

**Figure 1.** Vicinity map.<sup>1</sup>

**Location:** North of Haystack Island, Back River, Waldoboro, Lincoln County, Maine

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

Site Review: Marcy Nelson and Cheyenne Adams<sup>2</sup>, Geoffrey Shook and Chloe Kilborn<sup>3</sup>

Report Preparation: Meryl Grady and Amanda Ellis

<sup>1</sup> 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.

<sup>2</sup> MDMR site visit on July 28, 2022

<sup>3</sup> MDMR site visit on October 5, 2023



## Maine Department of Marine Resources Site Report

Timothy Bennett and Adam Simmons  
North of Haystack Island, Back River  
Waldoboro

### Application Overview

The applicants, Timothy Bennett and Adam Simmons, are requesting a 2.71<sup>4</sup> acre experimental lease north of Haystack Island in the Back River for the suspended culture of American/Eastern Oysters (*Crassostrea virginica*). The applicants are proposing to grow *C. virginica* in surface bags and to utilize bottom cages for overwintering.<sup>5</sup>

### General Characteristics

On July 28, 2022, Maine Department of Marine Resources (MDMR) scientists assessed the proposed lease site. MDMR scientists arrived on site at approximately 8:55 AM. The nearby eastern shore of the Back River is rocky, intertidal ledge leading to mature, coniferous uplands. The western shore of the Back River hosts residential homes and rocky outcroppings. On October 5, 2023, MDMR scientists conducted a second site visit to assess depths at low tide and collect additional information about nearby features. MDMR scientists arrived on site at 9:45 AM.

### Depth

On October 5, 2023, MDMR scientists began collecting depths at the proposed site at approximately 10:01 AM at low tide. Depths were collected at the proposal corners and determined to be between 1.8 to 4.0 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 0.4 to 2.6 feet (Table 1).

**Table 1.** Predicted tidal heights in Friendship, Maine.<sup>6</sup>

Date	Time	Height (ft)
7/28/2022	5:46 AM	0.4 L
7/28/2022	11:50 AM	8.3 H
7/28/2022	5:41 PM	1.4 L
7/28/2022	11:49 PM	9.7 H
10/5/2023	3:58 AM	8.6 H
10/5/2023	9:58 AM	1.4 L
10/5/2023	4:08 PM	9.4 H
10/5/2023	10:46 PM	0.6 L

<sup>4</sup> Applicant originally requested 2.52 acres. DMR calculations indicate the area is 2.71 acres.

<sup>5</sup> Application page 7.

<sup>6</sup> <https://www.usharbors.com/harbor/maine/friendship-harbor-me/tides/>



### **Bottom Characteristics**

MDMR scientists observed the bottom characteristics of the proposed lease site via a drop-camera transect (Figure 2). 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 and shell rubble.

**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
Biogenic Substrate	Shell Substrate	Shell Rubble	Clam/Oyster Rubble

### **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) – 2.71 Acres**

<u>Corner</u>	<u>Latitude</u>	<u>Longitude</u>	
NW	44.0188°	-69.3537°	then 136.4 feet at 106° True to
NE	44.0187°	-69.3532°	then 774.8 feet at 200° True to
SE	44.0167°	-69.3542°	then 173.8 feet at 296° True to
SW	44.0169°	-69.3548°	then 750.4 feet at 23° True to NW

