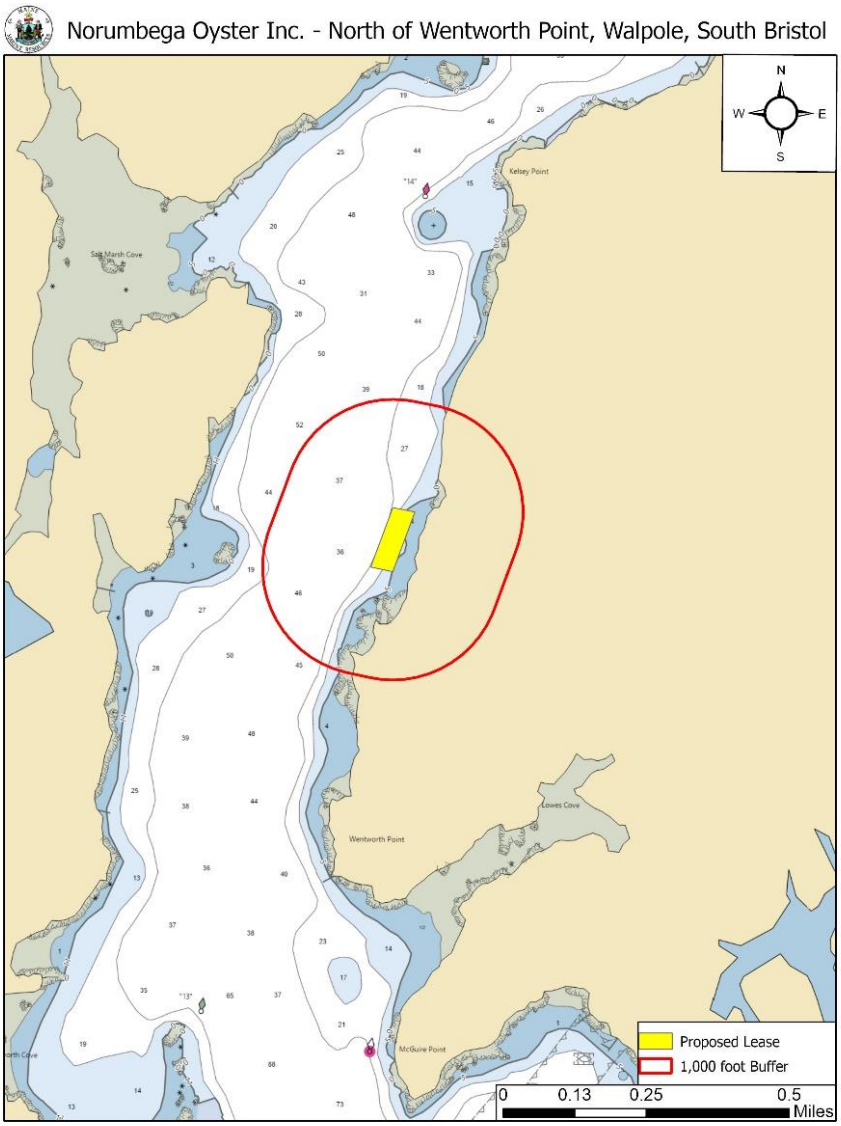

Figure 3. Navigational channels in the vicinity of the proposed lease area.

(3) Fishing and Other Uses

During the site visit, MDMR observed three lobster buoys within 1,000 feet of the proposal, with distances of 110, 202.3 and 253.7 feet from the proposed site (Figure 2). There was additional lobstering activity observed to the west of the proposal located in deeper water in the main river channel. The harbormaster questionnaire also notes there is lobstering to the west of the

proposed site. The harbormaster does not believe that the proposal should impact recreational fishing.

(4) Other Aquaculture Uses

The applicant holds an existing 3.95-acre experimental lease (DAM MIx) that is 50 feet north of the proposal. There are no Limited Purpose Aquaculture (LPA) licenses within 1,000 feet of the proposed lease site (Figure 4).

