



Maine Oyster INC, Sheepscoot River, Newcastle Maine

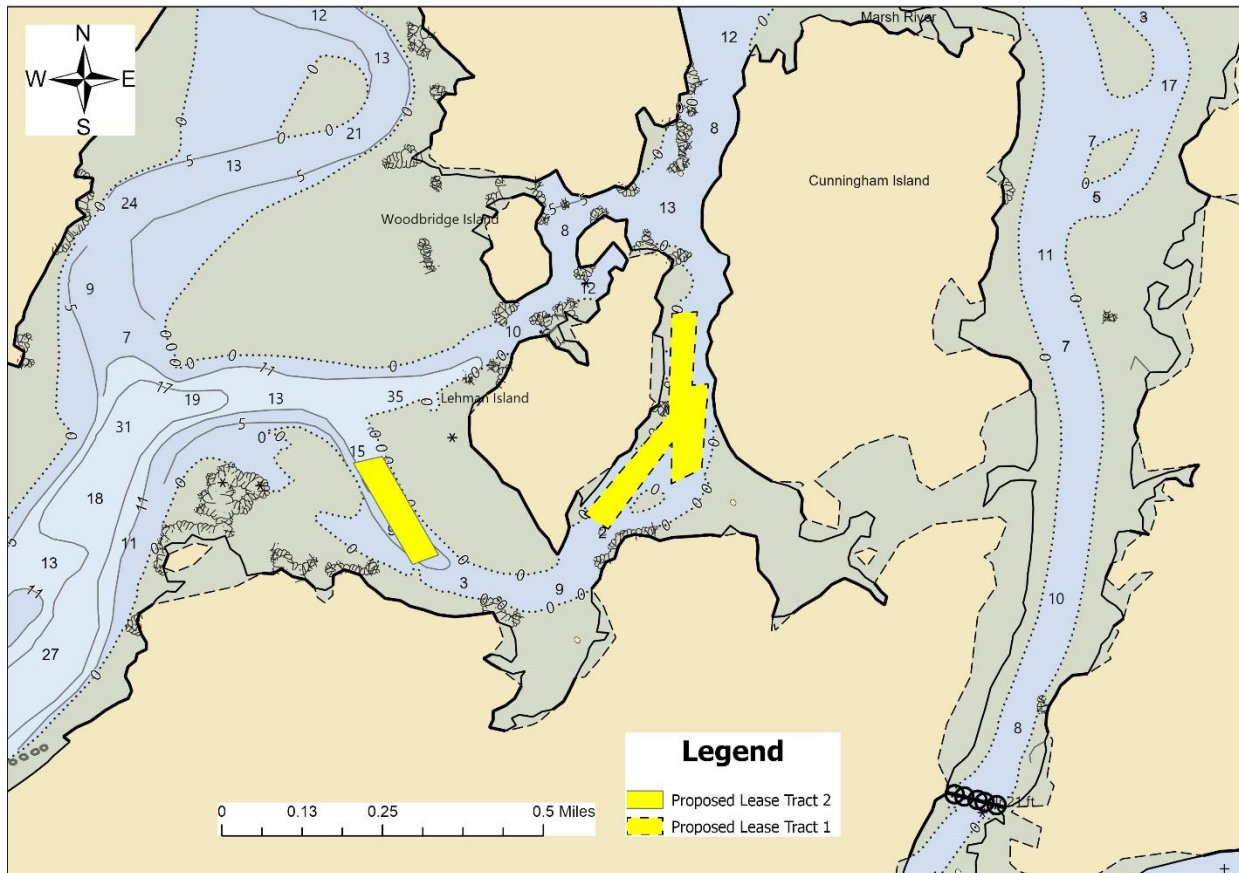


Figure 1. Vicinity map¹

Location: East of Lehman Island, Upper Sheepscoot River, Newcastle, Lincoln County, Maine

Purpose: Standard lease for bottom culture of American/eastern oysters (*Crassostrea virginica*)

Site Review: Flora Drury, Cheyanne Adams, and Marcy Nelson

Report Preparation: Molly Waters, Geoffrey 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, Maine Oyster, Inc., is requesting 12.18² acres in the Upper Sheepscot River for the bottom culture of American/eastern oysters (*Crassostrea virginica*). No gear will be used on the proposed site, except required site markers in accordance with Maine Department of Marine Resources (MDMR) and U.S. Coast Guard (USCG) regulations.

The applicant currently has one standard lease site, SHE LE, and three experimental lease sites, SHE LE2x, SHE LE3x, SHE LE4x, in the vicinity of this proposal and plans to relinquish all four lease sites should the proposal be granted.