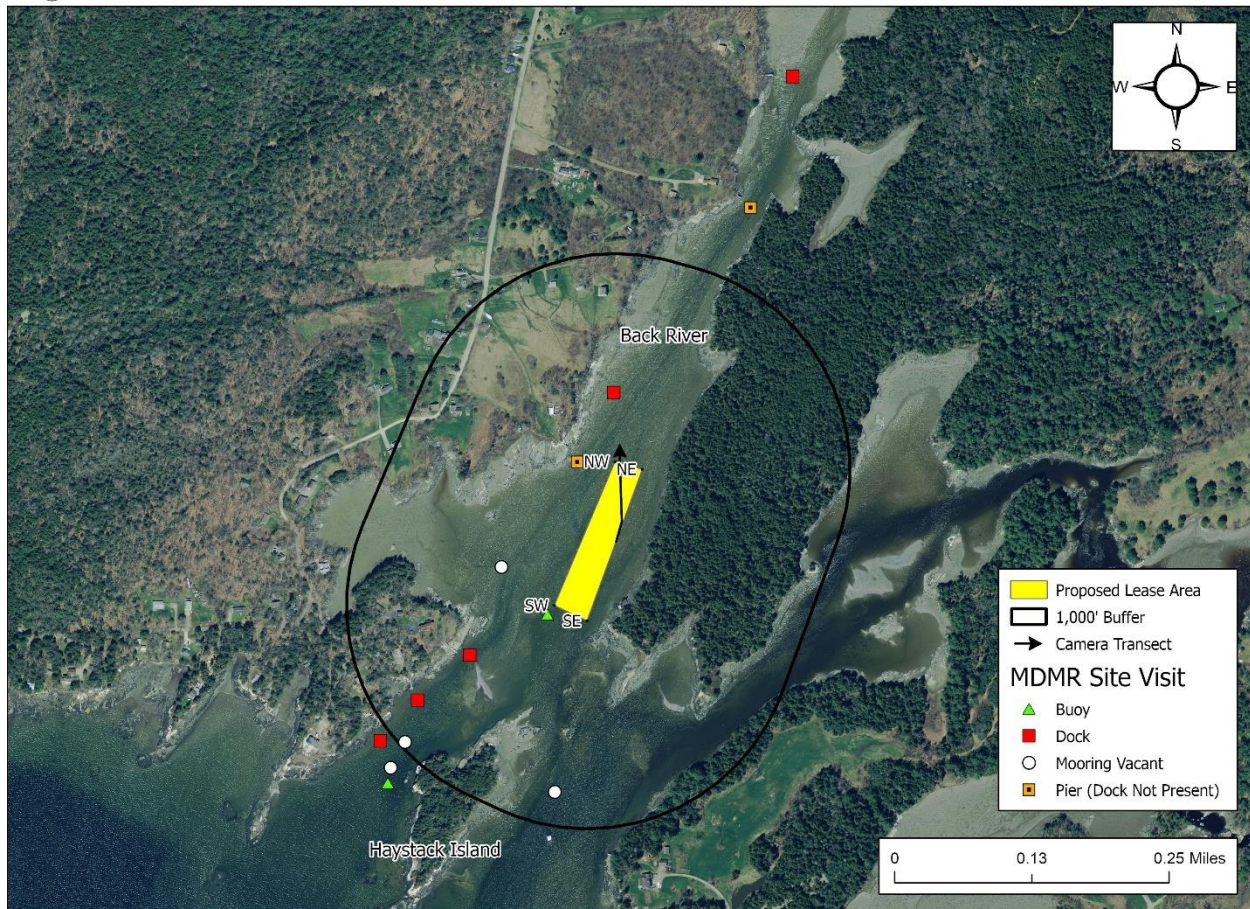
**Table 3.** Approximate distances from proposed lease corners to surrounding features (Figure 2).

Feature	Distance
NW corner to nearest pier	~180' to the west
NW corner to nearest shoreline at MLW	~120' to the west
NE corner to nearest shoreline at MLW	~100' to the east
SE corner to nearest shoreline at MLW	~60' to the east
SW corner to nearest shoreline at MLW	~300' to the southwest
SW corner to nearest mooring	~315' to the northwest
SW corner to nearest dock	~470' to the southwest





Bennett and Simmons - North of Haystack Island, Back River, Waldoboro



**Figure 2.** Proposed lease area with site visit observations from October 5, 2023.

***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 5, 2023, MDMR scientists observed five docks in the vicinity of the proposal. Additionally, there were two piers observed that did not have a ramp or dock presently attached at the time of the site visit, but the associated ramp and dock were observed on land. The nearest pier was located approximately 180 feet to the west of the proposal. The second southernmost observed dock had a dinghy stored on it.



## Maine Department of Marine Resources Site Report

Timothy Bennett and Adam Simmons  
North of Haystack Island, Back River  
Waldoboro

Four moorings were observed in the vicinity of the proposal on October 5, 2023. All four moorings were vacant at the time of the site visit. The nearest mooring was located approximately 315 feet to the west of the proposal (Figure 2).

