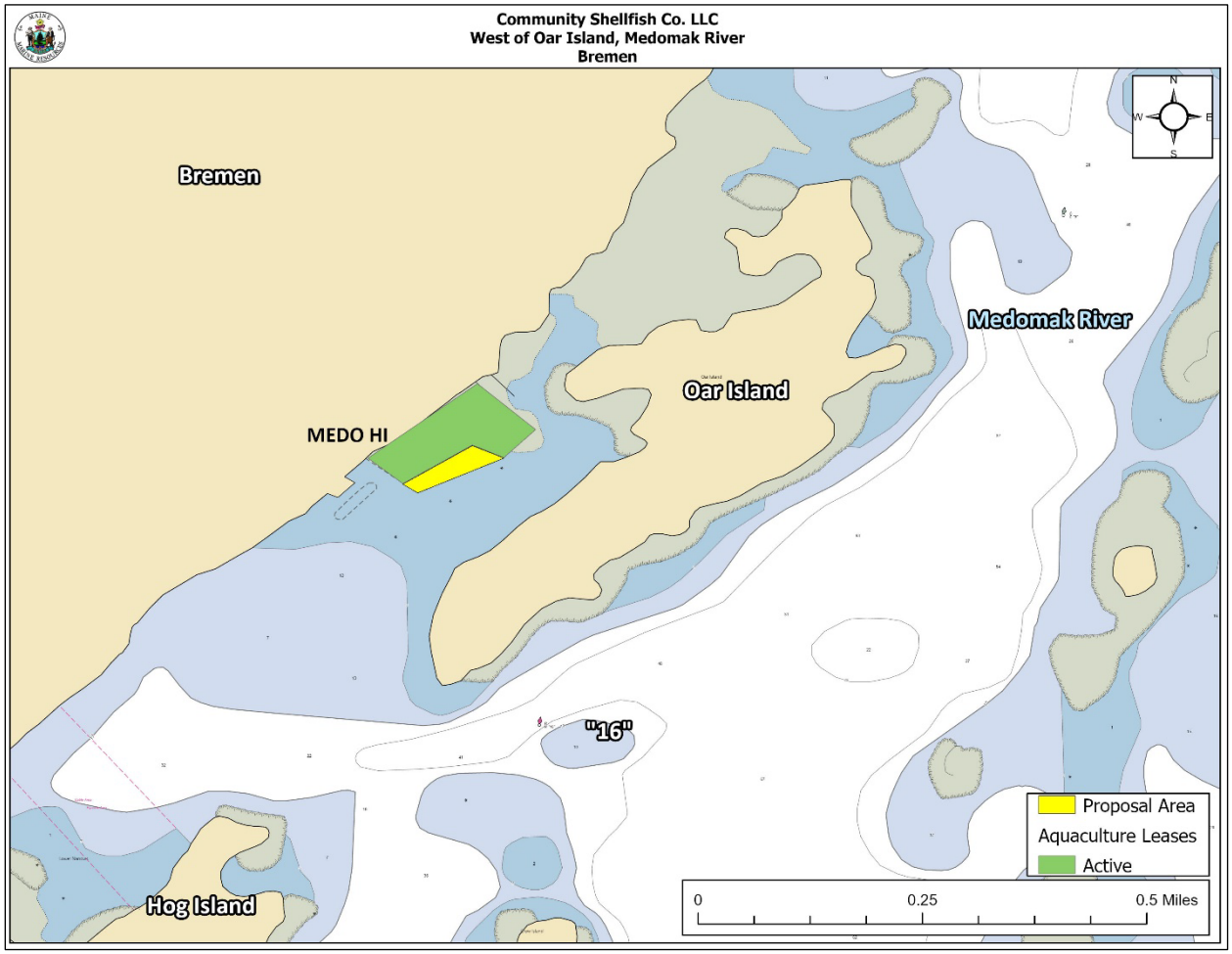

Figure 1. Vicinity map.[1]

Location: West of Oar Island, Medomak River, Bremen, Lincoln County, Maine

Purpose: Lease expansion of standard lease MEDO HI for bottom and suspended culture of American/eastern oysters (*Crassostrea virginica*).

Site Review: Geoffrey Shook and Meryl Grady
Report Preparation: Geoffrey Shook and Meryl Grady

[1] Unless otherwise noted, all figures in this report were created in ArcGIS Pro version 3.3 using digitized NOAA Nautical Charts or geo-referenced aerial photographs provided by The Maine Office of GIS.

Application Overview

The applicant, Community Shellfish Co. LLC, is requesting a 0.96-acre[2] expansion to standard lease MEDO HI. MEDO HI is a 4.15-acre, 20-year standard lease for the bottom and suspended culture of American/eastern oysters (*Crassostrea virginica*), European oysters (*Ostrea edulis*), and northern quahogs (*Mercenaria mercenaria*).[3] The applicant intends for the expansion area to be active year-round, allowing access to colder water outside of the pound that is deep enough to keep sunk cages submerged without air exposure in the winter. This would allow the applicant to harvest and sell oysters year-round.[4]

General Characteristics

On October 1, 2025, Department of Marine Resources (DMR) scientists visited the proposed expansion site. DMR scientists arrived on site at approximately 12:05 PM. The proposal is located in subtidal waters in the Medomak River adjacent to the Bremen shoreline and approximately 335 feet west of Oar Island at MLW (Figure 1). The area surrounding the proposal consists of an old lobster pound immediately to the west where standard lease MEDO HI is located, a working commercial wharf and dock approximately 140 feet to the southwest, a mooring field approximately 113 feet to the south, and Oar Island to the east with a rocky shoreline and forested uplands.