General Characteristics

On September 16, 2021, MDMR scientists assessed the proposed lease site starting at approximately 11:30 AM. During the assessment of the lease proposal, a SCUBA transect was conducted by MDMR scientists. The proposal is comprised of two tracts in the subtidal waters of the Sheepscot River. Tract 1 is located between Lehman Island and Cunningham Island. The boundary of Tract 1 is closest to shore at corner C with 20 feet to Cunningham Island to the east and at corner H with 55 feet to Lehman Island to the west at mean low water (MLW) (Figure 2). MDMR scientists observed one building with a dock on the northeast side of Tract 1 on Cunningham Island. The surrounding area consists largely of mixed forest. Tract 2 is southwest of Lehman Island and is offset from the main channel of the river.

Depth

On September 16, 2021 MDMR scientists assessed the proposed site at approximately 11:30 AM. The tide was outgoing at the time depths were measured with the next low tide predicted at 2:06 PM. Depths of the proposed lease site ranged from 4.2 feet to 7.2 feet along the northwest and northeast corners of Tract 1, respectively. Correcting for tidal variations derives water depths at MLW to range from 1.1 feet to 4.1 feet and at the next high tide to range from 10.1 feet to 13.1 feet (Table 1).

Table 1. Tidal Heights Sheepscot River³ Tide Station 2476

Date	Time	Height (ft)
09/16/21	1:52 AM	0.2 L
09/16/21	8:10 AM	8.9 H
09/16/21	2:06 PM	1.0L
09/16/21	8:27 PM	10.3 H

² Applicant originally requested 10 acres. DMR calculations indicate Tract 1 is 8.60 acres and Tract 2 is 3.58 acres, totaling 12.18 acres.

³ <https://tides.net/maine/2476/?year=2021&month=09>



Bottom Characteristics

MDMR scientists observed the bottom characteristics of both tracts via SCUBA on September 16, 2021. 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 soft mud, and gravel (Image 1).

Table 2. Bottom characteristics of the proposed site.

Substrate Origin	Substrate Class	Substrate Subclass	Substrate Group	CMECS Code
Geologic Substrate	Unconsolidated Mineral Substrate	Fine Unconsolidated Substrate	Mud	1.2.2.5
Geologic Substrate	Unconsolidated Mineral Substrate	Coarse Unconsolidated Substrate	Muddy Sandy Gravel	1.2.1.2.2



Image 1. Bottom composition of 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 (Tables 3a, 3b and 4).

Table 3a. Application Coordinates for Tract 1.

Tract 1 – 8.60 Acres			
Corner	Latitude	Longitude	Position
A	44.02733° N	-69.61421° W	Then 602 feet at 183° true to
B	44.02568° N	-69.61433° W	Then 97 feet at 89° true to
C	44.02572° N	-69.61396° W	Then 699 feet at 183° true to
D	44.02380° N	-69.61411° W	Then 217 feet at 236° true to
E	44.02347° N	-69.61480° W	Then 334 feet at 1° true to
F	44.02438° N	-69.61478° W	Then 799 feet at 208° true to
G	44.02245° N	-69.61621° W	Then 186 feet at 312° true to
H	44.02278° N	-69.61675° W	Then 953 feet at 32° true to
I	44.02502° N	-69.61486° W	Then 833 feet at 2° true to
J	44.02730° N	-69.61478° W	Then 150 feet at 86° true to A

Table 3b. Application Coordinates for Tract 2.

Tract 2 – 3.58 Acres			
Corner	Latitude	Longitude	Position
A	44.02408° N	-69.62130° W	Then 874 feet at 158° true to
B	44.02187° N	-69.62003° W	Then 172 feet at 243° true to
C	44.02165° N	-69.62061° W	Then 903 feet at 338° true to
D	44.02393° N	-69.62195° W	Then 180 feet at 73° true to A

Table 4. Approximate distance from feature to shore at MLW.

Feature	Distance at MLW
Corner A to Lehman Island	~200ft to the west
Corner A to Mainland	~112ft to the east
Corner C to Mainland	~20ft to the east
Corner G to Mainland	~118ft to the east
Corner H to Lehman Island	~55ft to the northwest



