

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

**Location:** The Branch, East of Hermit Island, New Meadows River, Phippsburg, Sagadahoc County, Maine

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

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<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.

## **Application Overview**

The applicant, Hermit Island Oyster Company LLC, is requesting a .62-acre standard lease for the suspended culture of shellfish, east of Hermit Island in the New Meadows River in an area known as The Branch. Shellfish are intended to be cultivated in up to 120 floating oyster grow cages. Gear is intended to be on site year-round and would be floating at the surface in the summer and kept on the bottom during the winter.<sup>2</sup> The applicant is currently operating a 20'x20' LPA (SEW413) within the boundaries of the proposed lease site (Figure 4).

## **General Characteristics**

On August 25, 2021, Maine Department of Marine Resources (MDMR) scientists assessed the proposed lease site. MDMR scientists arrived at the site at approximately 12:15 PM. A series of three dives were conducted to collect underwater video footage of the seafloor within and around the proposed lease site. The proposal is located within a 300 to 600-foot-wide back-bay east of Hermit Island in an area known as The Branch. The proposed site is located approximately 70 feet at its closest point and 270 feet at its furthest point from the eastern shore of Hermit Island at mean high water (MHW). The southern end of The Branch is salt marsh with a small beach and no navigable outlet to the open ocean. A wide sandbar with a road connects the southern end of Hermit Island to the mainland. Hermit Island contains a campground that is owned by the applicant. Both the Hermit Island and mainland shorelines are rocky, low-lying ledges with forested uplands and seaweed coverage on rocks and ledges. Tenants Island is a small, uninhabited island approximately 350 feet north of the northern end of the proposal. There are several rural campsites associated with the campground along the shoreline of Hermit Island. There is a dirt boat ramp on Hermit Island directly adjacent to the proposal that is owned by the applicant (Image 1) and a dock owned by the applicant that is within the boundaries of the proposal. The mainland is uninhabited in the immediate vicinity of the proposal but there are several houses and at least three docks or piers south of the proposal. The entire shoreline of The Branch is intertidal with a shallow channel at low tide that runs approximately down the middle of the waterbody.

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<sup>2</sup> Application pages 1,2,7



**Image 1.** Dock owned by the applicant with outer lease boundary marker and moored sailboat.

**Depth**

On August 25, 2021, MDMR scientists assessed the site beginning at approximately 12:15 PM. The tide was rising. Depths were determined to be between 9-20 feet with a depth of 9 feet at the northern corner and 11 feet at the southern end of the site. Correcting for tidal variations derives depths at the next high tide to be a range from 10.7-21.7 feet. Derived water depths at mean low water (MLW, 0.0 feet) range from 0.03-11.03 feet (Table 1).

**Table 1.** Tide observations at Portland Station 8418150, Casco Bay, Maine (43° 39.5 N, 70° 14.7 W).<sup>3</sup>

Date	Time	Height (ft)
8/25/2021	1:30 AM	10.67 H
8/25/2021	7:42 AM	.19 L
8/25/2021	2:00 PM	10.04 H
8/25/2021	8:00 PM	.51 L

<sup>3</sup> <https://tidesandcurrents.noaa.gov/stationhome.html?id=8418150>

## **Bottom Characteristics**

MDMR scientists observed the bottom characteristics within the proposed site via a series of three dives using SCUBA on August 25, 2021. Observed 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). The observed sea floor was composed of soft mud in most areas. Shell hash and shell rubble was also common at the site. There were occasional submerged rock ledges and small boulders scattered throughout the site (Image 2). In some areas, there were patches of land-based organic matter such as leaves, acorns, and small pieces of wood.

**Table 2.** Bottom characteristics of the proposed site.

Substrate Origin	Substrate Class	Substrate Subclass	Substrate Group
Geologic Substrate	Unconsolidated Mineral Substrate	Fine Unconsolidated Mineral Substrate	Mud
Geologic Substrate	Rock Substrate	Bedrock	
Geologic Substrate	Unconsolidated Mineral Substrate	Gravel	Boulder
Biogenic Substrate	Shell Substrate	Shell Rubble	Clam Rubble
Biogenic Substrate	Shell Substrate	Shell Hash	Clam Hash
Biogenic Substrate	Organic Substrate	Organic Debris	Woody Debris



