

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

**Location:** Days Cove, Damariscotta River, Damariscotta, Lincoln County, Maine

**Purpose:** Standard lease for suspended culture of American/eastern oysters (*Crassostrea virginica*), bay scallops (*Argopecten irradians*), soft-shell clams (*Mya arenaria*), and Atlantic surf clams (*Spisula solidissima*)

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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.



**Application Overview**

The applicant, Mook Sea Farms Inc., is requesting a 3.85<sup>2</sup> acre standard lease west of Miles Memorial Hospital in Days Cove, Damariscotta River in the Town of Damariscotta for the suspended culture of shellfish. The applicant is proposing to deploy Zapco Tumbler tubes from rebar staples.<sup>3</sup> The applicant currently operates experimental lease DAM DCx within the footprint of the standard lease proposal (Figure 4).

**General Characteristics**

On August 9, 2023, Maine Department of Marine Resources (MDMR) scientists assessed the proposed lease site. MDMR scientists arrived on site at approximately 12:38 PM. The proposal is situated in shallow subtidal waters of Days Cove. The surrounding area is both commercially and residentially developed containing residential homes, a hospital, and a senior living facility on the eastern shoreline. Expansive mudflats, which are tidally exposed, lie to the north and east of the proposal. There is a mooring field to the northwest of the proposed lease area.

**Depth**

On August 9, 2023, MDMR scientists began collecting depths at the proposed site at approximately 12:41 PM, which was at low tide (Table 1). Depths were collected at the proposal corners and determined to be between 1.5 and 2.4 feet. Correcting for tidal variations derives water depths to be approximately 0.5 to 1.4 feet at mean low water (MLW, 0.0 feet) (Table 1).

**Table 1.** Predicted tidal heights in Newcastle, Maine.<sup>4</sup>

Date	Time	Height (ft)
2023/08/09	12:20 AM	0.3 L
2023/08/09	6:25 AM	9.0 H
2023/08/09	12:32 PM	1.0 L
2023/08/09	6:46 PM	10.0 H

**Bottom Characteristics**

MDMR 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 2). Sediment information was determined based on visual analysis of the video. The bottom of the proposed lease site is primarily composed of mud.

**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

<sup>2</sup> Applicant originally requested 4.0 acres. MDMR calculations indicate the area is 3.85 acres.

<sup>3</sup> Application page 4,6

<sup>4</sup> <https://www.usharbors.com/harbor/maine/newcastle-me/tides/?tide=2023-08#monthly-tide-chart>



**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) – 3.85 Acres**

<u>Corner</u>	<u>Latitude</u>	<u>Longitude</u>	
1	44.025708°	-69.535558°	then 555.7 feet at 47° True to
2	44.026733°	-69.533994°	then 303.9 feet at 122° True to
3	44.026286°	-69.533019°	then 569.9 feet at 227° True to
4	44.025217°	-69.534600°	then 309.3 feet at 306° True to 1

