

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

**Location:** Long Reach, Casco Bay, Harpswell, Cumberland County, Maine

**Purpose:** Experimental lease for suspended culture of Quahogs/ Hard clams (*Mercenaria mercenaria*), Soft-shell clams (*Mya arenaria*) and Atlantic Razor clams (*Ensis directus*)

Site Review: Geoffrey Shook, Meryl Grady, Molly Waters

Report Preparation: Geoffrey Shook, Meryl Grady, 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.



**Application Overview**

The applicant, David Wilson, is requesting a 3.94<sup>2</sup>-acre experimental lease in Long Reach, Harpswell, within Casco Bay, for the suspended culture of shellfish. Nylon grow bags and PVC collection boxes are intended to be deployed on the bottom and would be on site year-round unless there is a risk of ice. Predator netting may be used to cover the entire proposed lease area.<sup>3</sup>

**General Characteristics**

On July 26, 2023, Maine Department of Marine Resources (MDMR) scientists assessed the proposed lease site. MDMR scientists arrived on site at approximately 1:57 PM. The proposal is located along the western side of a shallow cove in intertidal waters approximately 182 feet from the shore at mean high water (MHW).<sup>4</sup> The shoreline in the area is rocky with forested uplands. There is a residential area along the western shore of the cove with about 12 houses in the general proximity of the proposal.

**Depth**

On July 26, 2023, MDMR scientists began collecting depths at the proposed site at approximately 2:00 PM. The tide was flooding with the next high tide predicted at 5:55 PM (Table 1). Depths were determined to be between 2.3-3.7 feet. Correcting for tidal variations derives depths at mean low water (MLW, 0.0 feet) to be 0 feet.

**Table 1.** Predicted tidal heights in Harpswell, Maine.<sup>5</sup>

Date	Time	Height (ft)
2023/07/26	5:32 AM	8.1 H
2023/07/26	11:34 AM	1.3 L
2023/07/26	5:55 PM	9.0 H
2023/07/26	NA	NA

**Bottom Characteristics**

MDMR scientists observed the bottom characteristics of the proposed lease site via a drop camera transect. 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 lease site is primarily composed of mud with occasional shell rubble.

<sup>2</sup> Applicant originally requested 4.00 acres. MDMR calculations indicate the area is 3.94 acres.

<sup>3</sup> Application page 14.

<sup>4</sup> At MLW, the western boundary of the proposal is in the intertidal zone so MHW is used as a reference to better describe the layout of the proposal within the waterbody with respect to the shoreline.

<sup>5</sup> <https://www.ussharports.com/harbor/maine/south-harpswell-me/tides/?tide=2023-07#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
Biogenic Substrate	Shell Substrate	Shell Rubble	Clam Rubble

**Position and Distances to Shore**

The geodesic 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).