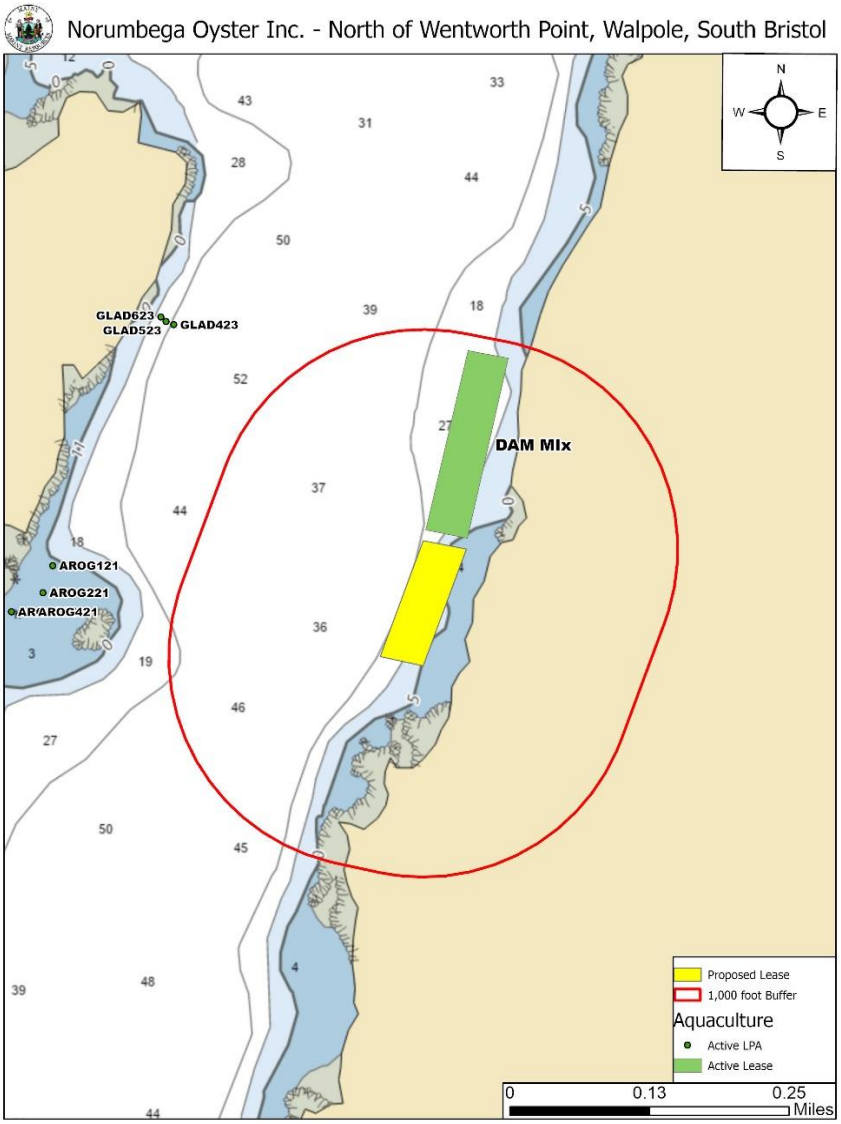

Figure 4. Aquaculture sites in the vicinity of the proposed lease area.

(5) Existing System Support

Epibenthic Flora and Fauna

On September 20, 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
hermit crabs (*Pagurus spp.*)	Common
shrimp (*Crangon septemspinosa*)	Common
green crab (*Carcinus maenas*)	Common

Eelgrass (*Zostera marina*)

Records of eelgrass collected by Maine Department of Environmental Protection (MDEP) in 2023 indicates no mapped eelgrass presence in the vicinity of the proposal (Figure 5).[5] No eelgrass was observed on underwater camera footage within the proposal boundaries during MDMR's site assessment.