The harbormaster for the town of Waldoboro indicated there may be a concern for riparian ingress and egress at tidal stages other than high tide due to the width and location of the proposal.<sup>7</sup>

### (2) Navigation

Due to the shallow nature of the Back River, the amount of navigable water fluctuates with tidal stage. At high tide, there is approximately 230 feet of navigable water to the west of the northwestern boundary of the proposal. At MLW, there is approximately 120 feet of navigational water. At high tide, there is approximately 400 feet of navigable water to the west of the southwestern boundary of the proposal. At MLW, there is approximately 300 feet of navigable water (Figure 3). MDMR did not observe any vessels operating under power during either site visit.

The harbormaster for the town of Waldoboro indicated there may be a concern regarding the width and location of the proposal because the Back River is extremely shallow at low tide and there are smaller lobster boats that frequent the area.<sup>8</sup>

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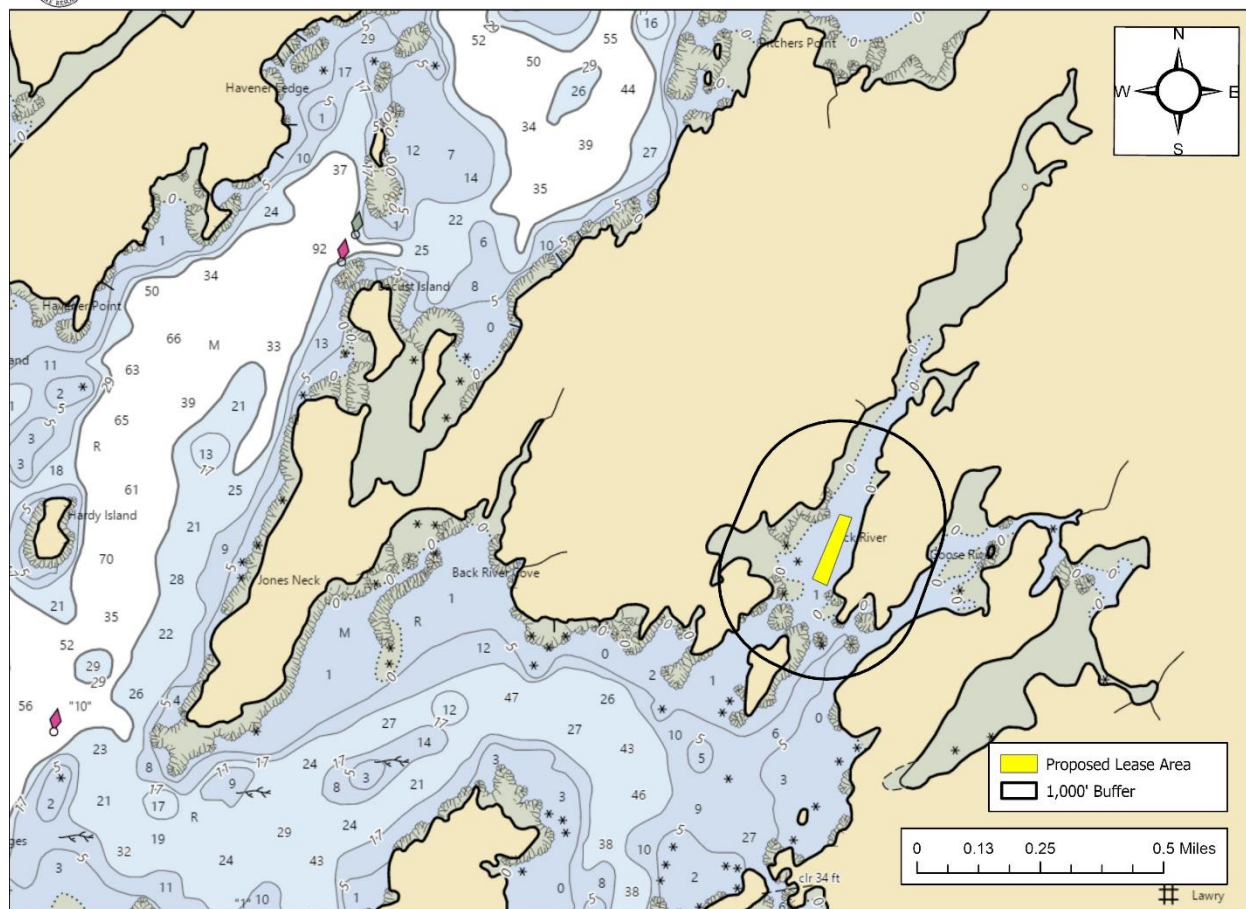
<sup>7</sup> Harbormaster Questionnaire submitted on March 27, 2022 by Waldoboro harbormaster, Justin D. Hills