Depth

On October 1, 2025, DMR scientists began collecting depths at the proposed site at approximately 12:15 PM. The tide was ebbing with the next low tide predicted at 12:25 PM (Table 1). Depths were determined to be between 2.9-8.1 feet at the proposal corners. Correcting for tidal variations derives depths at mean low water (MLW, 0.0 feet) to be between 1.0-6.2 feet at the proposal corners. Approximate depths at mean high water (MHW, 9.0 feet[5]) are between 10.0-15.2 feet at the proposal corners (Table 2). Water current was flowing in a northerly direction at the time of the site visit.

Table 1. Predicted tidal heights in Thomaston, Maine.[6]

Date	Time	Height (ft)
2025/10/01	12:14 AM	1.05 L
2025/10/01	06:43 AM	7.15 H
2025/10/01	12:25 PM	1.90 L
2025/10/01	6:51 PM	8.09 H

Table 2. Collected and derived depths at corners of the proposed lease area.

Corner	Measured Depth (ft)	MLW Depth (ft)	MHW Depth (ft)
D	2.9	1.0	10.0
G	4.4	2.5	11.5
F	5.9	4.0	13.0
E	8.1	6.2	15.2

[2] Applicant originally requested 1.00 acres. DMR calculations indicate the area is 0.96 acres.
[3] Executed lease decision page 1
[4] Application page 6, 12, 14
[5] MHW in Thomaston, ME is 9.0 feet, NOAA Tide Station 8415709
[6] https://tidesandcurrents.noaa.gov/stationhome.html?id=8415709

Bottom Characteristics

DMR 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 3). Sediment information was determined based on visual analysis of the video. The bottom of the proposed lease site is primarily composed of mud and sandy mud with areas of shell rubble and shell hash.

Table 3. Bottom characteristics of the proposed site.

Substrate Origin	Substrate Class	Substrate Subclass	Substrate Group
Geologic Substrate	Unconsolidated Mineral Substrate	Fine Unconsolidated Substrate	Mud
Geologic Substrate	Unconsolidated Mineral Substrate	Fine Unconsolidated Substrate	Sandy mud
Biogenic Substrate	Shell Substrate	Shell Rubble	Not Classified
Biogenic Substrate	Shell Substrate	Shell Hash	Not Classified

Position and Distances to Shore

The geodesic measuring tool in ArcGIS Pro 3.5 was used to verify the distances and bearings between proposed lease corners. Distances to shore were determined using the measuring tool in ArcGIS Pro 3.5, a nautical chart provided by the National Oceanic and Atmospheric Administration (NOAA), and the application coordinates (Table 4, Figure 2,3).

Application Coordinates (WGS84) – 0.96 Acres

Corner	Latitude	Longitude	
D	43.985390°	-69.412780°	then 153 feet at 118° True to
G	43.985190°	-69.412270°	then 419 feet at 241° True to
F	43.984629°	-69.413660°	then 81 feet at 310° True to
E	43.984770°	-69.413900°	then 371 feet at 51° True to D

Table 4. Approximate distances from proposal corners to surrounding features (Figure 2,3).

Feature	Distance
Corner G to Oar Island at MLW	~335’ to northwest
Corner G to charted intertidal mudflat at MLW	~49’ to the north
Corner F to Oar Island at MLW	~451’ to the east
Corner F to Hog Island at MLW	~1,983’ to the south
Corner E to Hog Island at MLW	~2,012’ to the south
Corner E to mapped lobster pound SE corner	~45’ to the west-northwest
Corner E to shipwreck/breakwater	~112’ to the west-southwest
Corner D to mapped lobster pound nearest point	~32’ to the west-northwest

