

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

**Location:** Northwest of Little Whaleboat Island, Casco Bay, Harpswell, Cumberland County, Maine

**Purpose:** Experimental lease for suspended culture of sugar kelp (*Saccharina latissima*) and kelp (*Saccharina latissima* forma *Angustissima*).

Site Review: Geoffrey Shook and Katie Von Hohenleiten

Report Preparation: Geoffrey Shook and Meryl Grady

<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.



# Maine Department of Marine Resources Site Report

Tumble Tide LLC  
Northwest of Little Whaleboat Island, Casco Bay  
Harpswell

## Application Overview

The applicant, Tumble Tide LLC, is requesting a 3.94-acre experimental lease northwest of Little Whaleboat Island, in Casco Bay, within the town of Harpswell for the suspended culture of marine algae. The applicant intends to have aquaculture gear on site seasonally from November 1-June 1. Anchor systems including anchors, mooring chains, mooring lines and marker buoys are intended to remain on site year-round. <sup>2</sup> The applicant currently operates three Limited Purpose Aquaculture (LPA) sites within 1,000 feet of the proposed lease (SRYA122, SRYA222, SRYA322). The applicant intends to relinquish all three LPAs if the proposed lease is granted.<sup>3</sup>

## General Characteristics

On August 30, 2024, Maine Department of Marine Resources (MDMR) scientists assessed the proposed lease site. MDMR scientists arrived on site at approximately 9:12 AM. The proposal is located in subtidal waters in Casco Bay approximately 1,155.2 feet northwest of Little Whaleboat Island at mean low water (MLW) (Figure 1). The area in the vicinity of the proposal was observed to consist of several small islands with rock ledges and patchy gravel beaches with mixed forest uplands.

## Depth

On August 30, 2024, MDMR scientists began collecting depths at the proposed site at approximately 9:14 AM. The tide was flooding with the next high tide predicted at 9:22 AM (Table 1). Depths were determined to be between 44.2-45.2 feet. Correcting for tidal variations derives depths at mean low water (MLW, 0.0 feet) to be between 36.0-37.0 feet.

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

| Date       | Time    | Height (ft) |
|------------|---------|-------------|
| 2024/08/30 | 3:09 AM | 0.4 L       |
| 2024/08/30 | 9:22 AM | 8.2 H       |
| 2024/08/30 | 3:16 PM | 1.3 L       |
| 2024/08/30 | 9:34 PM | 9.5 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 composed of mud with a sheet algal bed overlay.

<sup>2</sup> Application page 5, 6, 12

<sup>3</sup> Application pages 8, 9

<sup>4</sup> <https://www.usharbors.com/harbor/maine/south-harpswell-me/tides/?tide=2024-08#monthly-tide-chart>



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**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             |
| Benthic/Attached Biota | Aquatic Vegetation Bed           | Benthic Macroalgae            | Sheet Algal Bed |

**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, a nautical chart provided by the National Oceanic and Atmospheric Administration (NOAA), and the application coordinates (Table 3, Figures 2 and 3).

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

| <u>Corner</u> | <u>Latitude</u> | <u>Longitude</u> |                                   |
|---------------|-----------------|------------------|-----------------------------------|
| NW            | 43.77406°       | -70.05887°       | then 196.2 feet at 108° True to   |
| NE            | 43.77388°       | -70.05817°       | then 853.4 feet at 204° True to   |
| SE            | 43.77174°       | -70.05948°       | then 207.4 feet at 289° True to   |
| SW            | 43.77193°       | -70.06022°       | then 854.4 feet at 24° True to NW |

**Table 3.** Approximate distances from proposal to surrounding features (Figures 2 and 3).

| Feature                                     | Distance                   |
|---|----------------------------|
| NE corner to green navigation buoy “5”      | ~3,349.3’ to the northeast |
| NE corner to The Goslings at MLW            | ~4,821.8’ to the northeast |
| NE corner to intertidal ledges at MLW       | ~993.2’ to the southeast   |
| SE corner to Little Whaleboat Island at MLW | ~1,155.2’ to the southeast |
| SE corner to intertidal ledges at MLW       | ~734.7’ to the southeast   |
| SW corner to Little Whaleboat Island at MLW | ~1,283.4’ to the southeast |
| SW corner to French Island at MLW           | ~4,430.5’ to the northwest |
| NW corner to French Island at MLW           | ~4,155.9’ to the northwest |
| NW corner to The Goslings at MLW            | ~4,912.9’ to the northeast |