**Image 2.** Submerged boulder as seen by underwater video footage.

**Position and Distances to Shore**

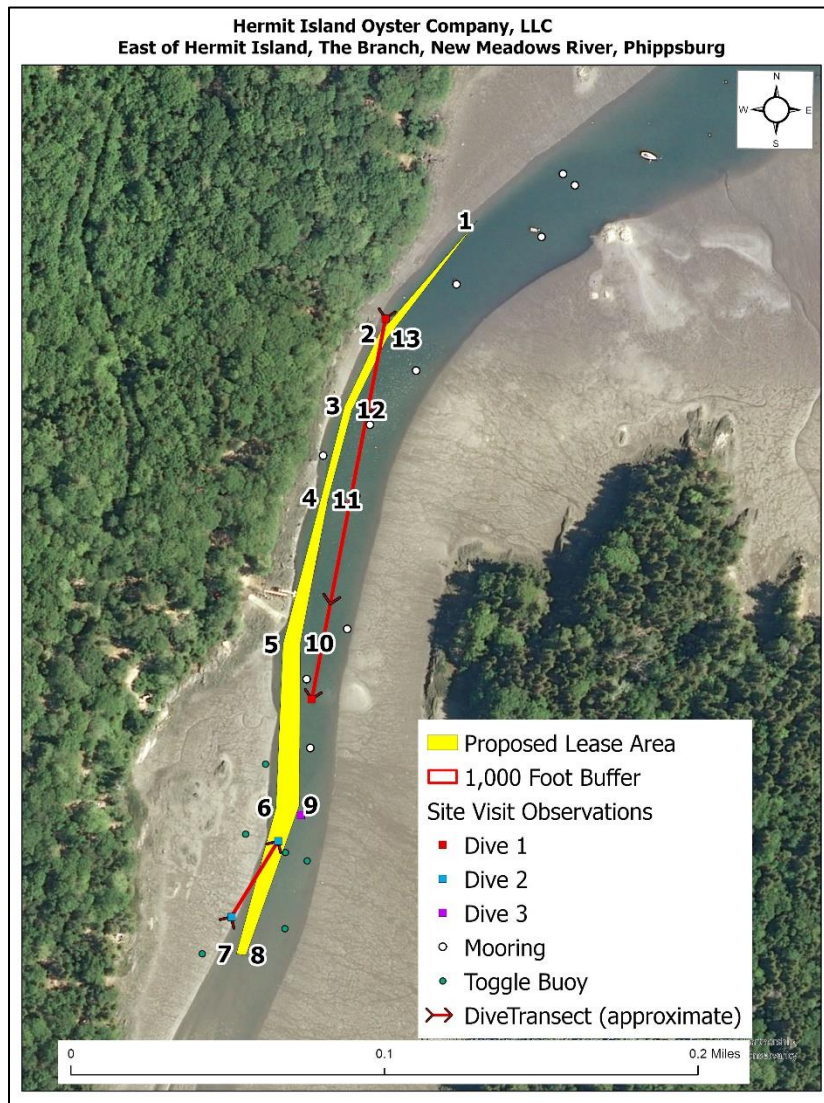
The measuring tool in ArcGIS Pro 2.9 was used to verify the distances and bearings between proposed lease corners. Distances to shore were determined using the measuring tool in ArcGIS Pro 2.9, digital orthophotography provided by the Maine Office of GIS, and the application coordinates (Table 3, Figure 2).

**Application Coordinates (WGS84) – .62 Acres (Figure 2)**

<u>Corner</u>	<u>Latitude</u>	<u>Longitude</u>						
1	43.72989° N	-69.84825° W	then	252.08	feet at	220°	True to	
2	43.72937° N	-69.84886° W	then	134.2	feet at	216°	True to	
3	43.72903° N	-69.84908° W	then	159.83	feet at	195°	True to	
4	43.72861° N	-69.84922° W	then	255.04	feet at	195°	True to	
5	43.72793° N	-69.84946° W	then	275.26	feet at	187°	True to	
6	43.72717° N	-69.84949° W	then	254.92	feet at	194°	True to	
7	43.72650° N	-69.84973° W	then	16.27	feet at	90°	True to	
8	43.72649° N	-69.84967° W	then	267.85	feet at	20°	True to	
9	43.72718° N	-69.84934° W	then	272.94	feet at	359°	True to	
10	43.72793° N	-69.84935° W	then	245.19	feet at	12°	True to	
11	43.72860° N	-69.84918° W	then	157.19	feet at	12°	True to	
12	43.72901° N	-69.84903° W	then	133.67	feet at	22°	True to	
13	43.72934° N	-69.84881° W	then	250.1	feet at	38°	True to	1

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

Feature	Distance
Corner 1 to Hermit Island shoreline, nearest point (~MLW)	~18 feet to the northwest
Corner 1 to mainland shoreline, nearest point (~MLW)	~130 feet to the southeast
Corner 8 to mainland shoreline, nearest point (~MLW)	~75 feet to the southeast
Corner 7 to Hermit Island nearest point (~MLW)	~30 feet to the west
Boat launch to western lease boundary, nearest point (~MLW)	~10 feet to the east



**Figure 2.** Approximate dive transects and moorings/buoys observed nearest to 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**