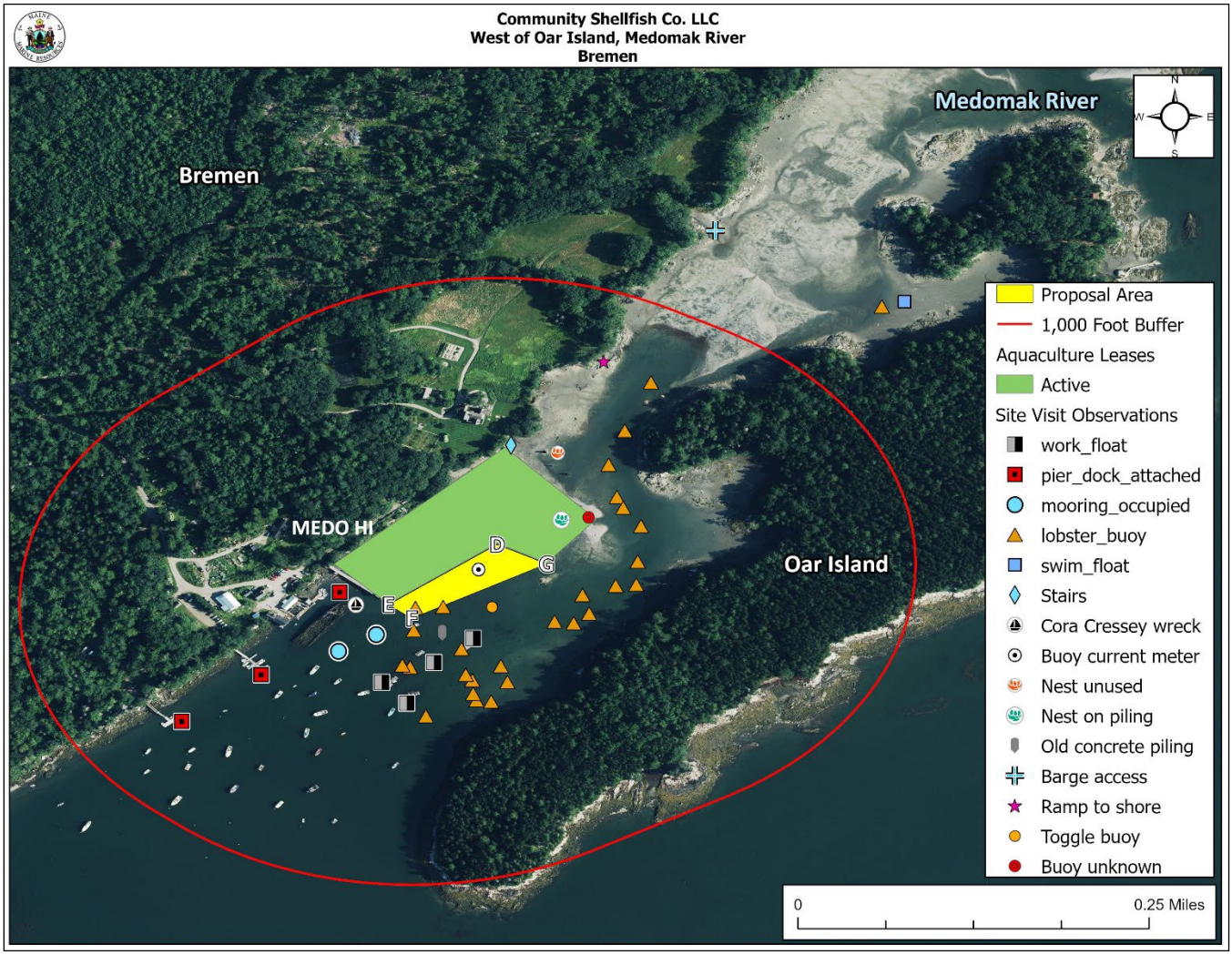

Figure 2. Proposed lease area with site visit observations.

Pursuant to statute and regulation, aquaculture leases are evaluated in consideration of applicable decision criteria. The Site Report documents DMR'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, DMR scientists observed an old lobster pound immediately adjacent to the proposal area. The lobster pound is owned by the applicant and is currently part of MEDO HI. A set of stairs leading to the shoreline was observed on the shore approximately 375 feet north of the proposal. A working dock and associated boat access/storage dock were observed approximately 140 feet to the west and 434 feet southwest, respectively. These facilities are part of the Bremen Lobster Coop Working Waterfront. A pier and dock associated with the Kieve

Wavus Education program was observed approximately 711 feet to the southwest. A mooring field containing over 30 moorings was observed beginning approximately 113 feet to the west southwest of the proposal (Figure 2). At the time of the site visit, the majority of moorings were occupied, and the majority of those occupied moorings were commercial lobster boats.

A Municipal Questionnaire was sent by DMR to the Town of Bremen on August 26, 2025. No response was received.

(2) Navigation

The proposal is located in subtidal waters, in an area known as the Keene Narrows, between the Bremen shoreline immediately to the west at MLW and Oar Island approximately 335 feet to the east at MLW. The narrows north of the proposal is navigable at some tidal stages but is tidally restricted. An intertidal flat is charted approximately 45 feet to the north and additional hazards are charted in the general vicinity to the east of the proposal (Figure 1). The primary navigational channel for the area is a marked channel approximately 1,490 feet to the south between the Bremen shoreline and the northern tip of Hog Island. This channel is for traffic to/from western Muscongus Bay into the Medomak River. An additional unmarked navigable waterway exists to the south of the proposal and east of Hog Island for traffic coming from/to central and eastern Muscongus Bay (Figure 3).

During the site visit, DMR scientists observed two lobster boats navigating through the mooring field and to the working wharf to the southwest of the proposal. DMR scientists took depth readings in the Keene Narrows channel to the north of the site and recorded a depth of approximately 4.9 feet in the charted tidal waterway to north of the proposal. Correcting for tidal variations derives a depth of approximately 3.0 feet at MLW.