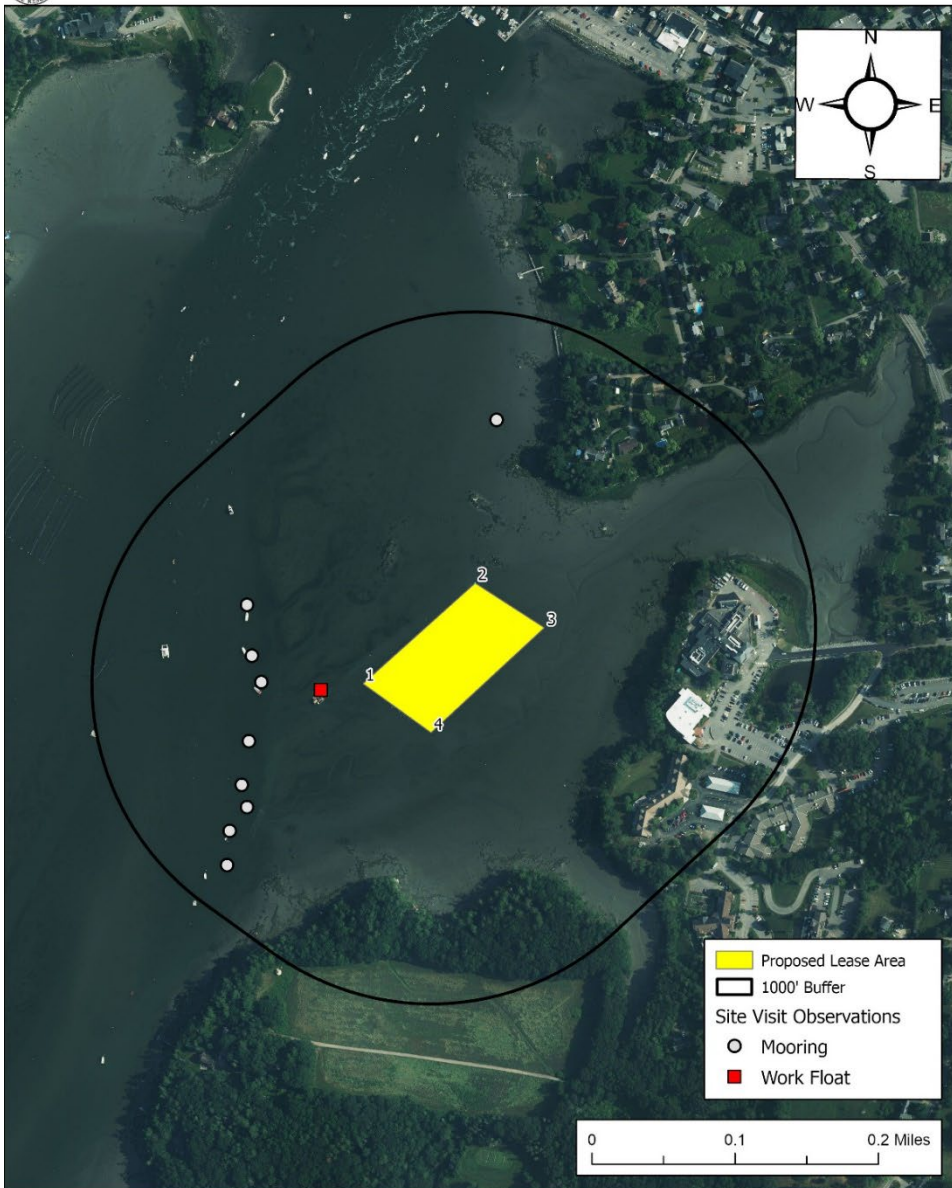
**Table 3.** Approximate distances from proposal corners to surrounding features (Figure 3).<sup>5</sup>

Feature	Distance
Corner 1 to marked navigational channel	~390' to the west
Corner 2 to nearest point at MHW	~460' to the northeast
Corner 3 to nearest point at MHW	~435' to the southeast
Corner 4 to nearest point at MHW	~550' to the south

<sup>5</sup> Corners 2, 3, and 4 are charted in the intertidal, but are subtidal following field verification/site visit. The corners are located very close to MLW so MHW is used as a reference in Table 3.



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**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 the site visit on August 9, 2023, MDMR observed nine moorings in the vicinity of the proposed lease. Many of the moorings were located to the west of the proposal in a designated mooring field. The moorings were occupied with a variety of small power boats, sailboats, and



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one commercial fishing vessel. MDMR did not observe any riparian docks within 1,000 feet of the proposal at the time of the site visit. One work float was observed 160 feet to the southwest of the proposal. The work float was associated with the applicant's experimental lease DAM DCx (Image 1) (Figure 2).

The applicant intends to utilize a work barge during the months of May through November. The barge would be located outside of the proposed lease boundaries on a mooring registered by the town.<sup>6</sup>

A Harbormaster Questionnaire was completed by the local harbormaster and submitted to the MDMR Aquaculture Division on February 2, 2023. The harbormaster indicated that the proposal should not impact riparian ingress and egress, and there are no permitted moorings within the proposed lease boundaries.