The location of the proposal is at the narrowest portion of The Branch where the channel is approximately 325 feet wide at mean high water (MHW) and approximately 200 feet wide at low tide (MLW). There is a dock located within the lease boundaries. The applicant is the owner of the dock, and it is for the use of guests of the Hermit Island Campground, which is also owned by the applicant.<sup>4</sup> At the time of MDMR’s site visit on August 25, 2021 there was a sailboat on a mooring directly adjacent to the boundary of the proposed lease area. There are no other docks on Hermit Island located south of the proposal. On the mainland side there are at least

<sup>4</sup> Application Page 19

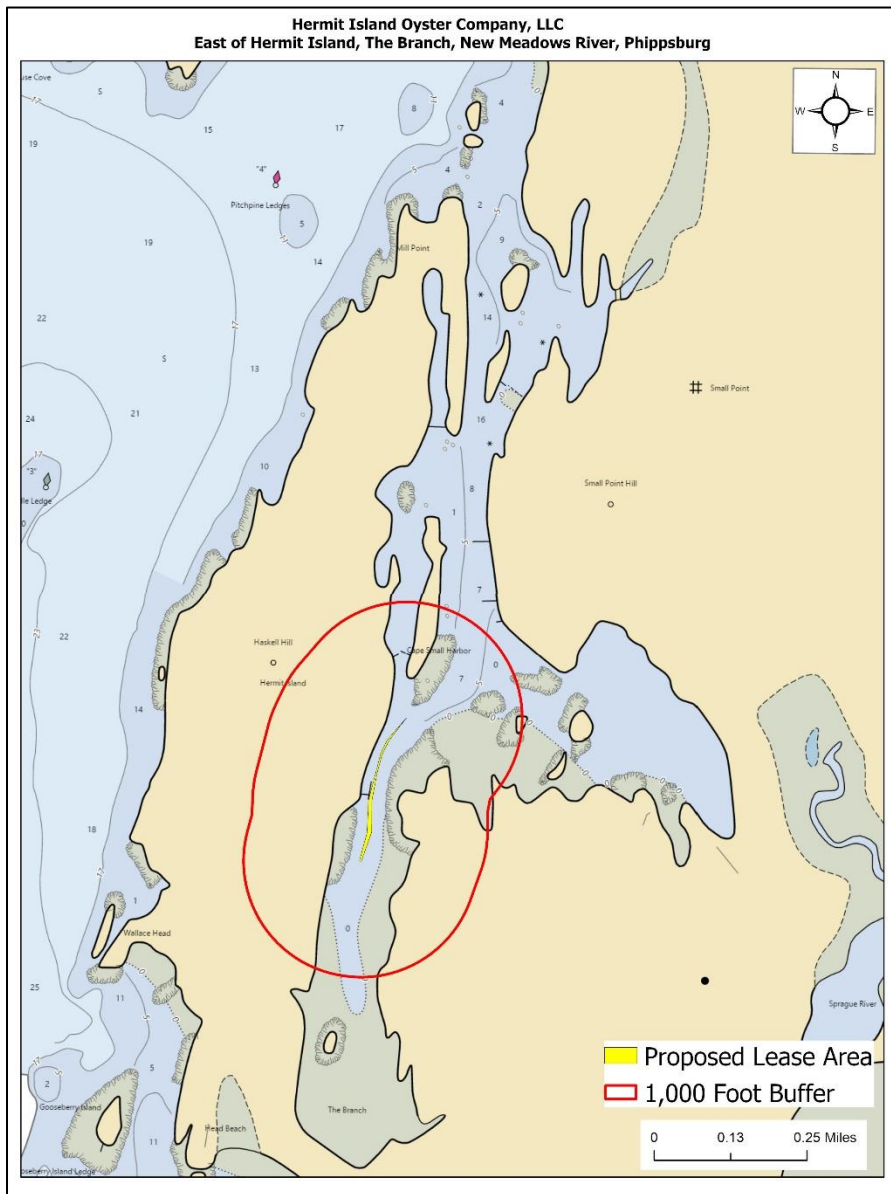


three intertidal docks/piers and approximately 12 tidal waterfront houses south of the proposal.

## **(2) Navigation**

The location of the proposal is at the narrowest portion of The Branch where the channel is approximately 325 feet wide at MHW and approximately 200 feet wide at MLW. The only access to The Branch is from a channel to the north. There is no outlet to open water at the southern end of The Branch. There is approximately 50-100 feet of navigable water between the eastern boundary of the proposal and the eastern edge of the channel at MLW. At the time of the MDMR site visit on August 25, 2021 there were approximately 11 moorings adjacent to the proposal in the channel. At least three moorings were occupied with either a sailboat or small outboard powered motorboat. The Cape Small Harbor mooring field is approximately 600 feet to the northeast of the proposal and has at least 25-30 moorings. At the time of MDMR's site visit, people were observed kayaking in The Branch and there were people observed tending boats on nearby moorings using rowboats and standup paddleboards.