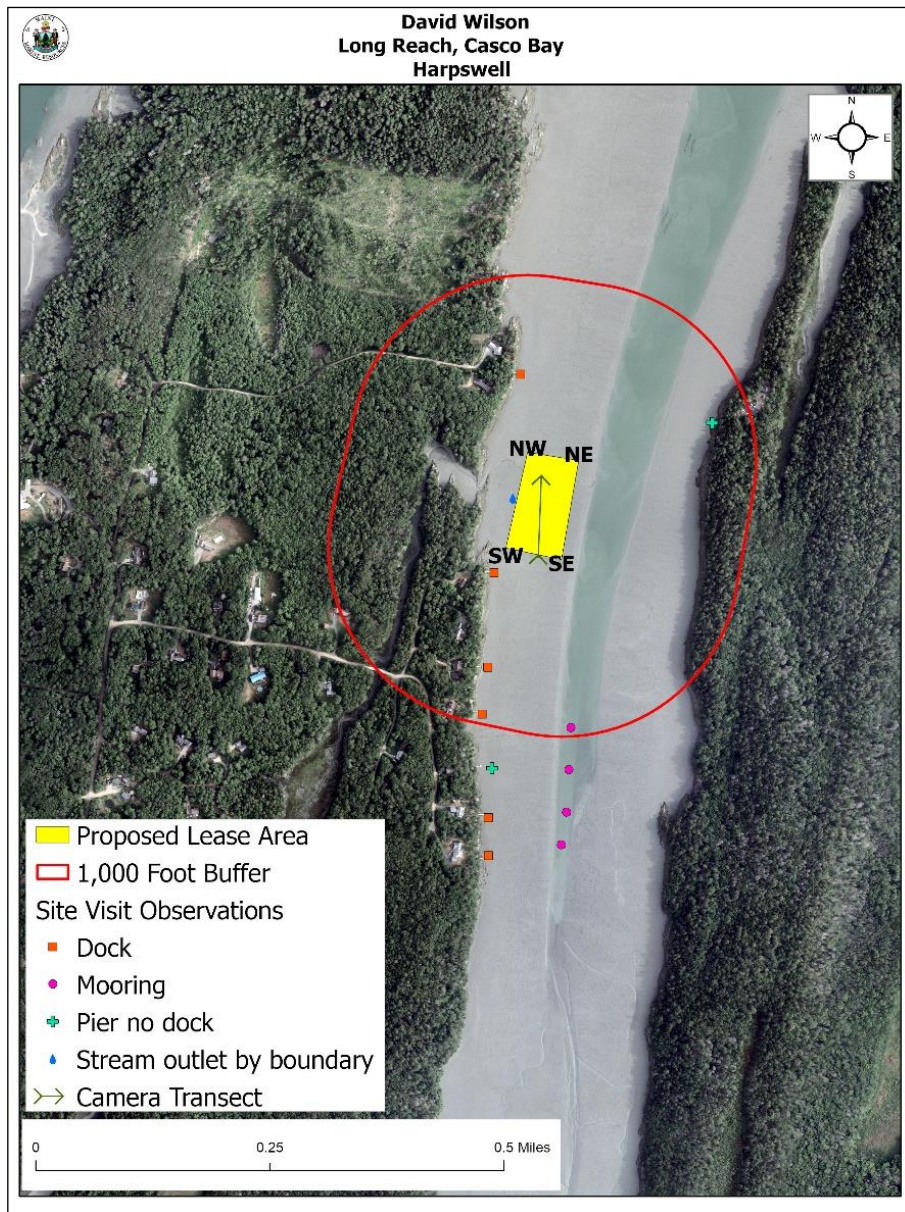
**Application Coordinates (WGS84) – 3.94 Acres**

<u>Corner</u>	<u>Latitude</u>	<u>Longitude</u>	
NW	43.827893°	-69.932648°	then 292.2 feet at 98° True to
NE	43.827775°	-69.931553°	then 568.0 feet at 189° True to
SE	43.826237°	-69.931897°	then 320.3 feet at 279° True to
SW	43.826406°	-69.933088°	then 554.4 feet at 012° True to NW



**Table 3.** Approximate distances from proposal corners to surrounding features (Figure 3).

Feature	Distance
SW corner to western shoreline closest point MHW	~182.0 feet to the west
NE corner to eastern shoreline closest point MLW	~629.0 feet to the east
SE corner to cove southern MLW line	~2,664.4 feet to the south



**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 MDMR's site assessment, scientists observed five piers within 1,000 feet of the proposal. Four piers along the western shore of the cove all had docks attached and one pier on the eastern shore did not have a dock attached. There was one mooring observed within 1,000 feet. Three additional piers and moorings were observed to the south of the proposal beyond 1,000 feet. The nearest dock to the proposal is approximately 158.5 feet to the southwest and the nearest mooring is approximately 950.6 feet to the south.

On May 10, 2022, MDMR received a completed Harbormaster Questionnaire. The local harbormaster indicated that riparian owners should still have appropriate access to their property.

Due to the intertidal location of the proposal, the applicant is required to obtain written consent for use of the intertidal land. The applicant provided this information with the application.<sup>6</sup>

**(2) Navigation**

The proposal is located in at least partially intertidal waters near the western shore of Long Reach. Long Reach has charted areas of intertidal land along the western and southern shores (Figure 3). Based on aerial imagery, there is a narrow channel approximately 90-100 feet to the east of the proposal at MLW. During MDMR's site assessment, scientists observed four moorings to the south of the proposal at the southern end of the navigable waterway (Figure 2). Scientists also observed a jet ski operating to the north in the general vicinity of the site and an air boat navigating to the north.

In the Harbormaster Questionnaire, it was indicated that there should be little to no impact on navigation.