**Image 1.** Work float observed during MDMR's site assessment.

### (2) Navigation

The proposal is located in shallow water within Days Cove. At lower tidal stages, navigation within and around the proposed lease is limited due to shallow water depths of approximately one foot at MLW. The main navigational channel is located approximately 400 feet west of the proposal (Figure 3). Most vessels transiting the Damariscotta River utilize the main navigational channel.

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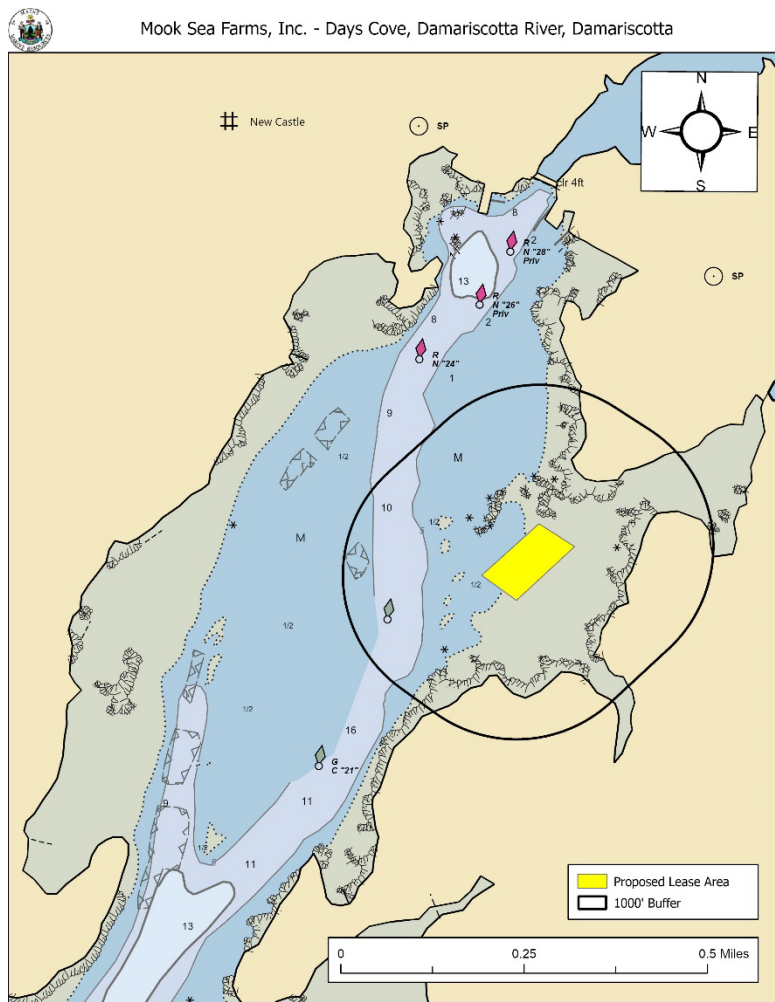
<sup>6</sup> Application page 5



MDMR did not observe any vessels operating in the vicinity of the proposal during the site assessment. Though, while underway to and from the site visit, MDMR observed a variety of vessels utilizing the main navigational channel in the vicinity of the proposal.

The applicant indicated that since the proposed lease will have gear protruding from the ground and only visible at lower tidal stages, in addition to lease boundary markers, they will place a sign on the western border of the lease warning mariners of the submerged gear.<sup>7</sup> MDMR scientists observed this sign marking the applicant’s experimental lease (DAM DCx) during the site assessment.

The harbormaster indicated in the Harbormaster Questionnaire that the proposal should have no effect on navigation or storm anchorages in the area.