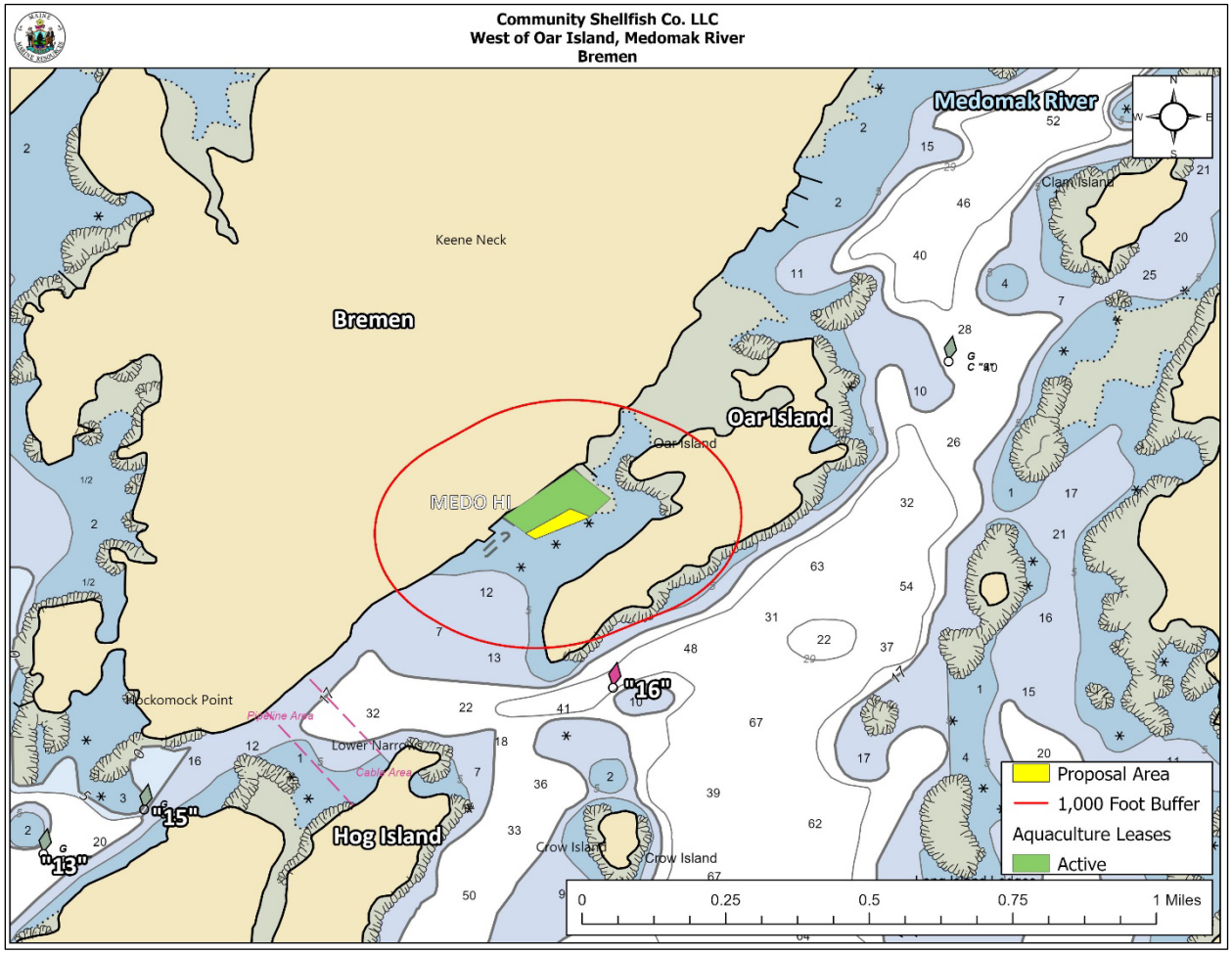

Figure 3. Navigational channels in the vicinity of the proposed lease area.

(3) Fishing and Other Uses

During DMR's site visit, scientists observed 28 lobster buoys within the vicinity of the proposal with one located within the proposal boundaries. DMR scientists observed one lobster boat actively fishing in the vicinity of the proposal to the east and north of the proposal. No other fishing was observed in the vicinity of the proposal.

The wharf and dock observed approximately 140 feet and 434 feet to the west and southwest of the proposal is part of the Bremen Lobster Pound Co-op and is a commercial working dock and access point for local fisherman.

Located approximately 711 feet to the southwest is a pier and dock associated with the Kieve Wavus Education program. The organization uses the property and dock for educational programs and boat tours.[7]

[7] https://www.kwe.org/events/facilities

(4) Other Aquaculture Uses

There is one aquaculture lease within 1,000 feet of the proposal. MEDO HI is adjacent to the proposal to the north and west and is leased to the applicant, Community Shellfish Co. LLC (Figure 4). The proposal area is intended as an expansion to MEDO HI making the total lease area 5.11 acres if the proposal is granted.[8] There are no Limited Purpose Aquaculture (LPA) sites within 1,000 feet of the proposed expansion.

At the time of the site visit, DMR scientists observed aquaculture gear adjacent to the proposal within the old lobster pound that is part of MEDO HI (Figure 2). DMR scientists did not enter the lobster pound to take GPS waypoints for observed aquaculture gear.