A Harbormaster Questionnaire was sent to the Town of Phippsburg and the Town Harbormaster on May 26, 2021. MDMR did not receive any comments from the harbormaster related to this proposal.



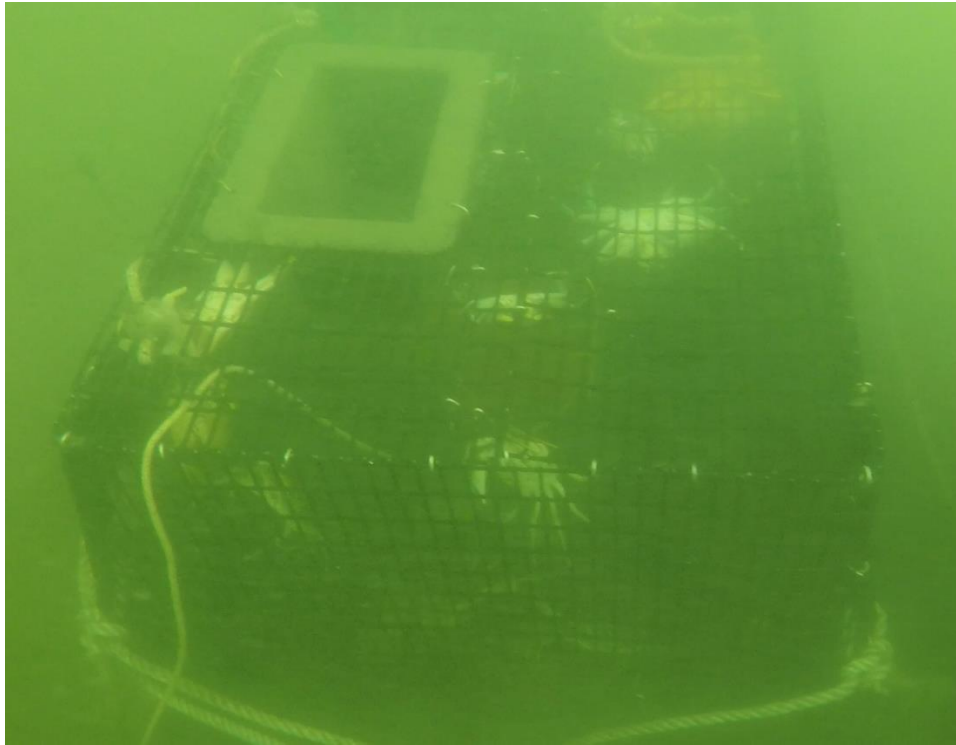
**Figure 3.** Proposed lease area, navigation channels, and channel markers.

### (3) Fishing and Other Uses

During the site assessment on August 25, 2021, MDMR scientists observed one lobster buoy in the immediate vicinity of the proposal. The underwater video footage collected by SCUBA showed the presence of lobster burrows and, at least, one lobster (*Homarus americanus*) was observed during the dives. The underwater assessment also showed the presence of quahogs (*Mercenaria mercenaria*) and European oysters (*Ostrea edulis*). MDMR did not observe any shellfish harvesting during the site assessment.



Underwater footage collected during MDMR’s site assessment on August 25, 2021 found the presence of what appeared to be green crab (*Carcinus maenas*) traps directly adjacent to the proposal marked by toggle floats (Figure 2). It was unclear if this gear belonged to the applicant.