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

<sup>7</sup> Application page 6



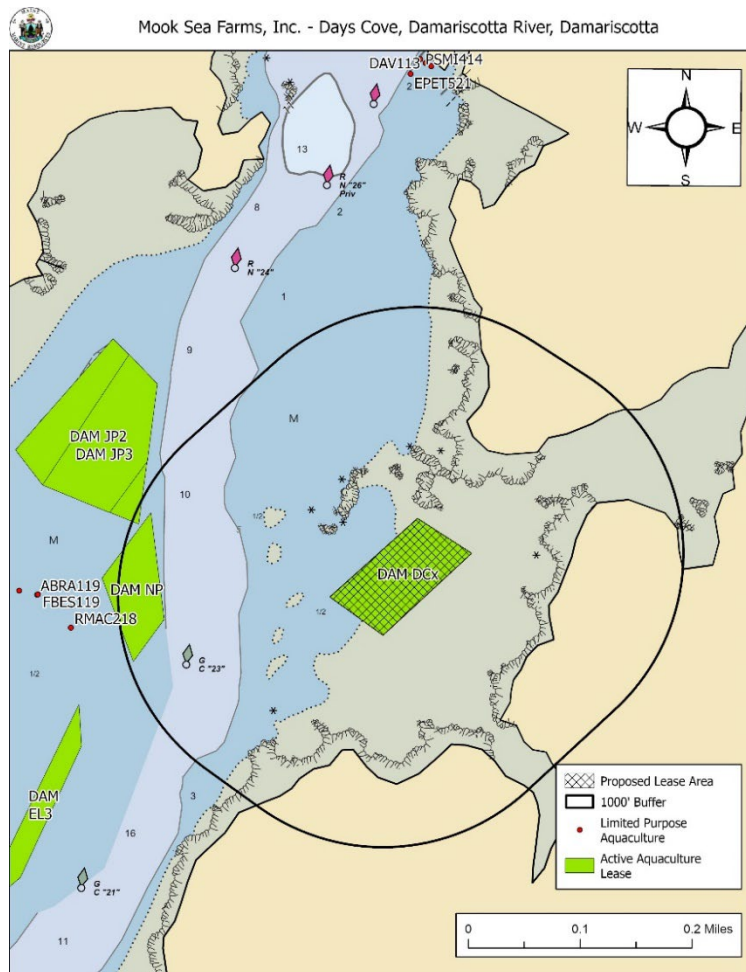
**(3) Fishing and Other Uses**

During MDMR’s site assessment, no commercial or recreational fishing activity was observed within the boundaries of the proposed lease.

The harbormaster indicated in the Harbormaster Questionnaire that there is no commercial fishing in the proposed lease area. There is occasional recreational fishing in the summer months.

**(4) Other Aquaculture Uses**

The applicant currently operates experimental lease DAM DCx within the boundaries of this proposal. This standard lease proposal is intended to replace DAM DCx. There are two aquaculture leases within 1,000 feet of this proposal. DAM NP is held by Eric Peters and licensed for bottom and suspended culture. DAM JP2 is held by Glidden Point Oyster Company Inc. and licensed for bottom culture only. DAM JP3, which is 1,075 feet northeast of the proposal, is also held by Glidden Point Oyster Company Inc. and is licensed for bottom and suspended culture. There are no limited purpose aquaculture (LPA) sites within 1,000 feet of the proposed lease site (Figure 4).



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



**(5) Existing System Support**

**Epibenthic Flora and Fauna**

MDMR 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 transect is described below in Table 4.