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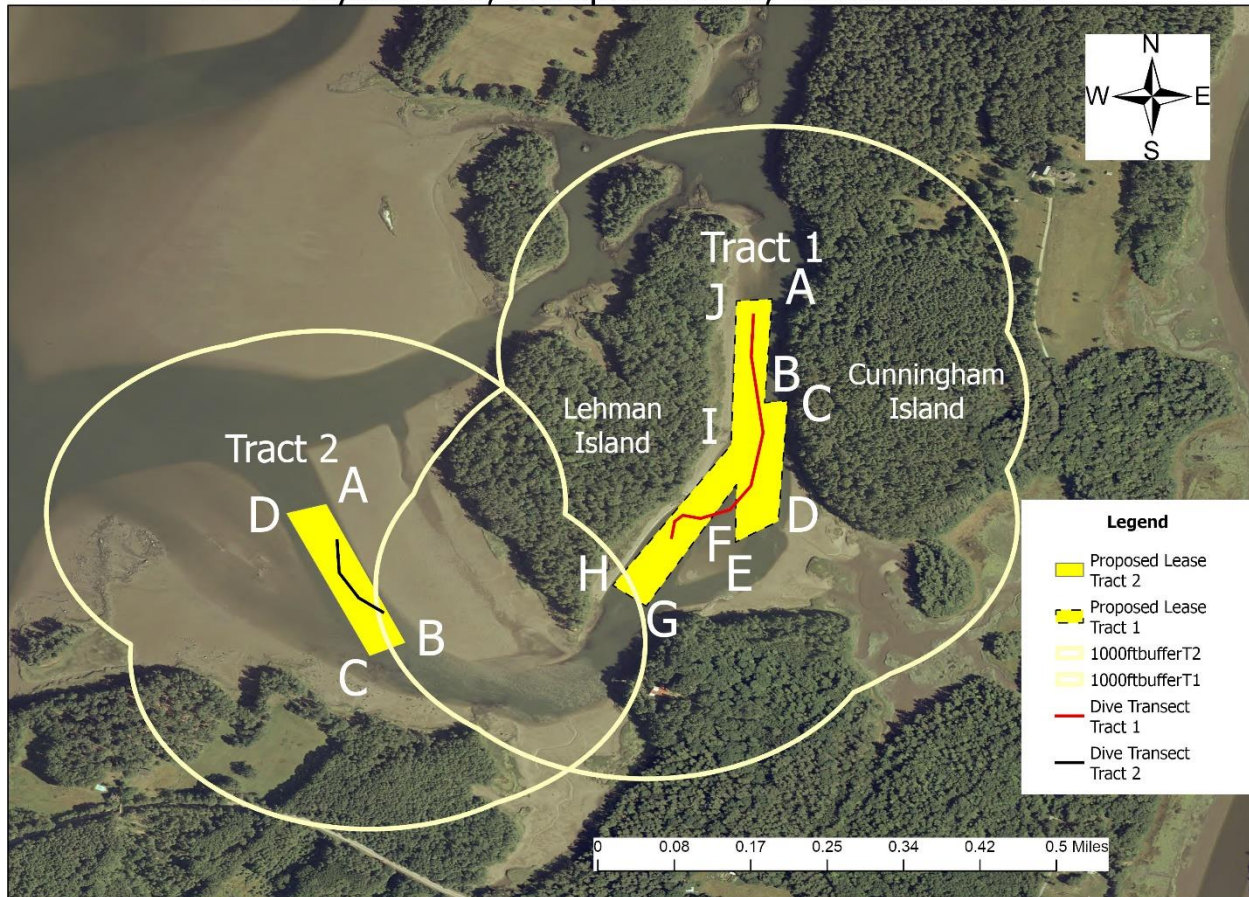


Figure 2. Approximate camera transects for the proposal.

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 conducted on September 16, 2021, MDMR scientists observed a dock and boathouse between the two tracts, as well as houses with two docks along the western shore of Lehman Island. Along the western shore of Cunningham Island, MDMR scientists observed and obtained coordinates for a dock (Figure 3). They also observed 3 orange buoys off Lehman Island and the mainland within proximity of Tract 1. There was one white buoy observed in the middle of Tract 1.



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Figure 3. Dock observed and documented during site assessment.

(2) Navigation

There was one boat observed during the site visit on September 16, 2021. The channel between Lehman Island and Cunningham Island, where Tract 1 is proposed, is approximately 170 feet to 200 feet wide at MLW. The channel between Lehman Island and the landmass to the south, where Tract 2 is proposed, is approximately 300 feet to 430 feet wide at MLW (Figure 4). The applicant does not intend to use gear on the proposed site, except the required site markers.