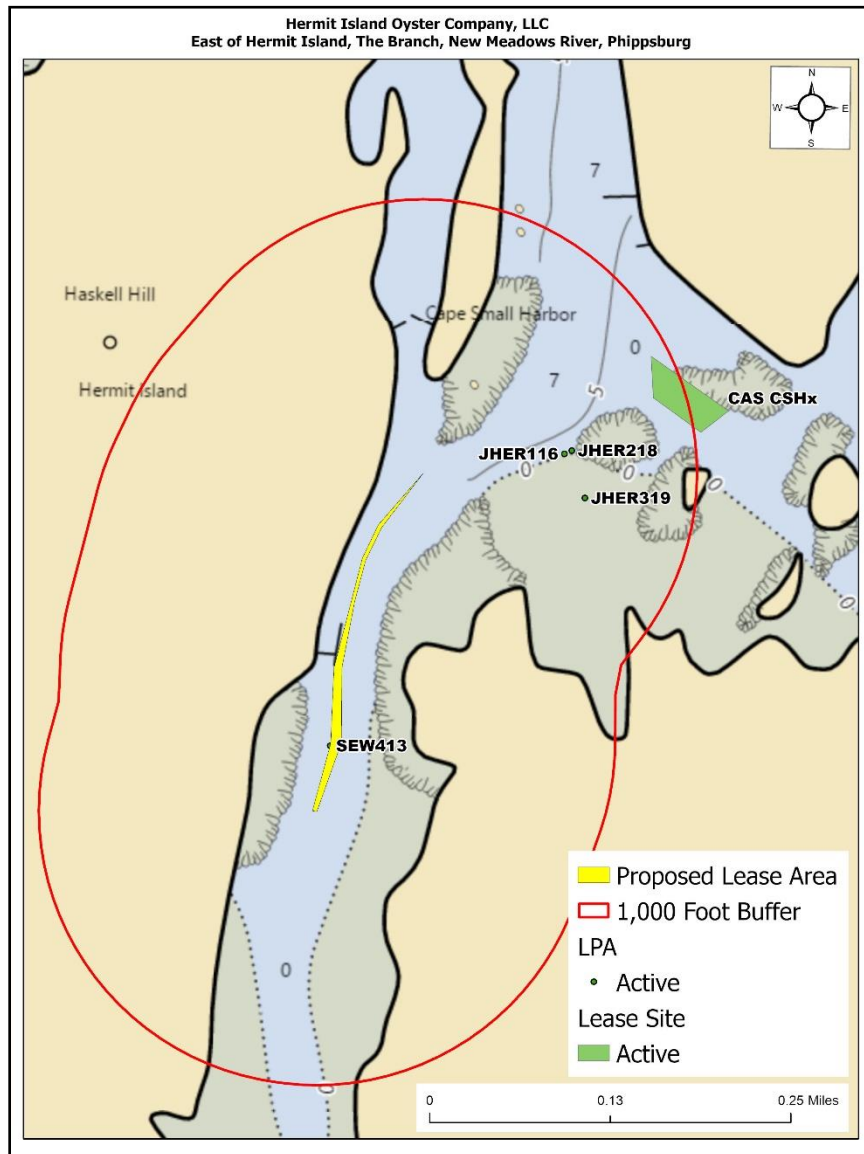


**Image 3.** Apparent Green Crab (*Carcinus maenas*) trap.

#### **(4) Other Aquaculture Uses**

The applicant currently holds a Limited Purpose Aquaculture (LPA) License for the suspended culture of American and European oysters (*Crassostrea virginica* and *Ostrea edulis*), SEW413, within the boundaries of the proposed lease area. If this proposal is granted, the applicant plans to relinquish SEW413. There are three other LPAs within 1,000 feet of the proposal not held by the applicant (Figure 4). The applicant also operates an experimental lease, CSHx, within 1,000 feet of the proposed lease area (Figure 5).

Underwater footage collected during MDMR’s site assessment on August 25, 2021 found the presence of at least one piece of “ghost gear” on the bottom in the vicinity of the proposal that appeared to no longer be actively used or maintained.



**Figure 4.** Aquaculture leases and Limited Purpose Aquaculture (LPA) licenses in the general area of the proposal.

## (5) Existing System Support

### Epibenthic Flora and Fauna

On August 25, 2021 MDMR scientists conducted underwater camera transects to assess the epibenthic ecology of the area (Figure 2). The observed bottom was primarily soft mud sediment with shell hash and shell rubble. Some areas of the bottom were covered with a thin layer of green algae. Submerged ledges and boulders contained a variety of tunicate species, blue mussels (*Mytilus edulis*), and drift rockweed (*Ascophyllum nodosum*). European oysters (*Ostrea edulis*), quahogs (*Mercenaria mercenaria*), green crabs (*Carcinus maenas*), hermit crabs (*Paguroidea* spp), rock crabs (*Cancer irroratus*), and periwinkles (*Littorinoidae* spp) were observed in varying densities throughout the proposed site. Several lobster burrows were

observed and at least one lobster (*Homarus americanus*) was observed. A little skate (*Leucoraja erinaceus*) and horseshoe crab (*Limulus polyphemus*) were also observed (Table 4).

**Table 4.** Species observed using underwater footage collected during MDMR's site visit.

Species Observed	Abundance
Rockweed ( <i>Ascophyllum nodosum</i> )	Occasional
European oysters ( <i>Ostrea edulis</i> )	Occasional
Tunicate species (not classified)	Occasional
Periwinkle ( <i>Littorina</i> spp)	Common
Hard Clam ( <i>Mercenaria mercenaria</i> )	Occasional
Green Crab ( <i>Carcinus maenas</i> )	Common
Blue Mussel ( <i>Mytilus edulis</i> )	Rare
Hermit Crab ( <i>Paguroidea</i> spp)	Common
Horseshoe crab ( <i>Limulus polyphemus</i> )	Rare
Rock crab ( <i>Cancer irroratus</i> )	Occasional
Lobster ( <i>Homarus americanus</i> )	Rare
Little Skate ( <i>Leucoraja erinaceus</i> )	Rare
Rock Barnacle ( <i>Semibalanus balanoides</i> )	Occasional