<sup>8</sup> Harbormaster Questionnaire submitted on March 27, 2022 by Waldoboro harbormaster, Justin D. Hills





Bennett and Simmons - North of Haystack Island, Back River, Waldoboro



**Figure 3.** Navigational channels in the vicinity of the proposal.

### (3) Fishing and Other Uses

During the site visit on July 28, 2022, MDMR scientists observed four buoys in the vicinity of the proposal. The three buoys nearest to the proposal were trap-style buoys located approximately 175 feet, 365 feet, and 1,100 feet to the west or southwest of the proposal. There was one lobster-style buoy documented approximately 1,585 feet north of the proposal. Additionally, during the October 5, 2023 site visit, MDMR scientists observed two buoys in the vicinity of the proposal. One buoy was located approximately 50 feet south of the proposal (Image 1) and the other buoy was located approximately 1,165 feet southwest of the proposal (Figure 4). No lobster (*Homarus americanus*) was observed within the proposal boundaries on MDMR's underwater camera footage.

On March 11, 2022, a staff member from the Bureau of Public Health responded by email to a "Request for Agency Review and Comment" stating that the proposal could be close enough to



## Maine Department of Marine Resources Site Report

Timothy Bennett and Adam Simmons  
North of Haystack Island, Back River  
Waldoboro

the intertidal and occasionally shallow enough to allow wild harvest of any shellfish already existing on site.<sup>9</sup>

There were three kayakers observed in the general vicinity of the proposal during the July 28, 2022 site visit. Two kayakers were observed traveling west to east along the northern shoreline of Haystack Island. The third kayaker was observed departing from a dock to the north of the proposal traveling southerly past the proposal to the southern end of Haystack Island.