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

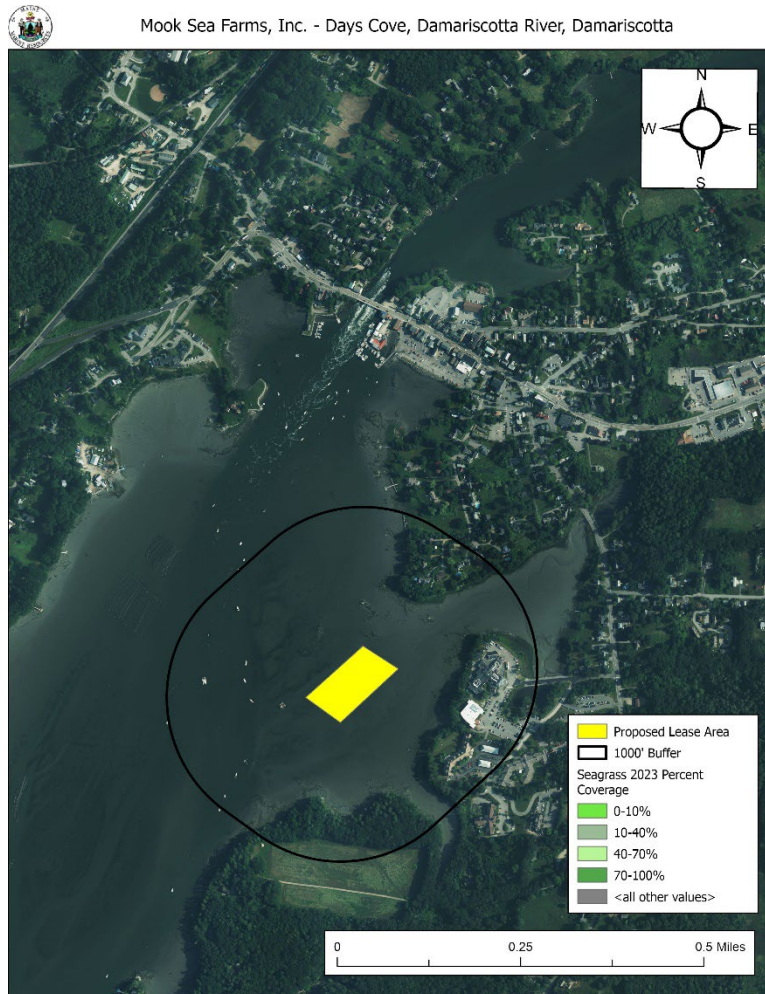
Species Observed	Abundance
Green Crab ( <i>Carcinus maenas</i> )	Common
Sand Shrimp ( <i>Crangon septemspinosa</i> )	Occasional
Hermit Crab ( <i>Pagurus sp.</i> )	Common





**Eelgrass (*Zostera marina*)**

Records of eelgrass collected by Maine Department of Environmental Protection (MDEP) in 2023 indicate no mapped eelgrass presence in the vicinity of the proposal (Figure 5).<sup>8</sup> The nearest mapped eelgrass is 1.5 miles upriver in the Great Salt Bay. No eelgrass was observed within the proposal boundaries during MDMR’s site assessment.



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

**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 adjacent to, and slightly within, mapped Tidal Waterfowl and Wading Bird Habitat (TWWH). Corners 2 and 3 are located within TWWH by approximately 10-15 feet. Data

<sup>8</sup> 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.



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 0.85 miles southwest of the proposal (Figure 6).

On November 15, 2022, a Wildlife Biologist with MDIFW responded by email to a “Request for Agency Review and Comment” stating that portions of the proposed lease intersect with mapped TWWH, and it is recommended that the lease be located in deeper water to not utilize the TWWH.<sup>9</sup>

During the site assessment, MDMR scientists observed double crested cormorant (*Nannopterum auritum*), common tern (*Sterna hirundo*), great blue heron (*Ardea herodias*), herring gull (*Larus argentatus*), and osprey (*Pandion haliaetus*) in the vicinity of the proposed lease.