**Image 4.** Little skate (*Leucoraja erinaceus*) as seen from underwater video footage.

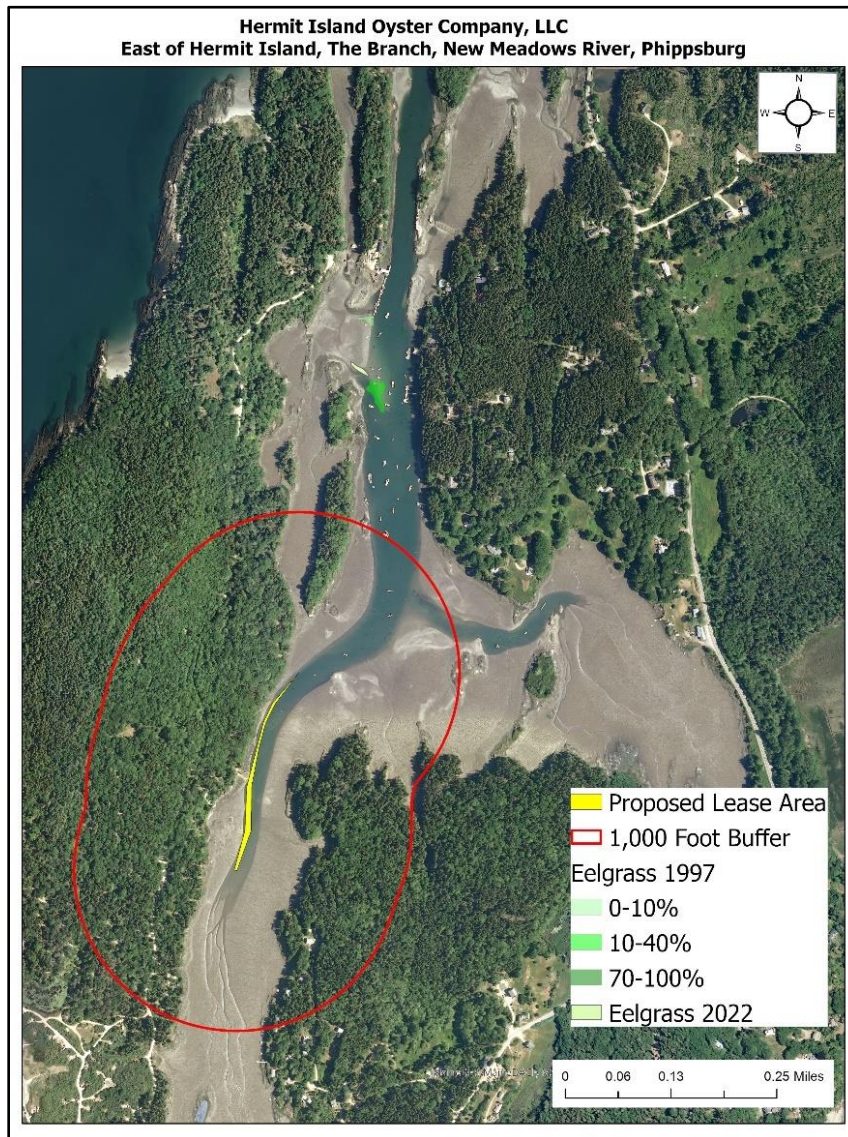


**Image 5.** Rock crab (*Cancer irroratus*) as seen from underwater video footage.

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

MDMR did not observe any eelgrass during the site assessment. According to data collected in 1997 and 2022, there has not been a historical presence of *Z. marina* observed within the proposal or the immediate vicinity. Data from 1997 shows that the nearest area of *Z. marina* was a small patch approximately 1800 feet to the north in Small Point Harbor (Figure 5). Data from 2022 indicates that the nearest eelgrass was even further from the site than what was identified in 1997 (Figure 5).