**Image 1.** Buoy located closest to the proposal during the October 5, 2023 site visit.

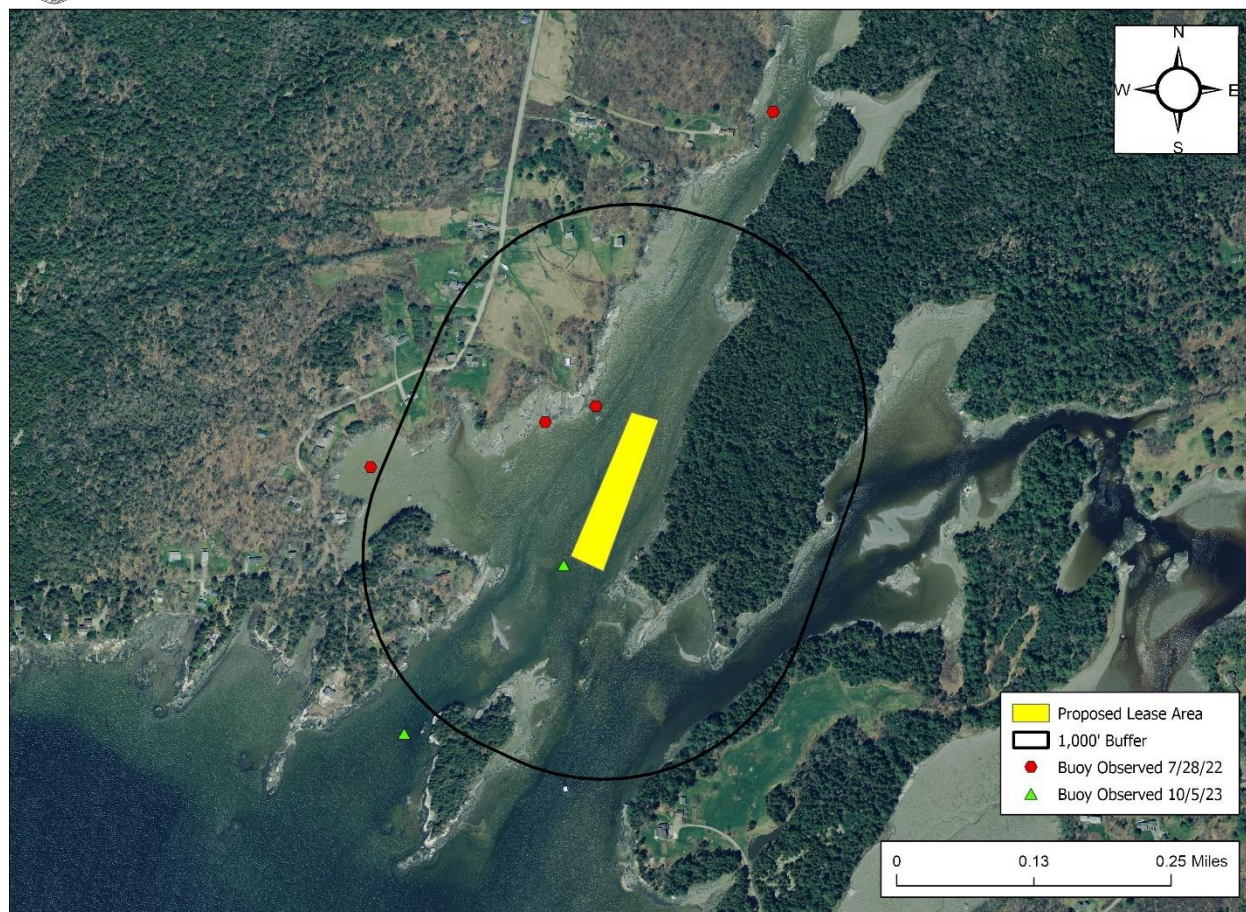
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<sup>9</sup> Email correspondence between MDMR BPH and MDMR Aquaculture Division





Bennett and Simmons - North of Haystack Island, Back River, Waldoboro



**Figure 4.** Buoys observed in the vicinity of the proposal.





#### (4) Other Aquaculture Uses

There are no aquaculture leases or limited purpose aquaculture (LPA) sites within 1,000 feet of the proposed lease site (Figure 5).