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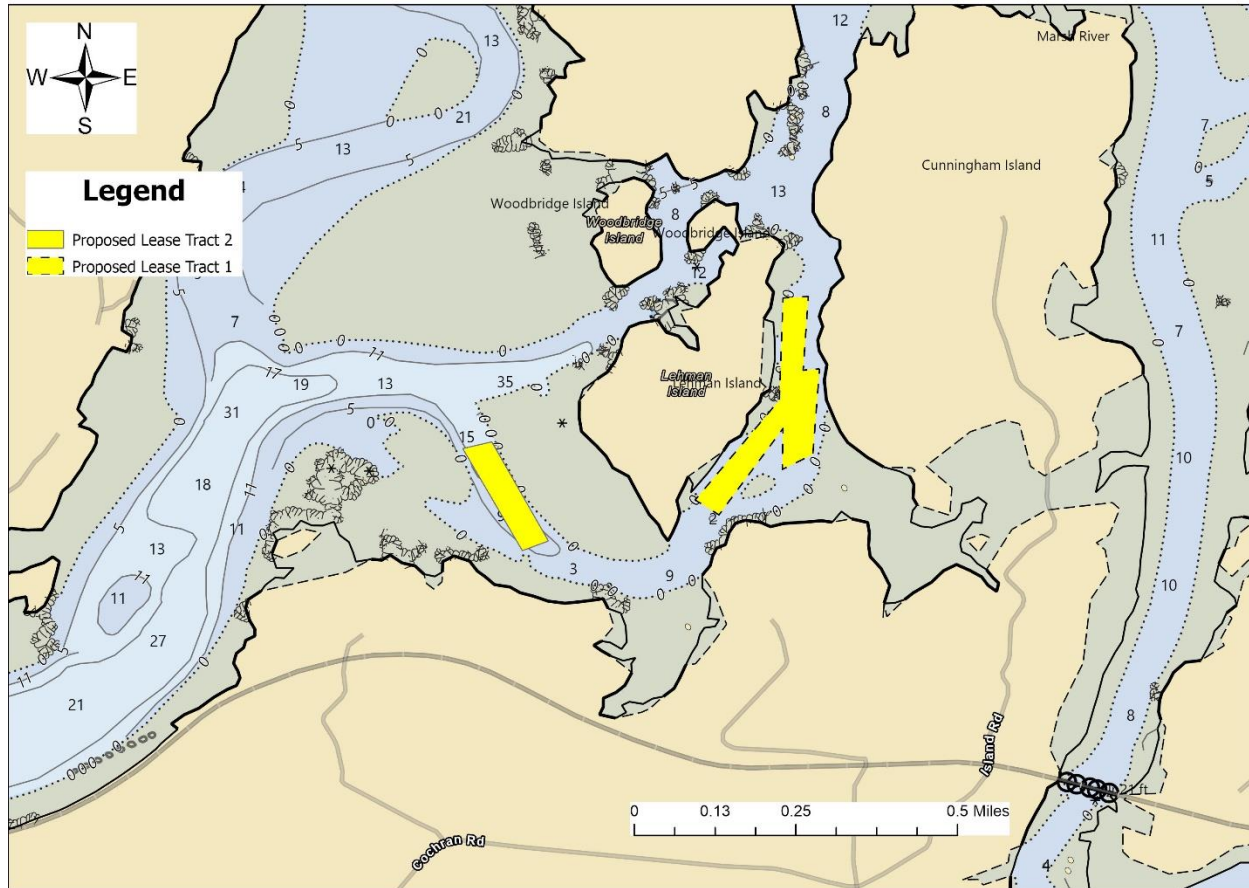


Figure 4. Navigational channels in the vicinity of the proposal.

(3) Fishing and Other Uses

During MDMR’s site assessment, scientists observed two lobster buoys north of Tract 2. MDMR scientists did not observe lobster (*Homarus americanus*) within the boundaries of the proposal. One boat observed during the site visit appeared to have two shellfish harvesters aboard. MDMR scientists observed clams, likely quahog (*Mercenaria mercenaria*), within both Tracts but did not observe any shellfish harvesting at the time of the site assessment.

(4) Other Aquaculture Uses

The applicant has one existing standard lease site, SHE LE, and three experimental lease sites, SHE LE2X, SHE LE3X, and SHE LE4X, within 1,000 feet of the proposal. Should the proposal be granted, the applicant plans to relinquish the following sites: SHE LE, SHE LE2X, SHE LE3X, and SHE LE4X (Figure 5).