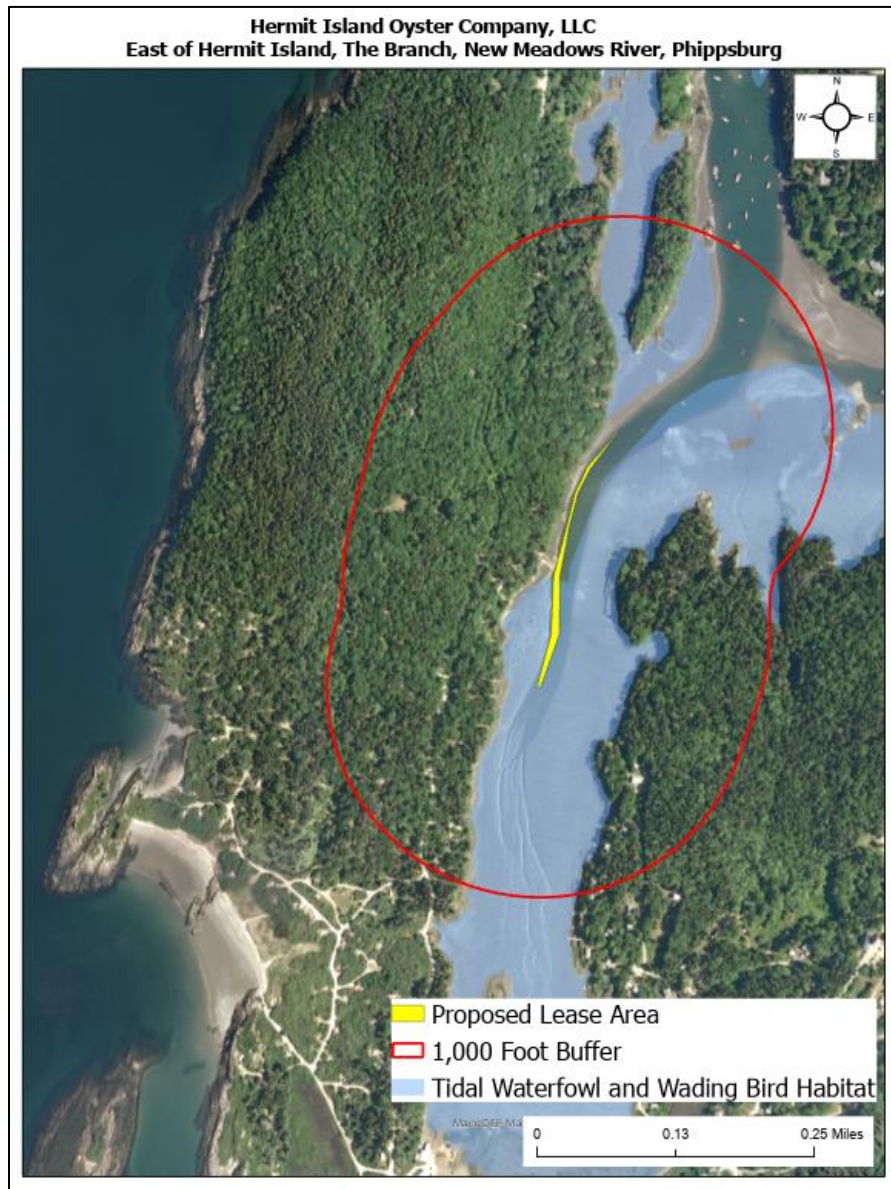
**Figure 5.** Historical eelgrass (*Z. marina*) near the proposed lease site utilizing data from 1997 and 2022.<sup>5</sup>

## 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, the southern portion of the proposed lease is located within tidal waterfowl and wading bird habitat and the northern portion is located approximately 60-100 feet west of tidal waterfowl and wading bird habitat (Figure 6). The United States Fish and Wildlife Service (USFWS) maintains a GIS data layer of bald eagle nests that was most recently updated in 2023. According to this data the nearest bald eagle (*Haliaeetus leucocephalus*) nests documented near the proposed lease site are over 2.5 miles away (Figure 7).

<sup>5</sup> Data obtained from The Maine Office of GIS (Eelgrass 1997, 2022).

On September 9, 2021, a Wildlife Biologist with MDIFW responded to a “Request for Agency Review and Comment”, stating that the proposed lease is located within tidal waterfowl and wading bird habitat. To minimize impacts to wildlife, it is recommended that all structures and activities located in subtidal areas have greater than 1 meter (3 feet) of water depth at low tide.<sup>6</sup>



**Figure 6.** Tidal waterfowl and wading bird habitat.<sup>7</sup>

<sup>6</sup> Email correspondence between MDIFW and MDMR

<sup>7</sup> Data obtained from MDIWF maintained SDE Feature Class “GISVIEW.MEIFW.Twwh”