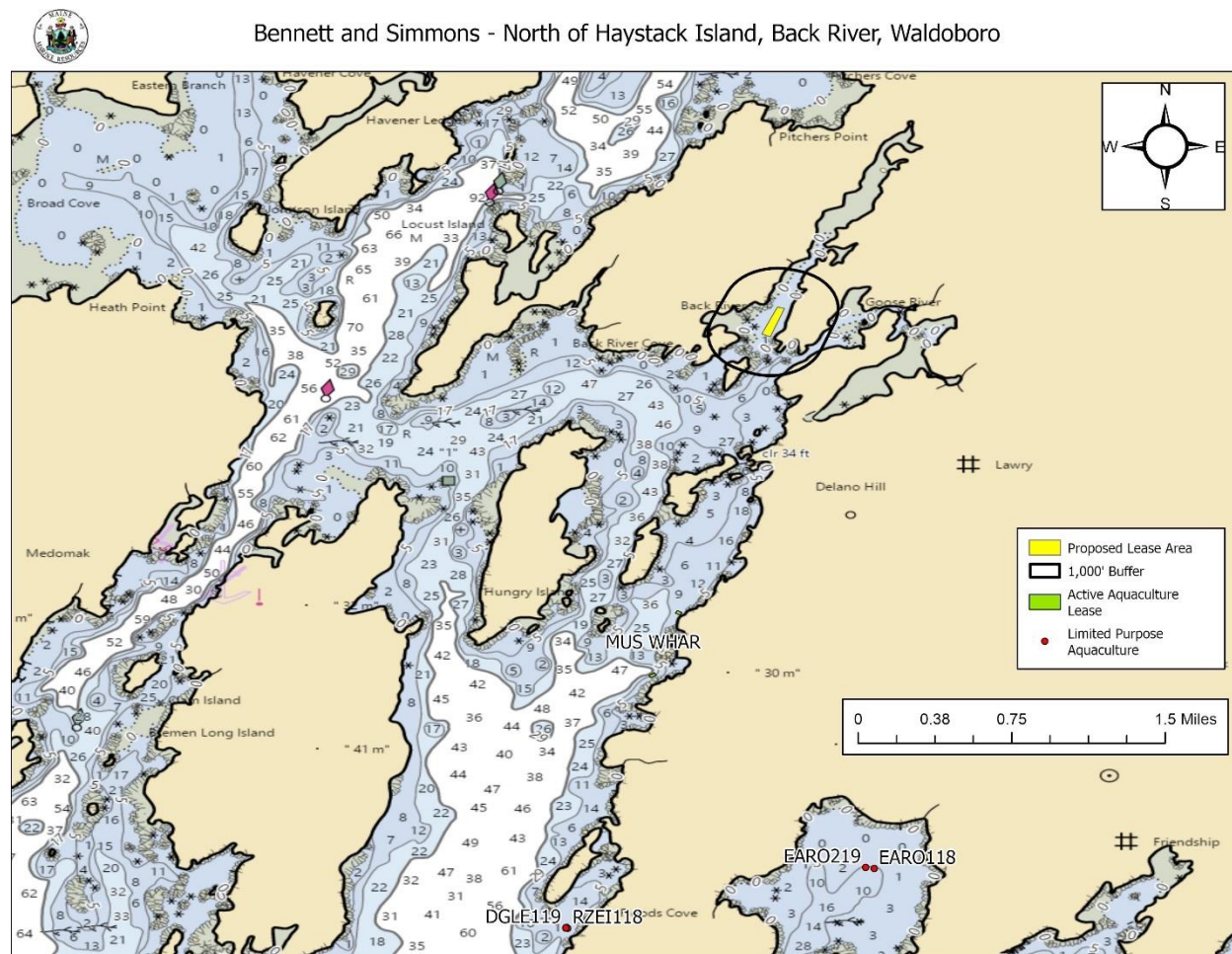


Figure 5. Aquaculture leases LPA licenses in the general area of the proposal.

#### (5) Existing System Support

##### Epibenthic Flora and Fauna

On July 28, 2022, MDMR scientists conducted a drop-camera transect 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. In addition to the epibenthic flora and fauna observed, there were double-crested cormorants (*Nannopterum auritum*), common terns (*Sterna hirundo*), gulls (*Larinae* spp.), a great blue heron (*Ardea herodias*), a belted kingfisher (*Megaceryle alcyon*), terns (*Laridae* spp.), and Canadian geese (*Branta canadensis*) in the general vicinity of the proposal on July 28, 2022.