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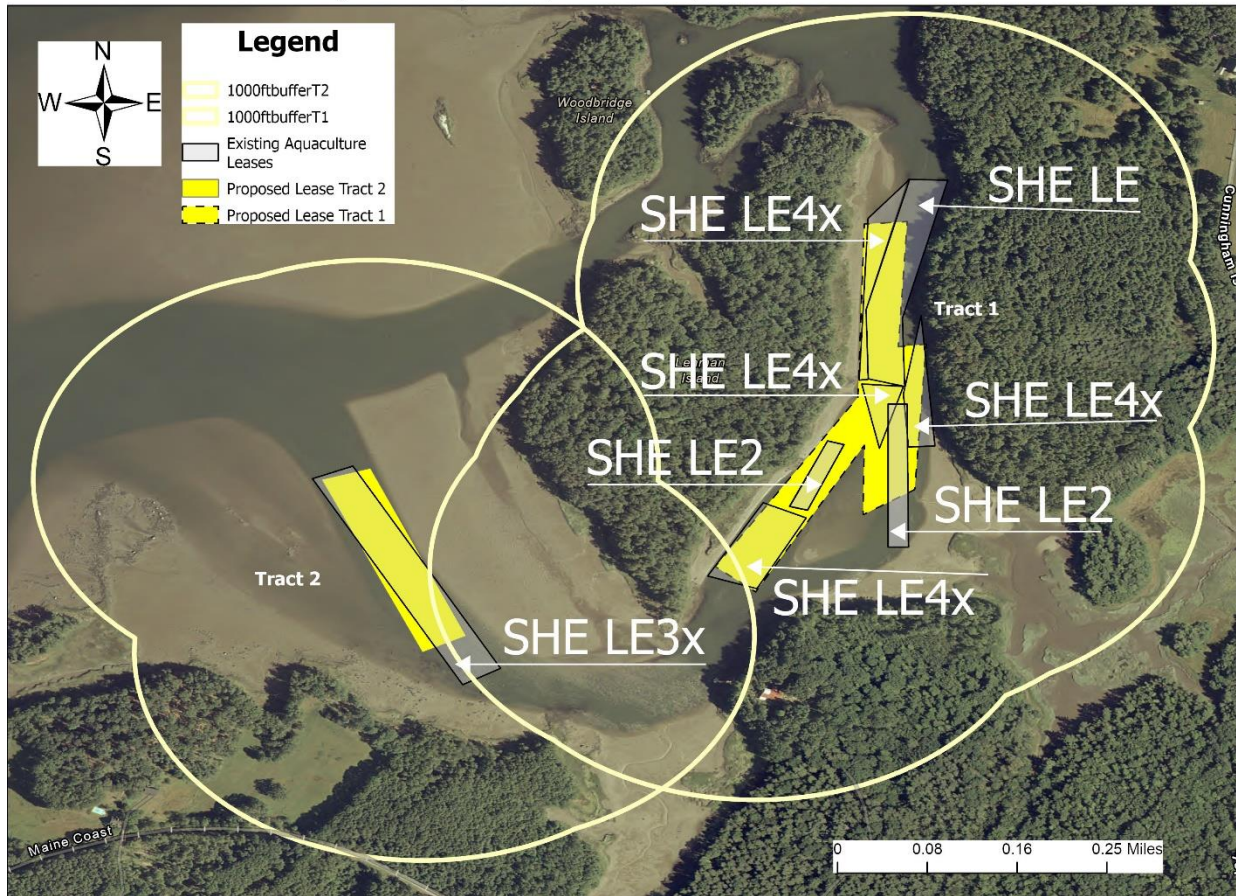


Figure 5. Existing aquaculture in the vicinity of the proposal.

(5) Existing Support System

Epibenthic Flora and Fauna

During the site visit on September 16, 2021, an underwater camera was used to document the epibenthic ecology of the area. The relative abundance of epibenthic macro flora and fauna observed throughout the video transects, along with marine species observed from the surface, is included below (Table 5).



Table 5. Species observed during MDMR SCUBA transects on September 16, 2021.

Species Observed	Species Abundance
American Oyster (<i>Crassostrea virginica</i>)	very common
Blue mussel (<i>Mytilus edulis</i>)	common
Horseshoe Crab (<i>Limulus polyphemus</i>)	common
Cancer Crab (<i>Cancer</i> spp) (Image 2)	common
Green Crab (<i>Cancer maenas</i>)	common
Quahog (<i>Mercenaria mercenaria</i>)	common
Razor clam (<i>Ensis directus</i>)	less common