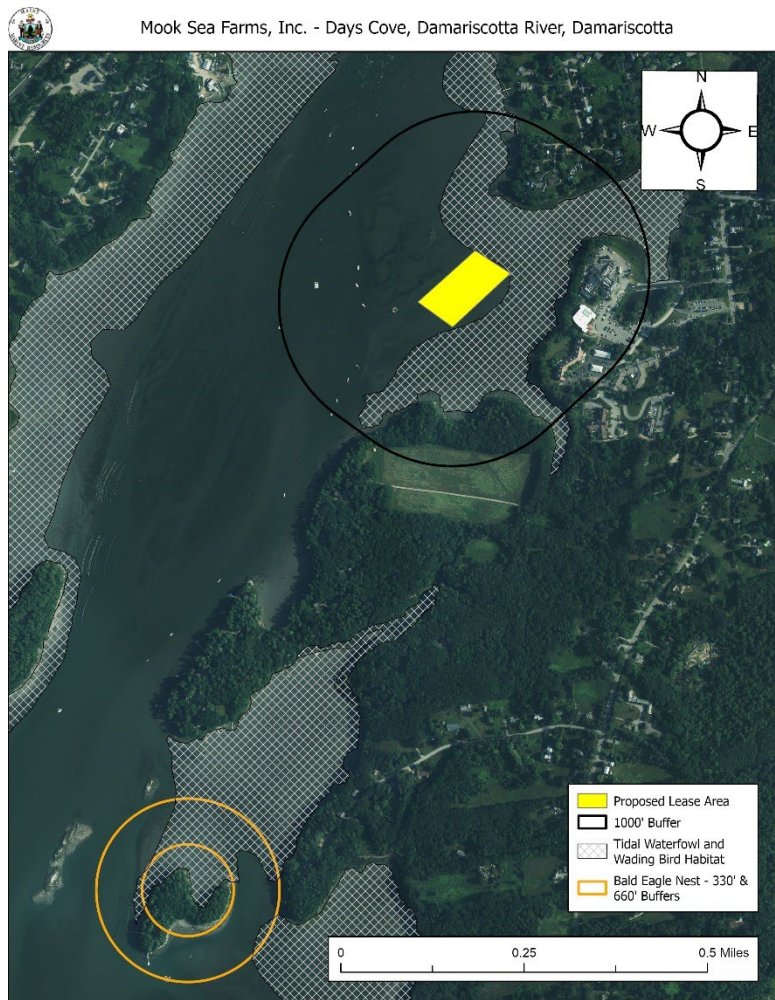


Figure 6. Mapped bald eagle nests and Tidal Waterfowl and Wading Bird Habitat.<sup>10</sup>

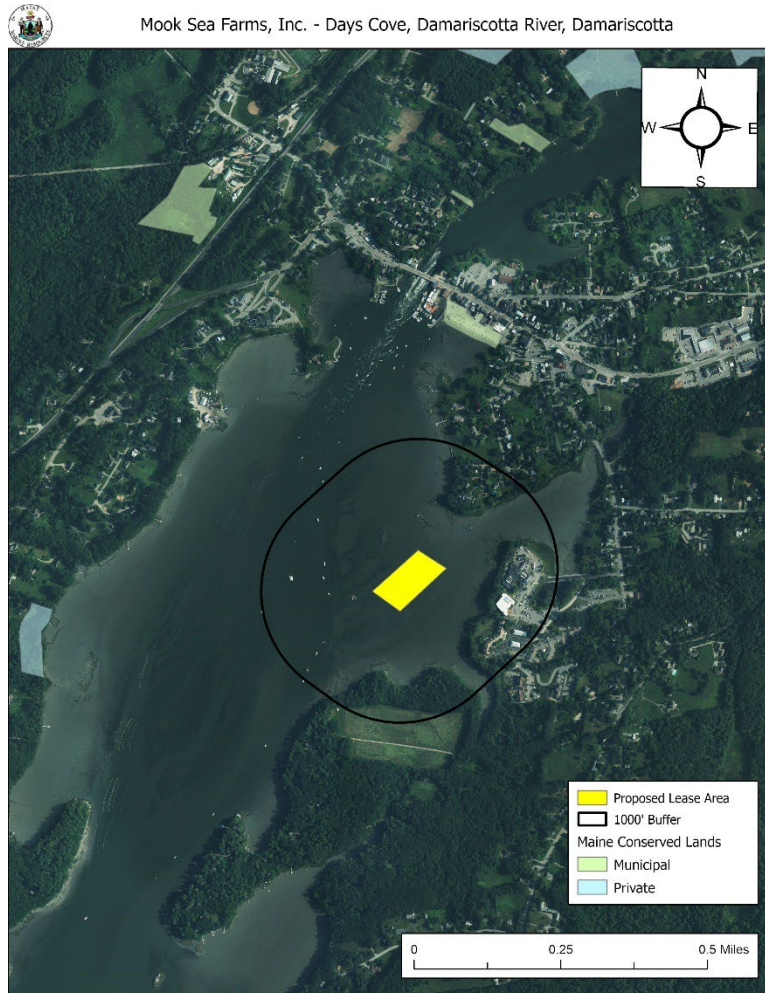
<sup>9</sup> Email correspondence between MDIFW and MDMR

<sup>10</sup> Data obtained from USFWS “Bald\_Eagle\_Nests\_-\_Maine\_2023” and 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 7).