**Table 4.** Species observed using underwater camera footage.

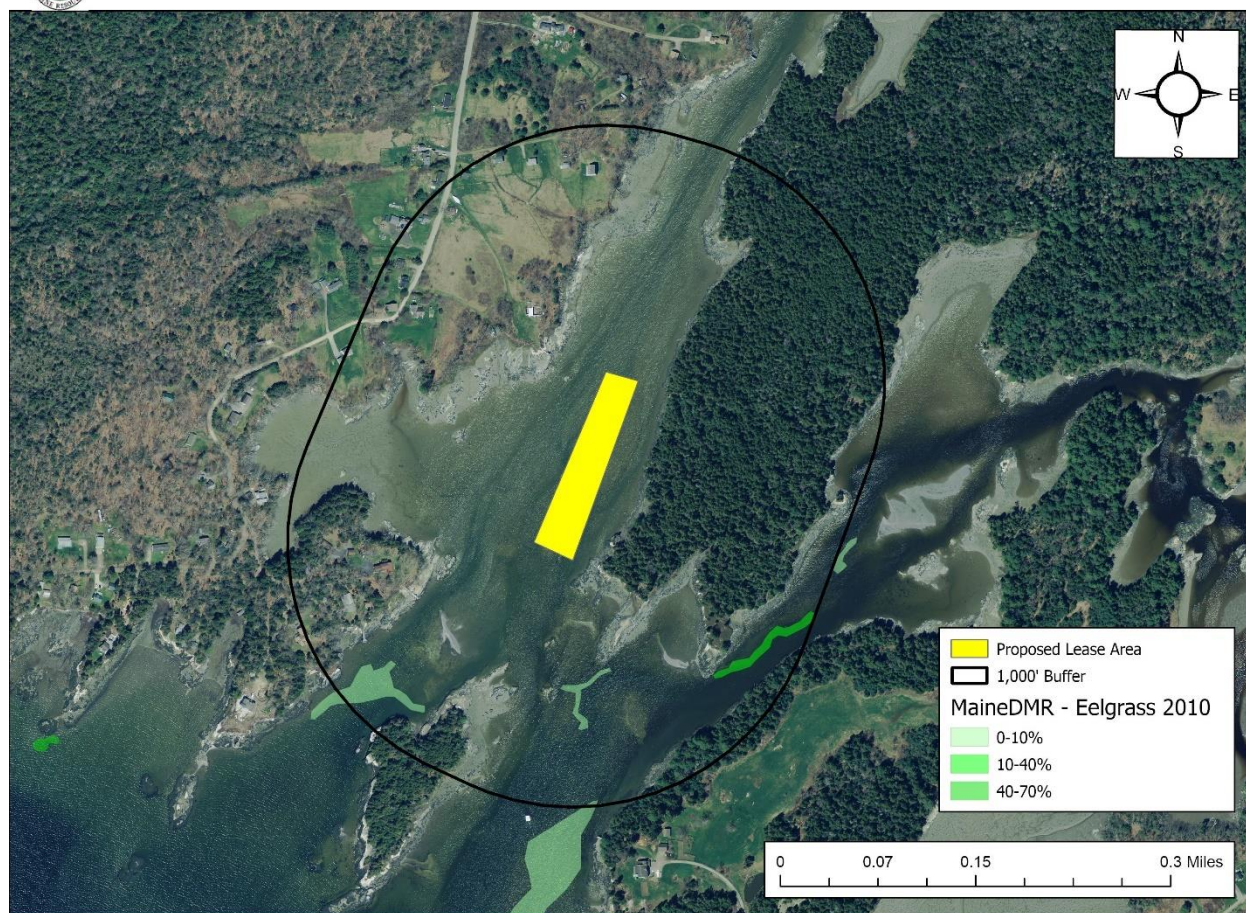
Species Observed	Abundance
Periwinkle ( <i>Littorina</i> spp.)	Occasional
Hermit Crab ( <i>Paguroidea</i> spp.)	Occasional

### **Eelgrass (*Zostera marina*)**

Historical records of eelgrass collected by MDMR in 2010 indicate mapped eelgrass presence in the vicinity of the proposal. The nearest mapped eelgrass is approximately 500 feet southeast of the proposal (Figure 6).<sup>10</sup> No eelgrass was observed within the proposal boundaries during MDMR's site assessments.



Bennett and Simmons - North of Haystack Island, Back River, Waldoboro



**Figure 6.** Mapped eelgrass (*Z. marina*) near the proposed lease utilizing 2010 data.

<sup>10</sup> Data obtained from The Maine Office of GIS "GISVIEW.MEDMR.Eelgrass". This is the most current record of mapped eelgrass in the vicinity of the proposal.