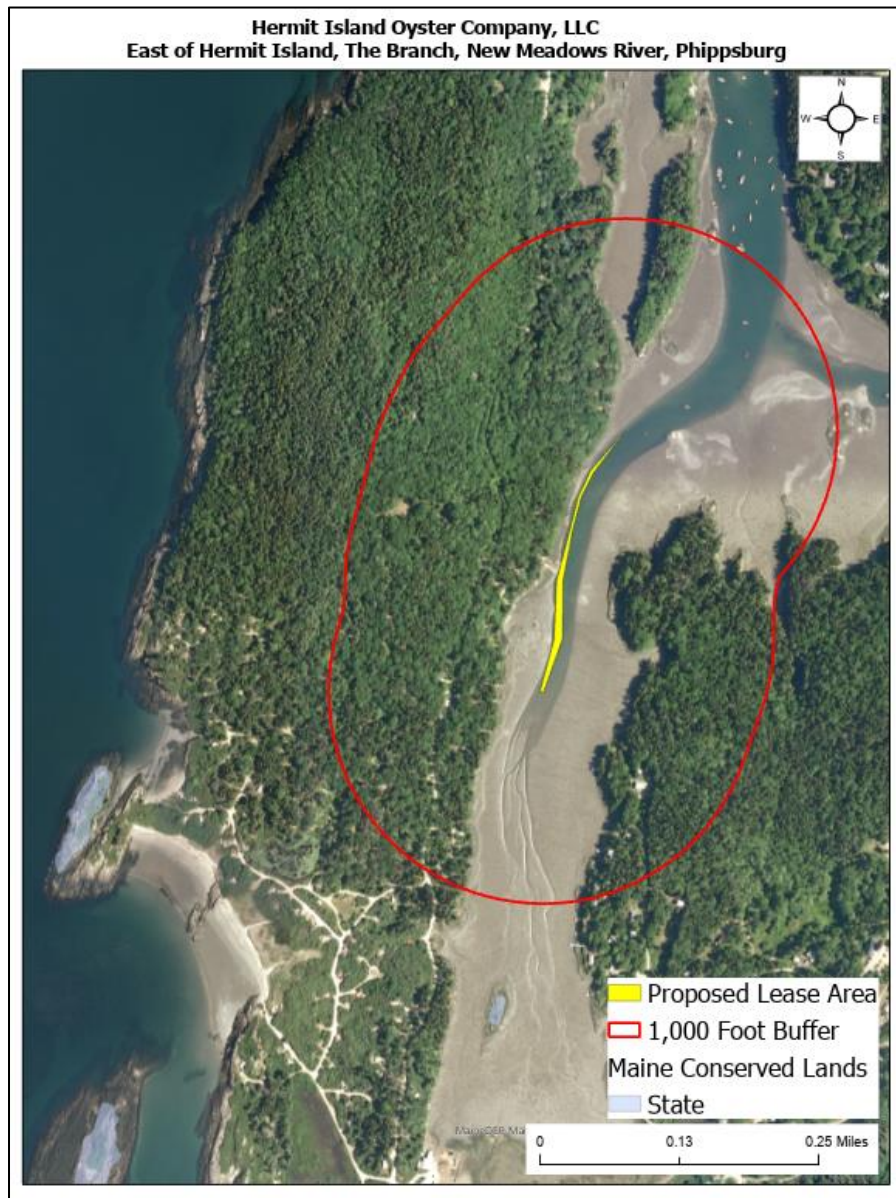


Figure 7. Bald eagle nests nearest the proposal<sup>8</sup>

#### (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 the federal, state, or municipal governments (Figure 8).

<sup>8</sup> Data obtained from USFWS maintained SDE Feature Class "Bald Eagle Nests-330' & 660' Buffers"



**Figure 8.** Public facilities near the proposed lease site.<sup>9</sup>

**(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.

<sup>9</sup> Data obtained from SDE Feature Class sourced from The Maine Office of GIS “GISVIEW.MECONSLANDS.Conserved\_Lands”

## **(8) Lighting**

The applicant may work beyond daylight hours at low tide during the fall, winter, and spring months, or in case of an emergency. If work occurs beyond daylight hours, up to two 12-volt LED headlamps, 350 lumens, will be used.<sup>10</sup>

## **(9) Noise**

The applicant plans to use an 18' wooden scow barge with a 5 hp outboard motor to tend to all aquaculture activities within The Branch. This boat is docked at the Hermit Island Marina, which is located north of the proposed lease site. The applicant also plans to use a 12-volt oyster tumbler/grader from April through November. In section 9.B. of the application, "*Noise and Light*", the applicant indicates that the tumbler would be used approximately 42 days per year for up to 8 hours at a time.<sup>11</sup> In section 8.B "*Production Activities*" the applicant indicates that tumbling and sorting will occur on-site once or twice a season.<sup>12</sup> No generator, power washer, or other powered equipment will be used on site. The applicant states that all equipment is substantially below ambient noise levels in the working harbor.<sup>13</sup>

## **(10) Visual Impact**

The applicant plans to use a variety of oyster cages and soft mesh bags. Floating cages would have black floats with forest green vinyl coating. Lease markers are proposed to be white.<sup>14</sup> Cages would be sunk to the bottom in the winter months, approximately December through March.<sup>15</sup> The applicant plans to be on site daily doing routine tending and maintenance.<sup>16</sup> Lease markers may need to be altered to conform with changes to DMR aquaculture lease marking requirements effective January 1, 2023. (DMR Rule 2.80)

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<sup>10</sup> Application page 25

<sup>11</sup> Application page 16

<sup>12</sup> Application page 15

<sup>13</sup> Application pages 24-25

<sup>14</sup> Application page 12

<sup>15</sup> Application page 16

<sup>16</sup> Application page 15