**Figure 7.** Public facilities near the proposed lease site.<sup>11</sup>

**(7) Water Quality**

The proposed lease is currently located within an area classified as Conditionally Restricted by the MDMR Bureau of Public Health and Aquaculture (BPHA) (Figure 8). The area closes to the harvest of shellfish following a malfunction at the Great Salt Bay Sanitary District (GSBSD) facility. Harvest in this area during the open status is allowed only with applicable permits issued by the MDMR BPHA. According to MDMR records, Mook Sea Farms, Inc. has received such permits for the experimental lease DAM DCx.

<sup>11</sup> Data obtained from The Maine Office of GIS "GISVIEW.MECONSLANDS.Conserved\_Lands"

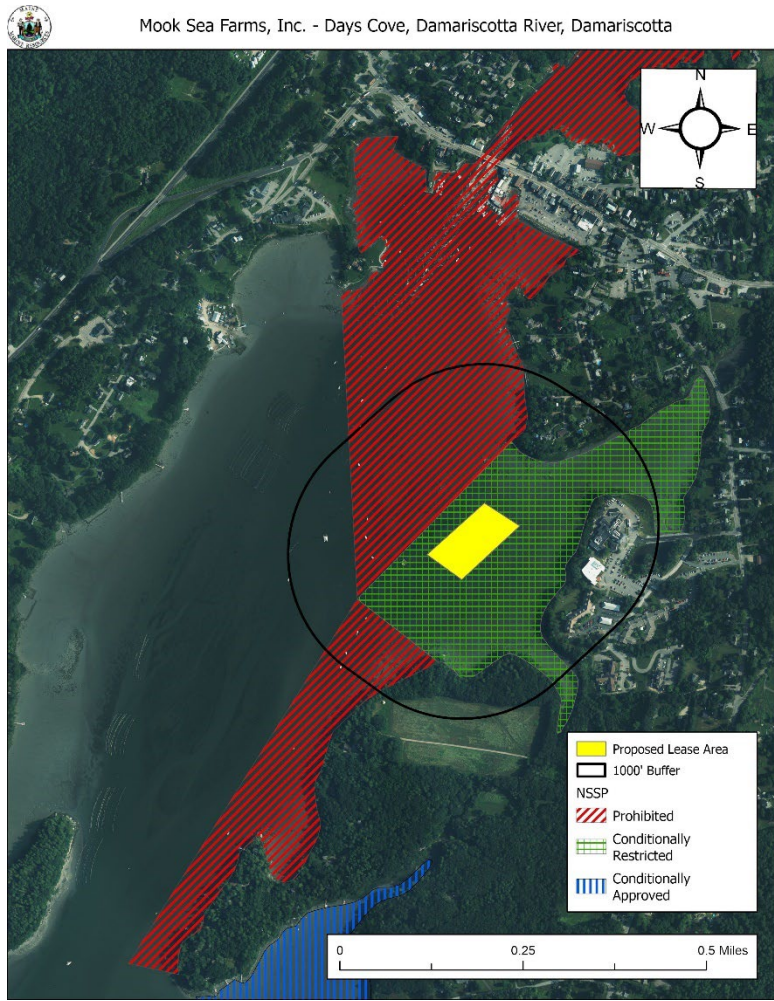


Figure 8. NSSP water quality classifications in the vicinity of the proposed lease site. <sup>12</sup>

<sup>12</sup> Data obtained from The Maine Office of GIS "MaineDMR Public Health - 2023 NSSP Classifications"