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<sup>6</sup> Application pages 18 and 19

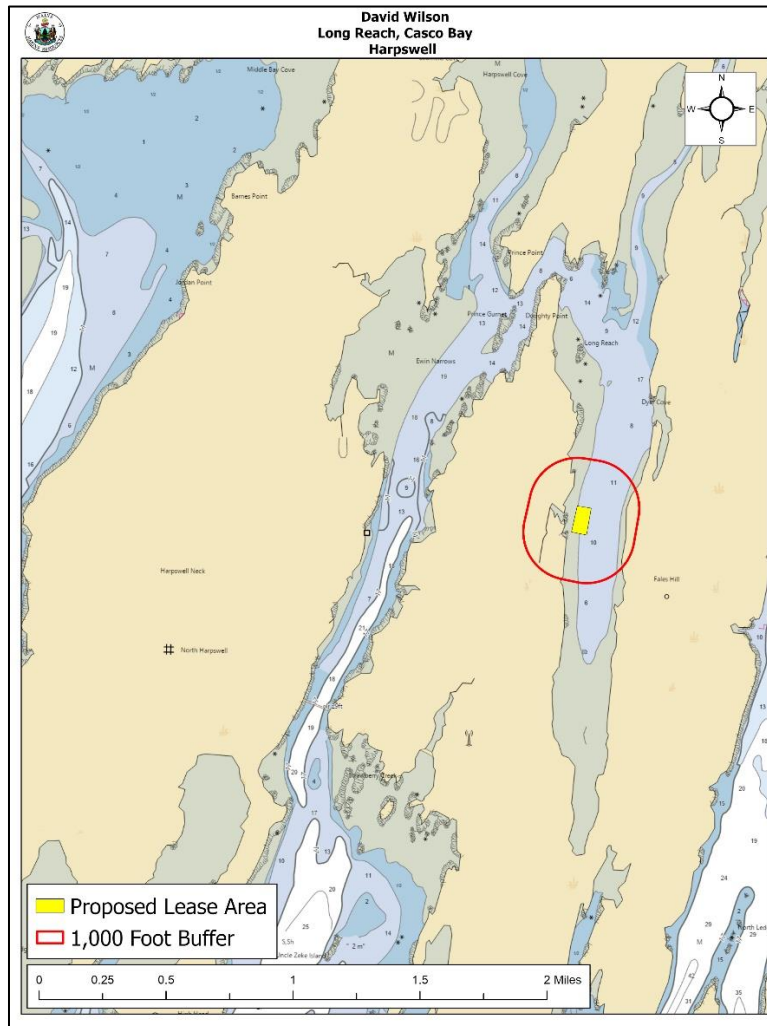


Figure 3. Charted navigational channels in the vicinity of the proposed lease area.

### (3) Fishing and Other Uses

During MDMR’s site assessment, scientists did not observe any fishing activities. However, an airboat was seen navigating to the north from the southern portion of the cove and airboats are sometimes associated with shellfish harvesting activities. Scientists also observed a jet ski operating to the north of the site engaged in what appeared to be recreational activity.

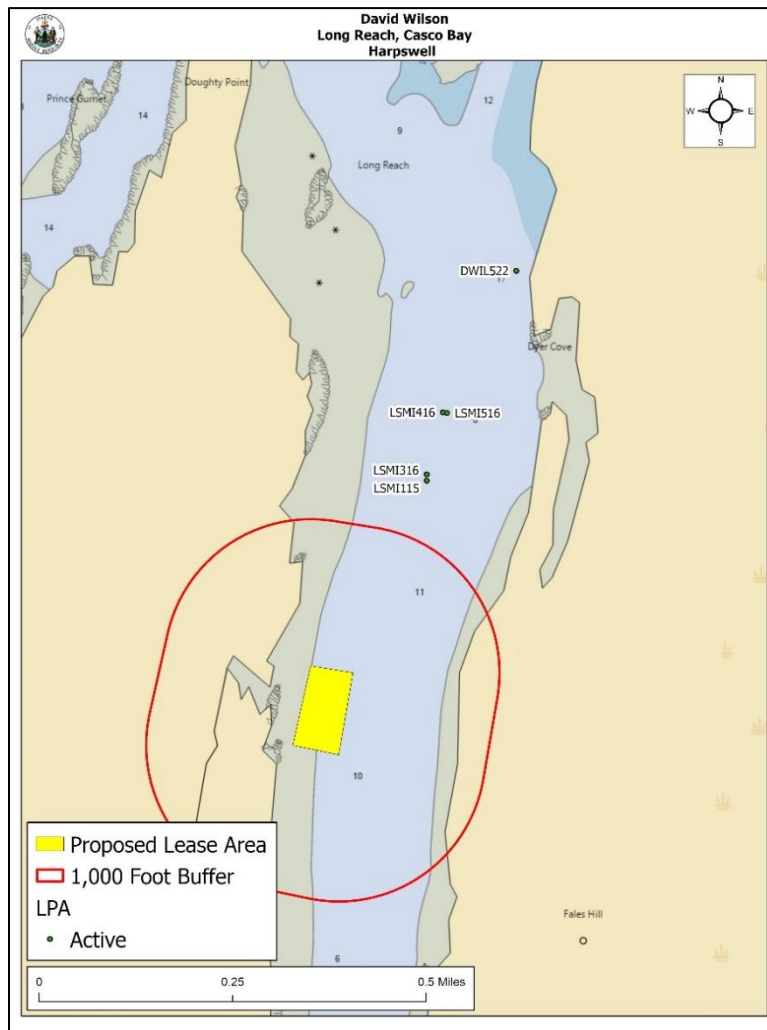
The Harbormaster Questionnaire indicated that both commercial and recreational harvesting occurs in intertidal areas throughout Harpswell but that there is not currently sufficient resource in the general vicinity of the proposal to support the harvesting of shellfish.