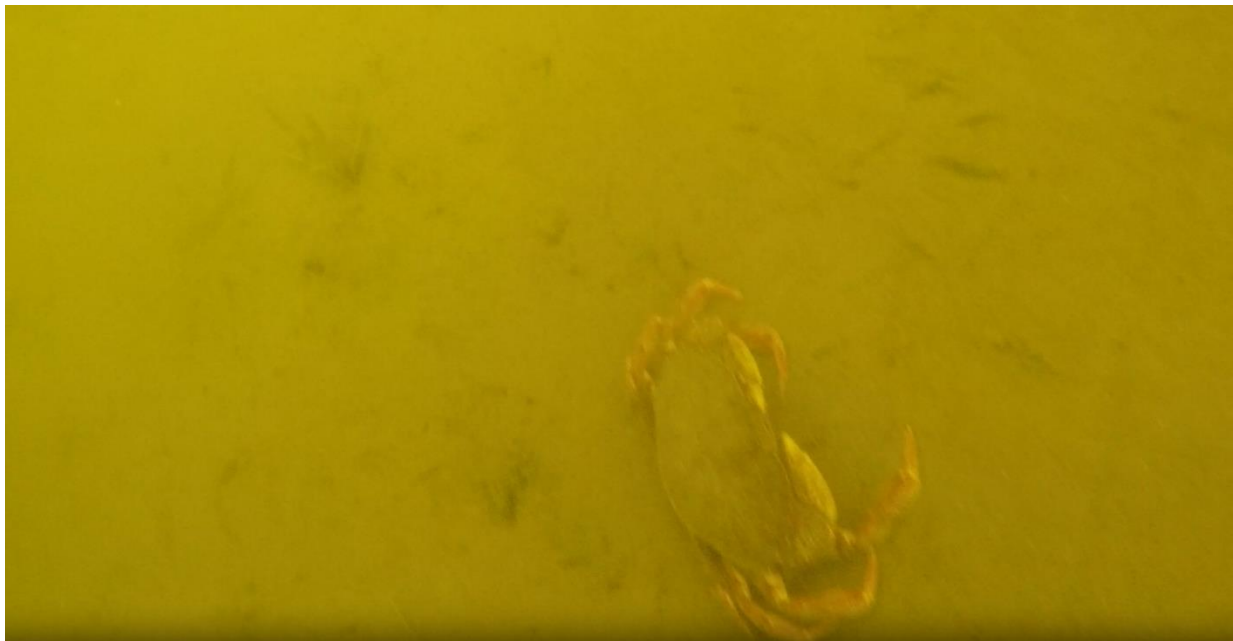


Image 2. Cancer crab (*Cancer* spp) observed during camera transect.



Eelgrass (*Zostera marina*)

Historical records, collected by MDMR in 1997, indicate the presence of eelgrass beds within the proposed lease area of Tract 1. Eelgrass was also observed within the 1,000-foot buffer of Tract 2 in 1997 (Figure 6). Eelgrass was also assessed in 2010 and none was present within the proposed lease area. During the site visit and underwater assessment on September 16, 2021, conducted by MDMR scientists, no eelgrass beds were observed.

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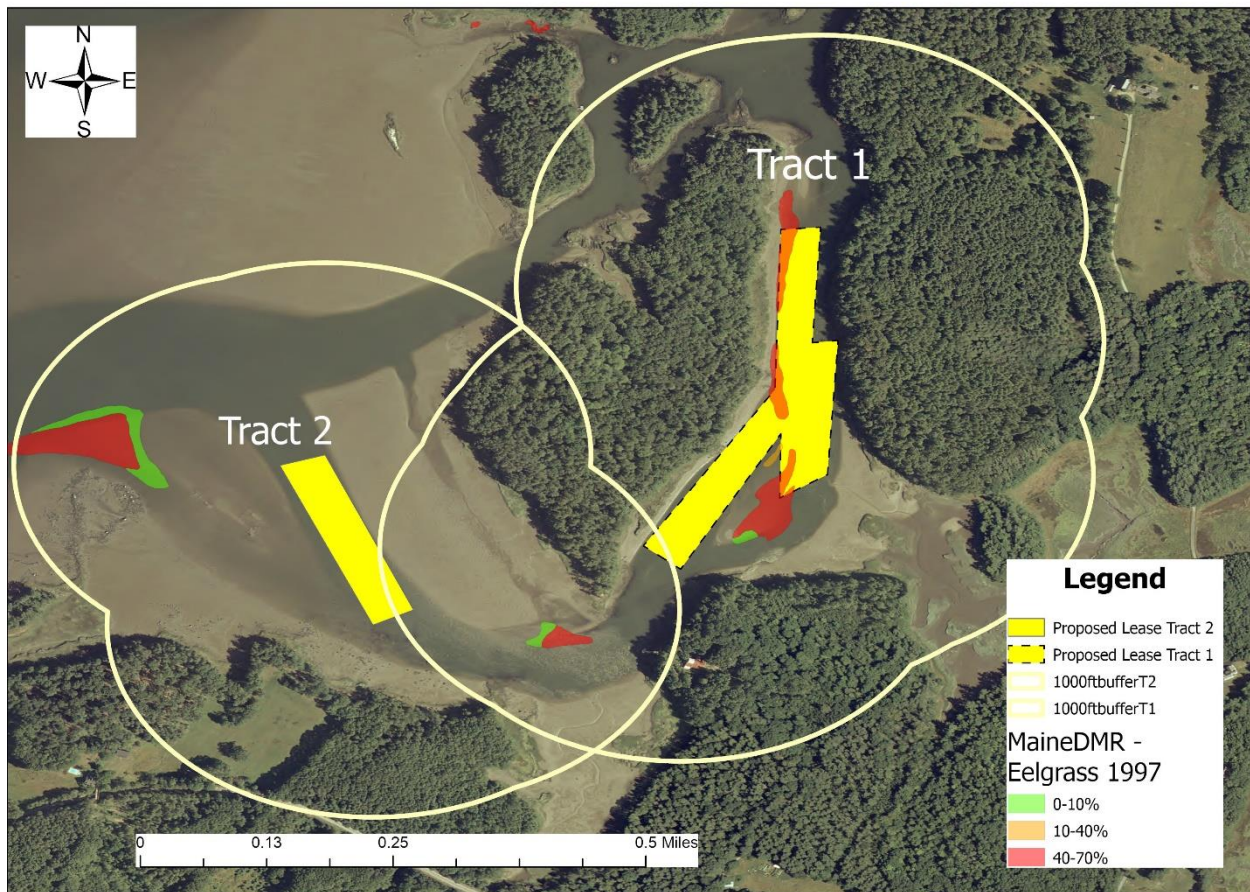