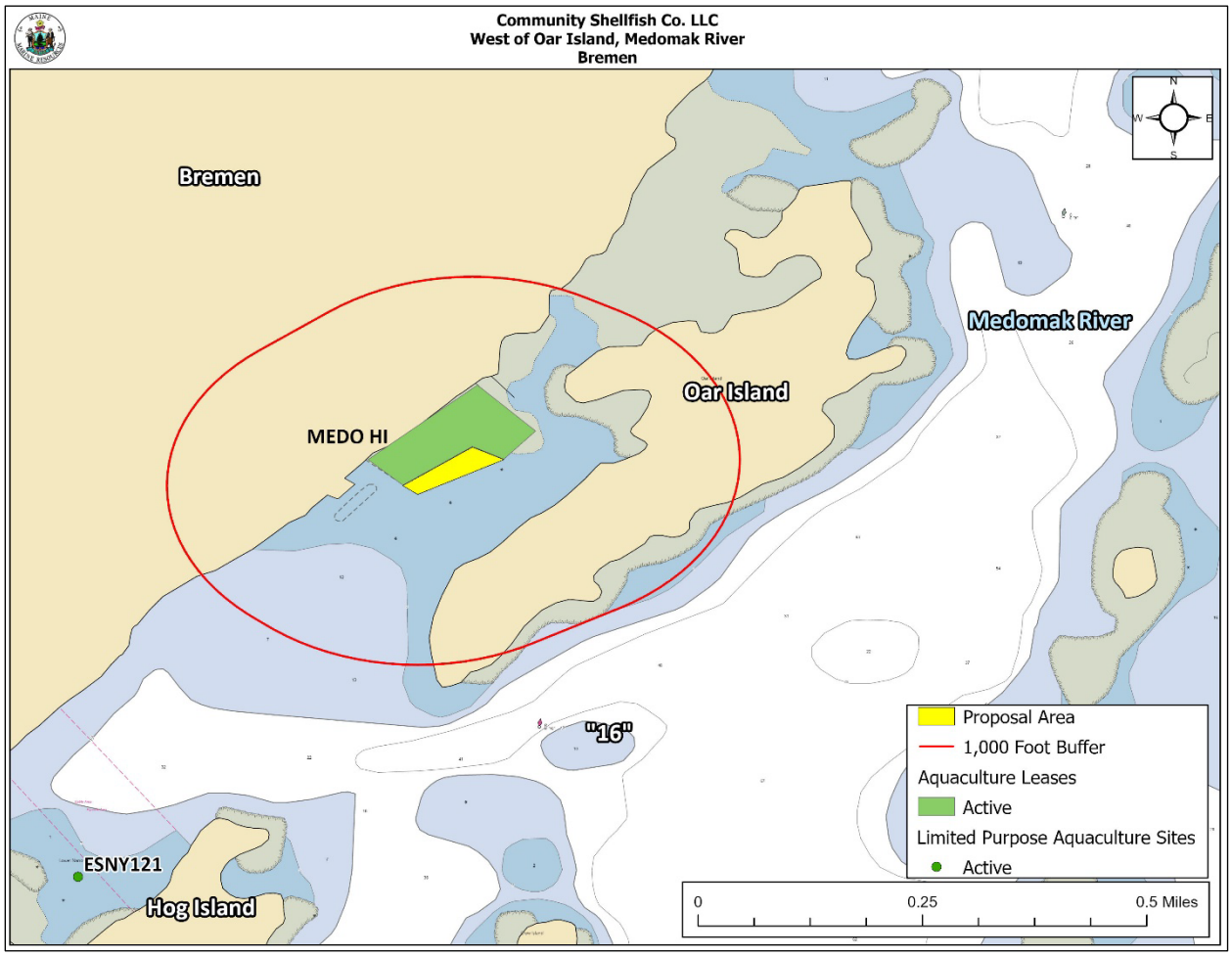

Figure 4. Aquaculture leases and LPA licenses in the vicinity of the proposed lease area.

[8]Calculated total lease area is MEDO HI at 4.15 acres based on the Lease Decision (EXECUTEDDECISION_MEDOHI_CommunityShellfish.pdf) plus the 0.96 acre expansion as measured by DMR.

(5) Existing System Support

Epibenthic Flora and Fauna

DMR 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 footage is described below in Table 5.

Table 5. Species observed on underwater video footage.

Species Observed	Abundance
Moon snail (*Euspira heros*)	Rare
European oyster (*Ostrea edulis*)	Rare
Green crab (*Carcinus maenas*)	Occasional
Colonial tunicate (*Didemnum vexillum*)	Occasional
Siphoned feather weed (*Dasysiphonia japonica*)	Occasional
Hermit crab (*Pagurus* sp.)	Common
Common periwinkle (*Littorina littorea*)	Common

Eelgrass (*Zostera marina*)

Records of seagrass collected by the Department of Environmental Protection (DEP) in 2023[9] indicate there is eelgrass mapped within 1,000 feet of the proposed expansion. The nearest mapped eelgrass is approximately 63 feet southeast of the proposal (Figure 5).