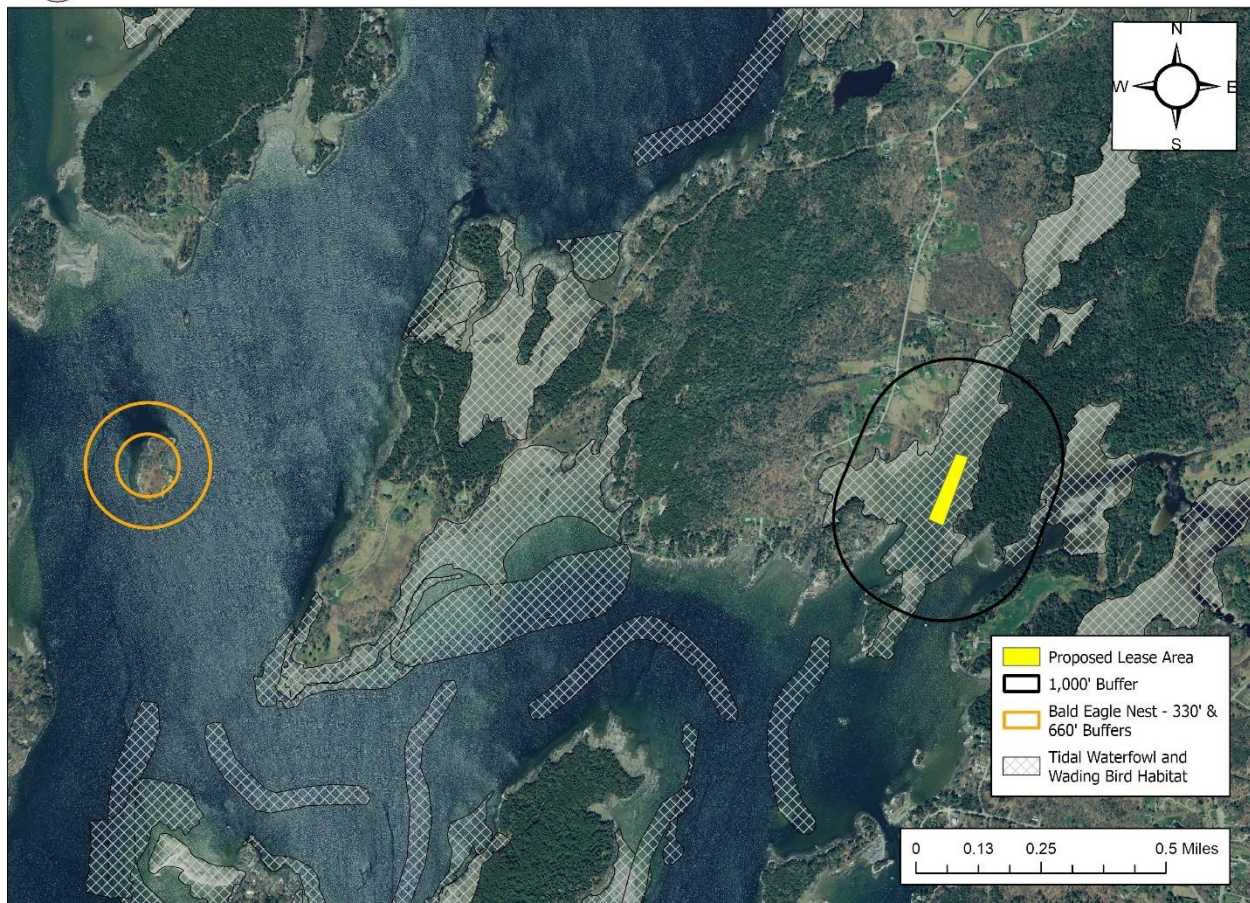
## Wildlife

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 within mapped tidal waterfowl and wading bird habitat. Data collected by the United States Fish and Wildlife Service in 2022 by aerial nest survey shows the closest mapped bald eagle nesting site to be approximately 1.5 miles west of the proposal (Figure 7).

On March 3, 2022, 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.<sup>11</sup>



Bennett and Simmons - North of Haystack Island, Back River, Waldoboro



**Figure 7.** Mapped Bald Eagle nests<sup>12</sup> and Tidal Wading Bird and Waterfowl Habitat<sup>13</sup>.

<sup>11</sup> Email correspondence between MDIFW and MDMR

<sup>12</sup> Data obtained from USFWS “Bald\_Eagle\_Nests\_-\_Maine\_2023”

<sup>13</sup> Data obtained from MDIWF maintained SDE Feature Class “GISVIEW.MEIFW.Twwh”





## **Maine Department of Marine Resources Site Report**

Timothy Bennett and Adam Simmons  
North of Haystack Island, Back River  
Waldoboro

### **(6) Interference with Public Facilities**

The proposed lease is not located 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 "Open/Approved" for the harvest of shellfish by the MDMR Bureau of Public Health.