Figure 6. Historical eelgrass (*Z. marina*) near the proposed lease site utilizing data from 1997.⁴

Wildlife

During the site visit on September 16, 2021, MDMR scientists observed seagulls (*Larus argentatus*) in the shallow water off Lehman Island. Data maintained by the United States Fish

⁴ Data obtained from The Maine Office of GIS (Eelgrass 1997, 2010) "MaineDMR_Eelgrass" The 2010 data is not displayed as no eelgrass was documented within the boundaries of the proposed site during that time.



and Wildlife Service (USFWS) shows a Bald Eagle (*Haliaeetus leucocephalus*) nest on the west side of Lehman Island. The proposal is located outside of the 660 foot recommended buffer from a mapped eagles nest (Figure 7). MDMR scientists did not observe any Bald Eagles during the site assessment.

Based on Geographic Information System (GIS) data maintained by the Maine Department of Inland Fisheries and Wildlife (MDIFW) and available through the Maine Office of GIS, the proposal is not located within tidal waterfowl and wading bird habitat, but both Tract 1 and Tract 2 of the proposal are within close proximity to mapped tidal waterfowl and wading bird habitat (Figure 7).

On June 22, 2021, 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.⁵

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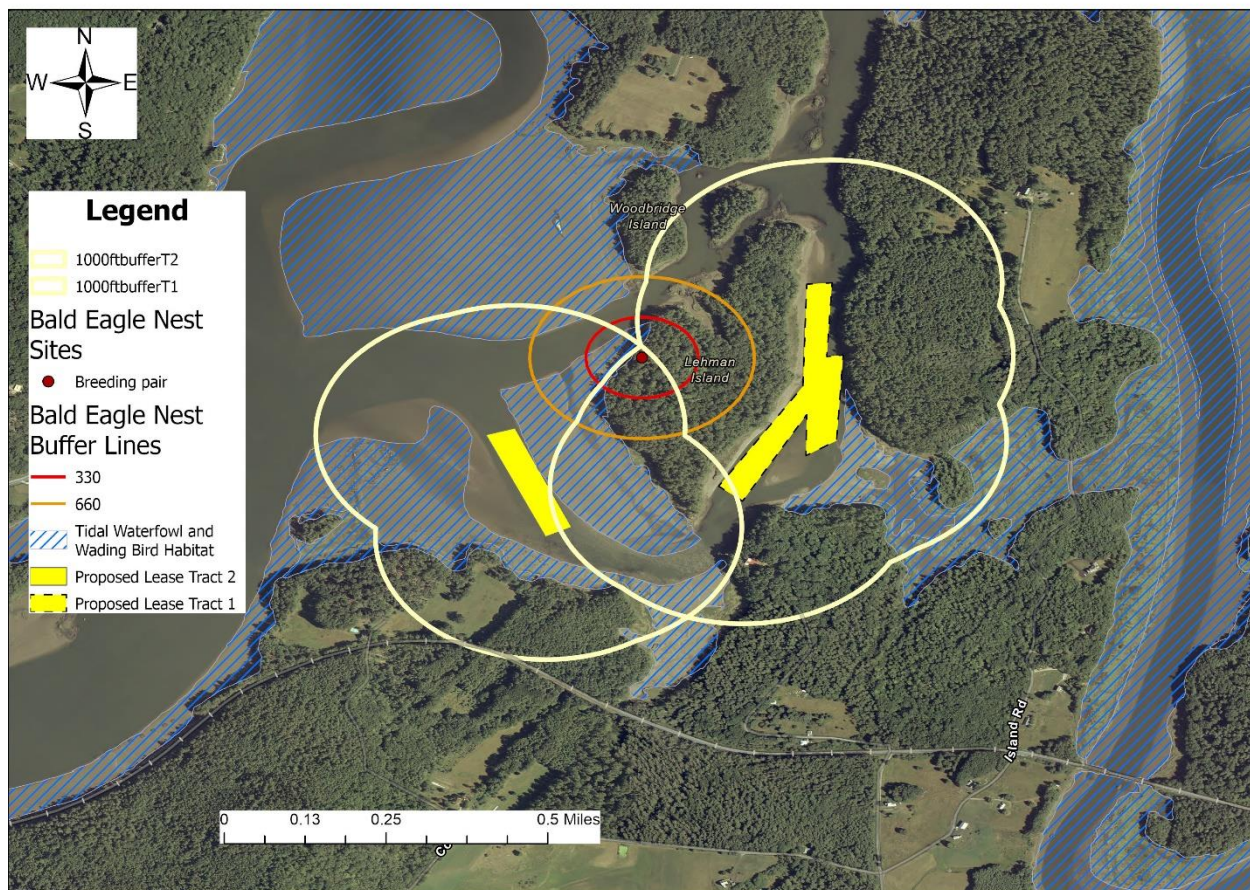


Figure 7. Bald Eagle nest nearest the proposal⁶ and tidal waterfowl and wading bird habitat⁷

⁵ Email correspondence between MDIFW and MDMR

⁶ Data obtained from USFWS maintained SDE Feature Class “Bald Eagle Nests-330’ & 660’ Buffers”

⁷ Data obtained from 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 8).