During DMR's site visit, scientists conducted a search for eelgrass within the boundaries of the proposal. DMR scientists observed unattached eelgrass floating on the surface of the water within the vicinity of the proposal but did not observe any eelgrass attached to the seafloor within the boundaries of the proposal on underwater footage.

[9]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.

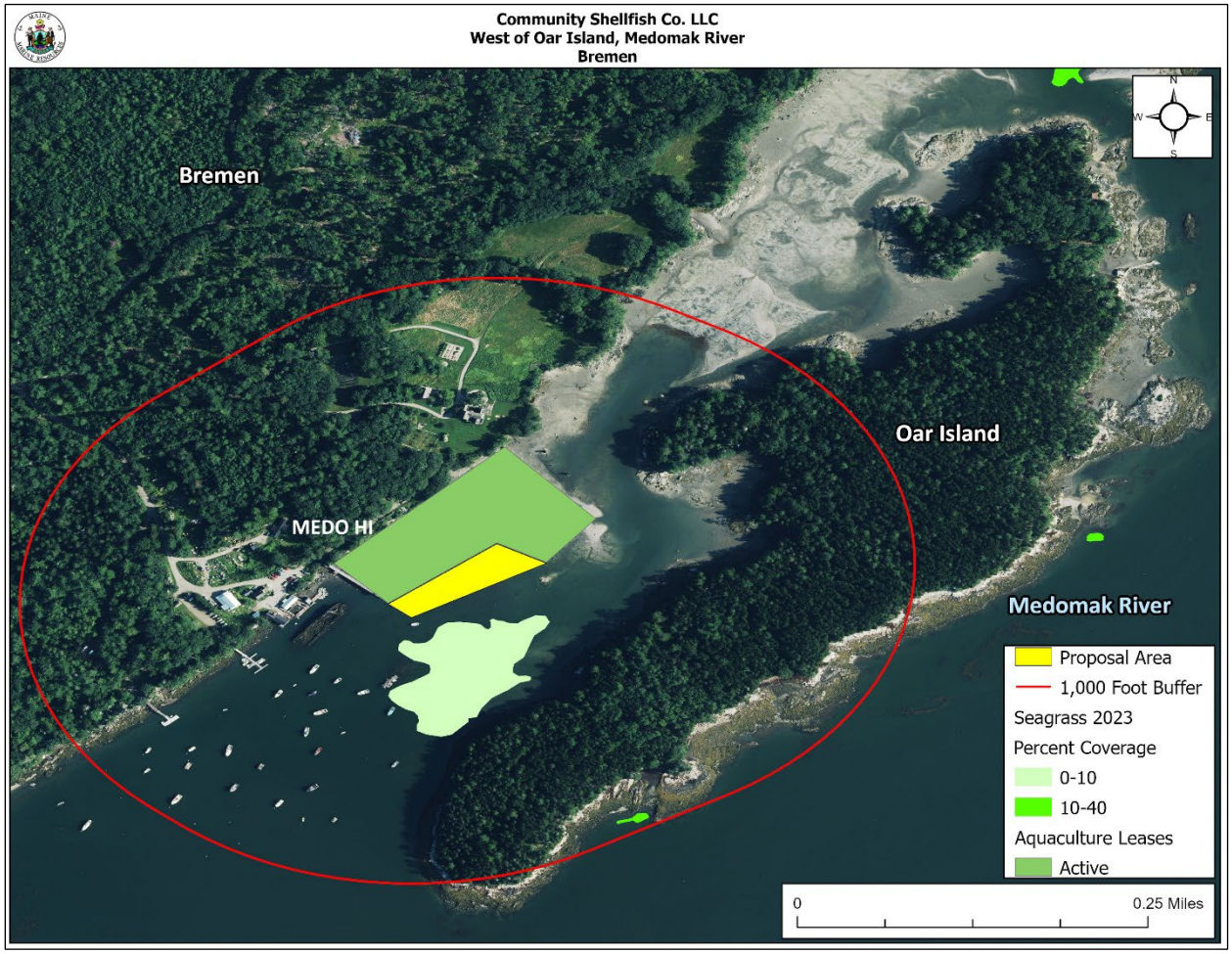

Figure 5. Mapped eelgrass (*Z. marina*) in the vicinity of the proposed lease area.

Wildlife

During the site visit, DMR scientists observed herring gulls (*Larus argentatus*), laughing gulls (*Leucophaeus atricilla*), double crested cormorants (*Nannopterum auritum*), great blue heron (*Ardea herodias*), and black guillemot (*Cepphus grylle*) in the vicinity of the proposal. DMR scientists also observed two bird nests in the vicinity of the proposal. One nest, which appeared to be recently used, was observed on a piling approximately 170 feet to the north of the proposal. A second nest that did not appear to be recently used was approximately 383 feet to the north of the proposal (Images 1 and 2).

Images 1 (left) and 2 (right). The nests observed during DMR's site visit.