The Town of Harpswell has a shellfish conservation program in accordance with 12 M.R.S.A. § 6671 and because the site is located within the intertidal, the applicant is required to obtain consent from the municipality. The applicant provided this permission with the application.<sup>7</sup>

**(4) Other Aquaculture Uses**

There are no active aquaculture leases or Limited Purpose Aquaculture licenses (LPAs) within 1,000 feet of the proposal (Figure 4).



**Figure 4.** LPA licenses in the vicinity of the proposed lease area.

<sup>7</sup> Application page 38



(5) Existing System Support

**Epibenthic Flora and Fauna**

MDMR scientists conducted a transect using a drop camera to assess the epibenthic ecology of the proposed lease. No epibenthic flora or fauna was observed on underwater footage.

**Eelgrass (*Zostera marina*)**

Records of seagrass collected in 2022<sup>8</sup> indicate that there is no mapped eelgrass within 1,000 feet of the proposal or anywhere within Long Reach. The nearest mapped eelgrass is over 3.4 miles to the south. During MDMR’s site assessment, scientists did not observe any eelgrass.

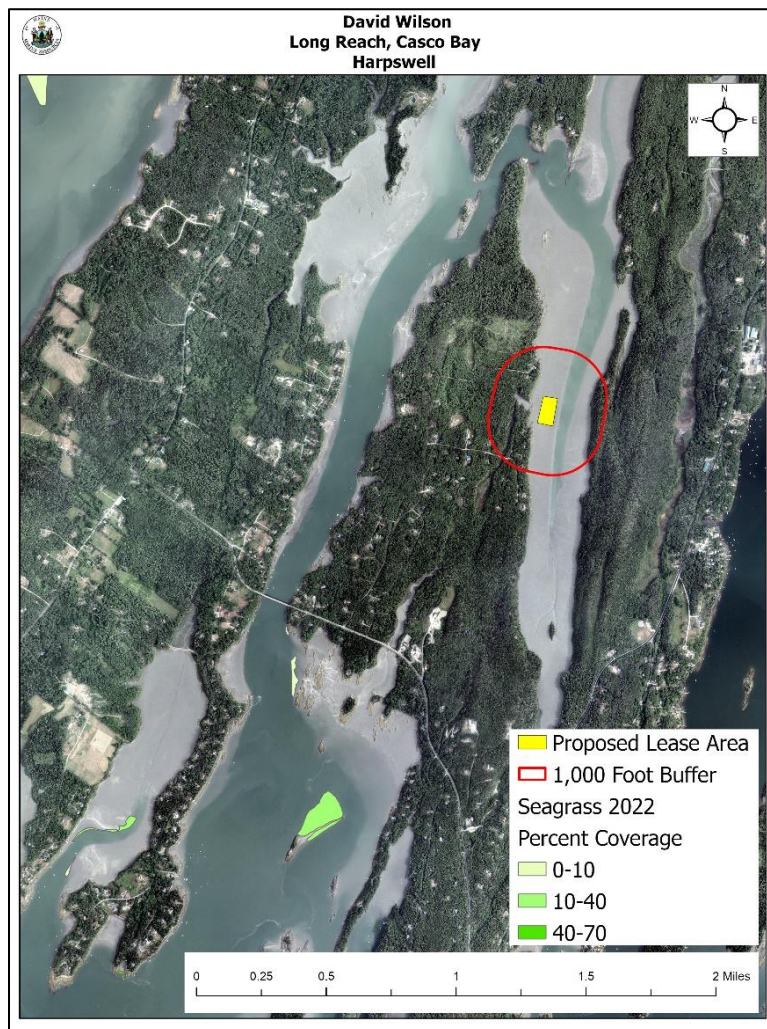


Figure 5. Mapped eelgrass in the vicinity of the proposed lease area.