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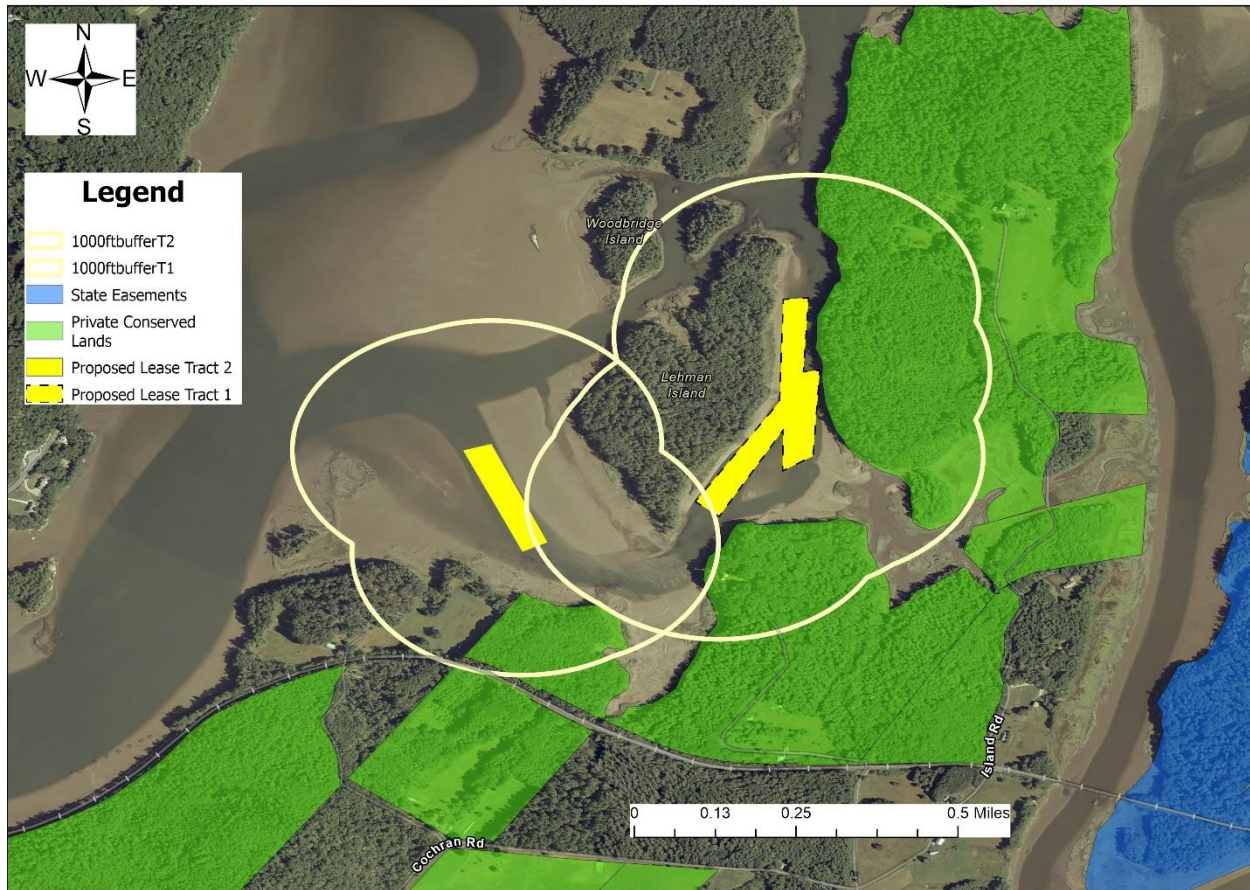


Figure 8. Conserved Lands⁸

(7) Water Quality

The proposed lease area is currently classified as “Open/Approved” for the harvest of shellfish by the MDMR Bureau of Public Health.

⁸ Data obtained from SDE Feature Class sourced from The Maine Office of GIS “GISVIEW.MECONSLANDS.Conserved_Lands”



Maine Department of Marine Resources Site Report

Maine Oyster, Inc
Sheepscot River
Newcastle

(8) Lighting

The applicant does not plan to install lighting on the proposed lease site.⁹

(9) Noise

The applicant plans to use a 24' Carolina skiff as the primary tending vessel on the proposed lease site. To harvest product the applicant plans to use a drag raised by a small electric hauler on the skiff. These activities are proposed to occur once per week.¹⁰

(10) Visual Impact

The applicant will be utilizing bottom culture harvesting. No structures will be installed aside from site markers.

⁹ Application page 8

¹⁰ Application pages 7-8