The Department of Inland Fisheries and Wildlife (IFW) has jurisdiction over inland fisheries and wildlife resources of the State. IFW also has the authority to conserve wildlife populations and their ecosystems through applicable state laws and rules. DMR provides IFW with notice and the opportunity to comment on all complete lease applications. In addition, the Site Report also includes IFW designated and mapped habitat types that are within 1,000 feet of the lease proposal, if applicable.

According to Geographic Information System (GIS) data maintained by IFW and available through the Maine Office of GIS (MEGIS), there is one mapped habitat type within 1,000 feet of the lease expansion proposal. The proposal is within Tidal Waterfowl/Wading bird Habitat (TWWH), which is a type of Significant Wildlife Habitat designated and regulated by IFW.[10] Based on data maintained by IFW, the proposal is located almost entirely within TWWH (Figure 6).

Though bald eagles are no longer listed on Maine's Endangered and Threatened Species List, the United States Fish and Wildlife Service (USFWS) may also have jurisdiction over the management and conservation of the species based on applicable law and rule. Data collected by USFWS in 2023 by aerial nest survey shows there is no mapped bald eagle nesting sites approximately within 1,000 feet of the proposal (Figure 6).

[10] https://www.maine.gov/ifw/programs-resources/environmental-review/significant.html

IFW was provided with the opportunity to comment on this proposal. DMR did not receive a response.[11]

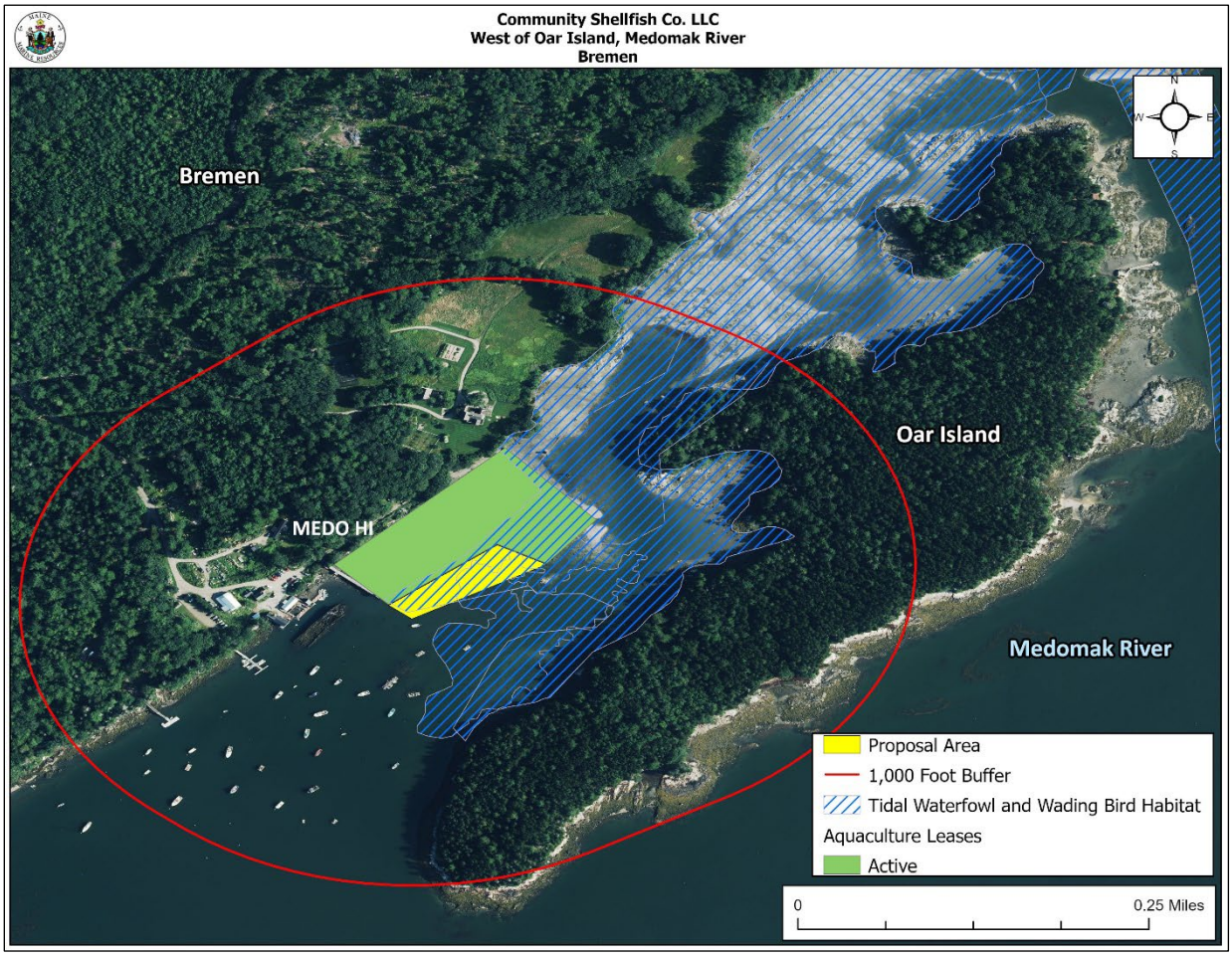

Figure 6. Mapped habitats in the vicinity of the proposed lease area. [12]