<sup>8</sup> Data obtained from The Maine Office of GIS “GISVIEW.MEDEP.Seagrass2022”. Widgeon grass was observed only in the New Meadows River area off Old Brunswick Road near shore. 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 entire proposed lease is located within mapped Tidal Waterfowl and Wading Bird Habitat (TWWH). (Figure 6). The nearest mapped bald eagle (*Haliaeetus leucocephalus*) nest is located approximately .84 miles to the northwest of the proposal. On May 16, 2022, a Wildlife Biologist with MDIFW responded by email to a “Request for Agency Review and Comment”, stating that the proposal is within TWWH. It was recommended that the proposal be relocated to an area outside of the resource to avoid impacts on birds and habitat.

During MDMR’s site assessment, scientists observed a great blue heron (*Ardea herodias*), double-crested cormorants (*Nannopterum auritum*), common terns (*Sterna hirundo*), osprey (*Pandion haliaetus*), a bald eagle (*Haliaeetus leucocephalus*) as well as a striped bass (*Morone saxatilis*) in the vicinity of the proposal.

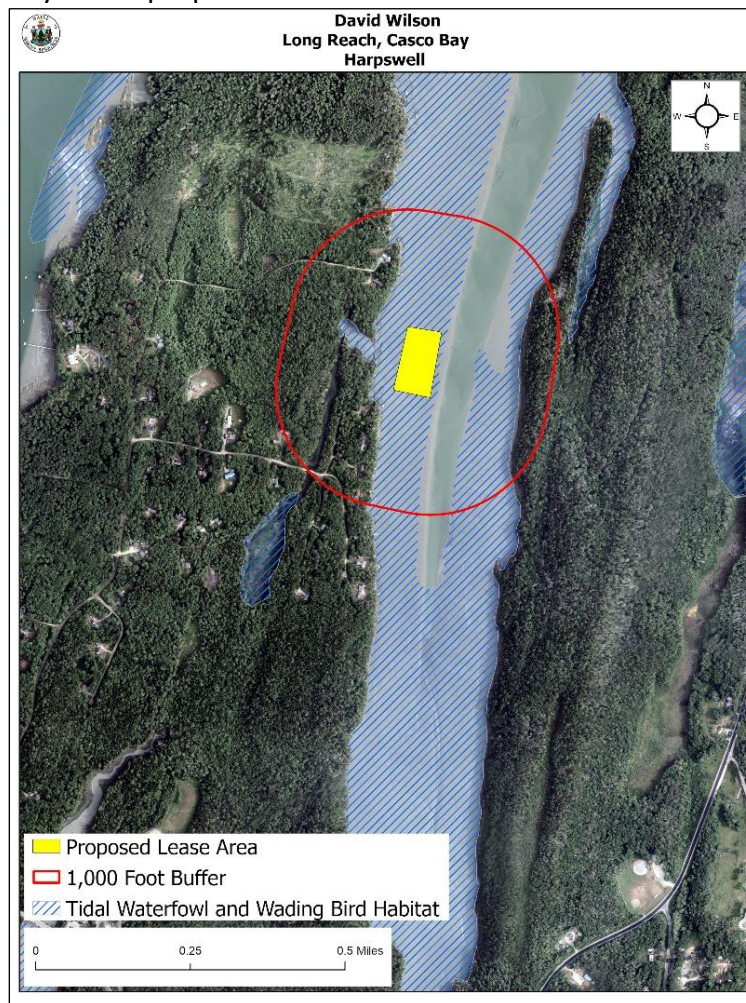


Figure 6. Mapped tidal waterfowl and wading bird habitat.<sup>9</sup>

<sup>9</sup> Data obtained from USFWS “Bald\_Eagle\_Nests\_-\_Maine\_2023” and MDIFW maintained SDE Feature Class “GISVIEW.MEIFW.Twwh”



**Department of Marine Resources  
Site Report**

David Wilson  
Long Reach, Casco Bay  
Harpswell

**(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 located within an area that is currently classified as "Open/Approved" by the MDMR Bureau of Public Health and Aquaculture.

On January 15, 2022, a scientist with the MDMR Bureau of Public Health and Aquaculture (BPHA) responded by email to a "Request for Agency Review and Comment", stating that the culture of Razor clams (*Ensis directus*) would require a biotoxin Memorandum of Understanding (MOU) with the BPHA.