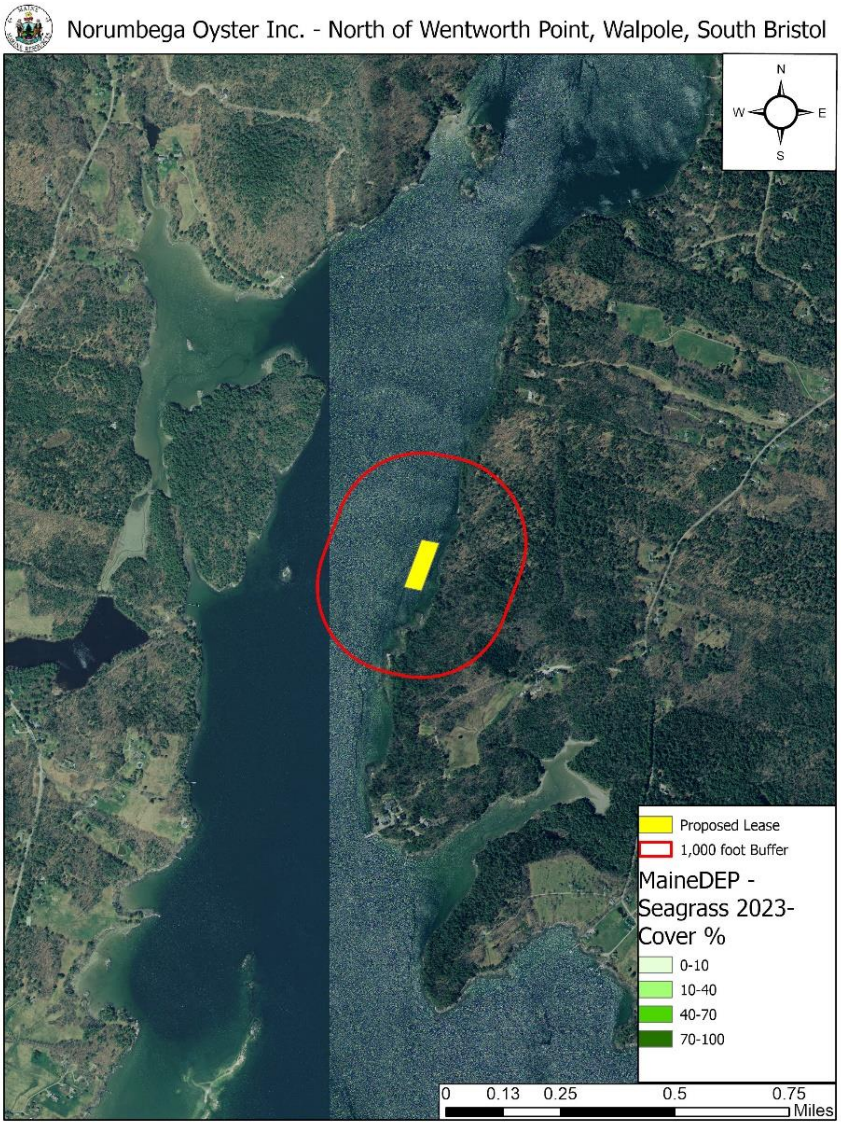

Figure 5. Mapped eelgrass (*Z. marina*) in the vicinity of the proposed lease area.

[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 not located near any 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 0.77 miles north of the proposal (Figure 6). During the site visit, MDMR scientists documented herring gulls (*Larus argentatus*) in the vicinity of the proposal.

On March 7, 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.[6]

[6] Email correspondence between MDIFW and MDMR

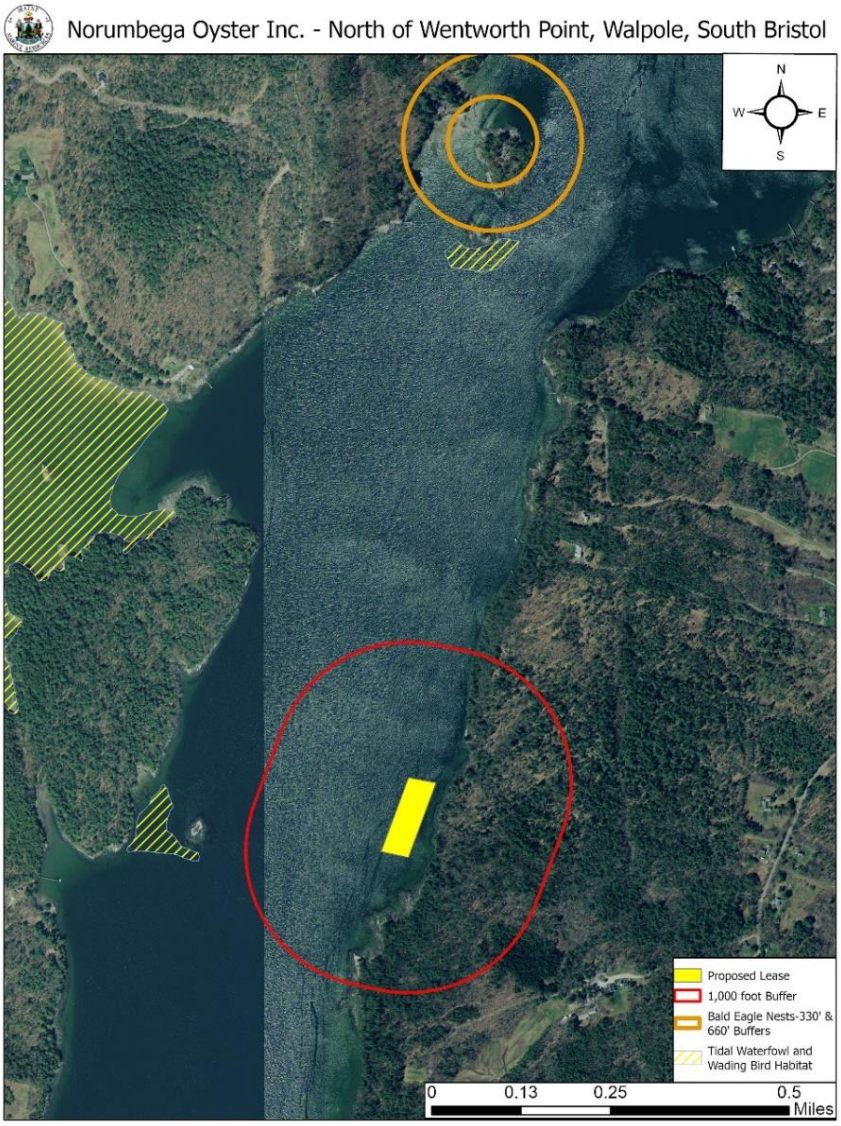

Figure 6. Mapped bald eagle nests and Tidal Waterfowl and Wading Bird Habitat. [7]

(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.

[7] Data obtained from USFWS "Bald_Eagle_Nests_-_Maine_2023" and MDIFW maintained SDE Feature Class "GISVIEW.MEIFW.Twwh"