(6) Interference with Public Facilities

The proposed lease expansion is not within 1,000 feet of any beach, park, docking facility, or conserved land owned by federal, state, or municipal governments. Approximately 27 acres of Oar Island, located approximately 335 feet east of the proposal, is privately owned[13] with a conservation easement held by IFW. The conserved land directly to the north and west of the proposed lease is the Bremen Lobster Co-op. The land is owned by the applicant.[14] DMR holds

[11] Email correspondence between IFW and DMR
[12] Data obtained from USFWS "Bald_Eagle_Nests_-_Maine_2023" and IFW "EHRTERN", "EHPLVTRN", "GISVIEW.MEIFW.Twwh", "ShorebirdAreas", and "SNI".
[13] Application page 11, Bremen parcel 4-1-1
[14] Application page 11, Bremen parcel 4-9A

a conservation easement, and it is designated as "Working Waterfront" conserved to specifically allow fishermen and others who work on the water an access point.[15]

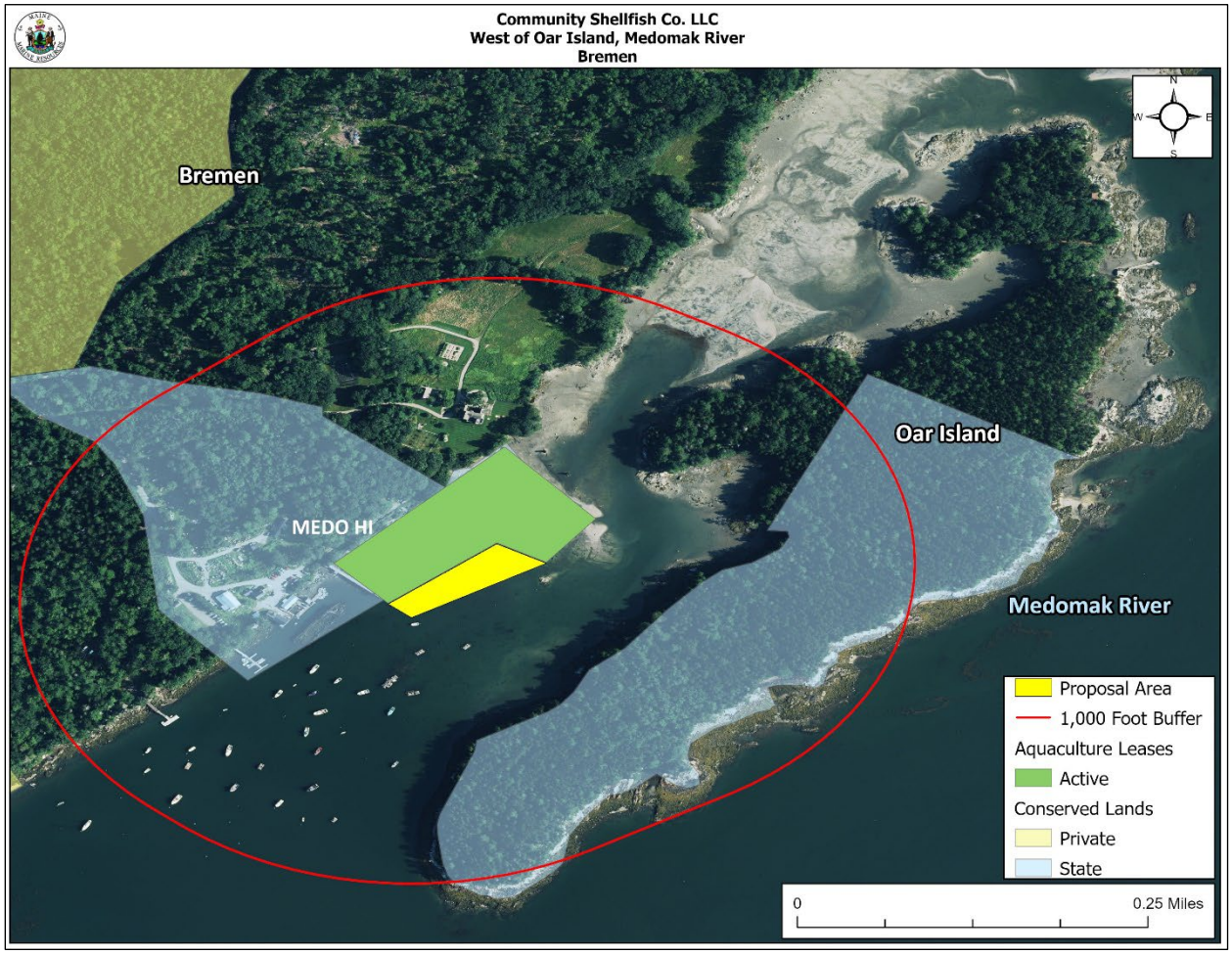

Figure 7. Mapped conserved lands in the vicinity of the proposed lease area

(7) Water Quality

The proposed lease expansion is currently located within an area classified as Approved by the DMR Bureau of Public Health and Aquaculture.

[15] Conservation Lands in Maine: Publications and Maps: Bureau of Parks and Lands: Maine ACF