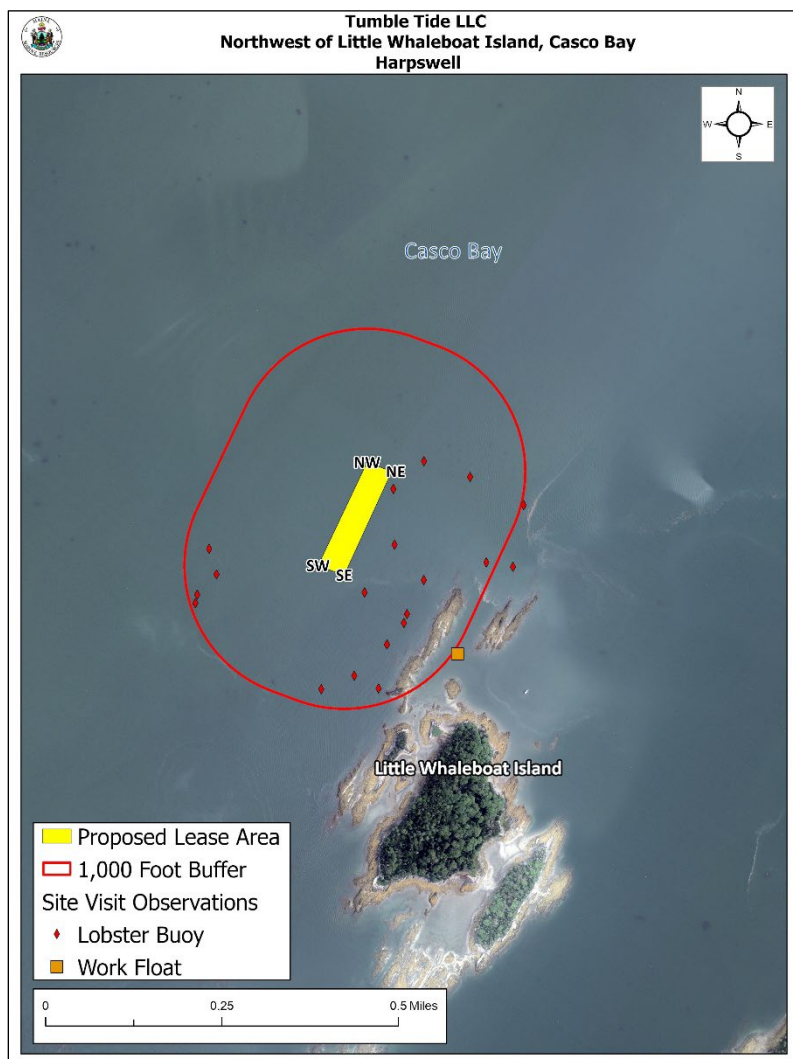


Figure 2. Proposed lease area with site visit observations.

***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, MDMR did not observe any docks, houses, or moorings within 1,000 feet of the proposal. The nearest land is Little Whaleboat Island approximately 1,155.2 feet southeast of the proposal (Figure 2). The nearest inhabited land is Lower Goose Island located approximately 1.1 miles to the north (Figure 3).

In a completed Harbormaster Questionnaire submitted to MDMR on April 25, 2024, it was indicated that riparian ingress and egress should not be affected.

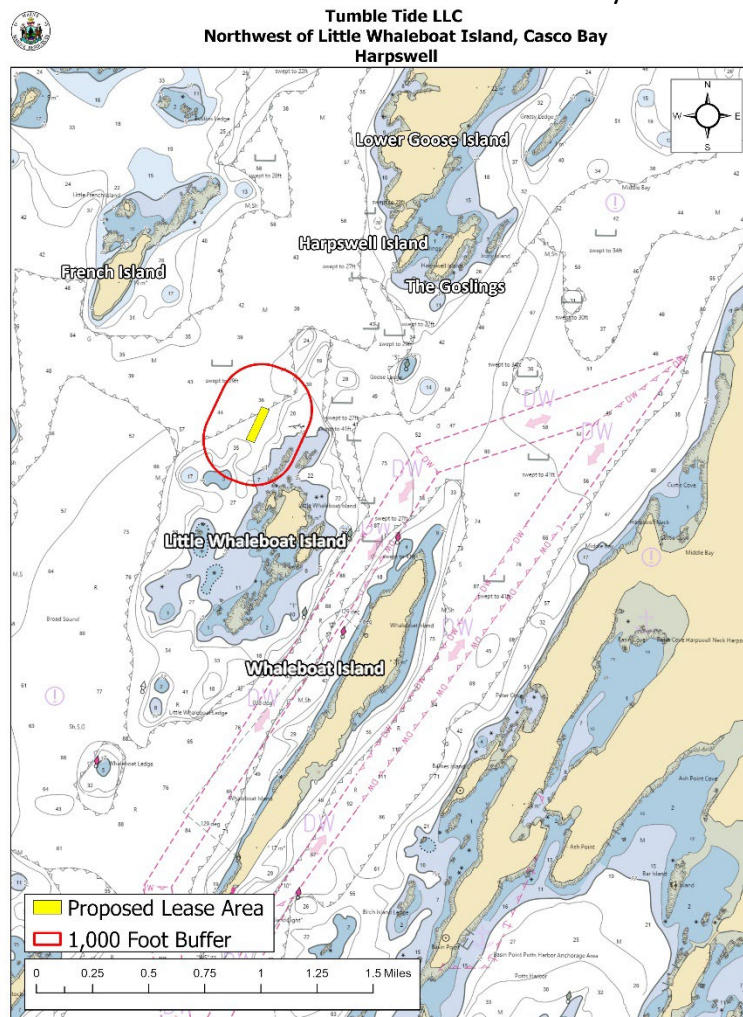


## (2) Navigation

The proposal is located in subtidal, navigable waters. At MLW, there is approximately 4,155.9 feet of navigable water between the proposal and French Island to the northwest, and 734.7 feet of navigable water between the proposal and an intertidal ledge to the southeast near Little Whaleboat Island. There are also marked navigation channels on either side of Whaleboat Island that provide access to and from northern Casco Bay (Figure 1).

During MDMR's site visit, scientists observed a powerboat transiting along the Little Whaleboat Island shoreline that then turned west and transited through the proposal area, a lobster boat transiting to the north, two lobster boats transiting to the east through the proposal area, as well as a power yacht transiting to the west of the proposal. MDMR scientists also observed three kayakers to the east in the vicinity of Whaleboat Island.

The Harbormaster Questionnaire indicated there is less vessel traffic in the fall and winter months, but contractors and fishermen are still active in Casco Bay in late fall and early spring.



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



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### (3) Fishing and Other Uses

During MDMR's site visit, scientists observed light lobstering activity within the vicinity of the proposal, generally concentrated around the ledges to the east of the proposal. There were 17 buoys observed within 1,000 feet of the proposal, with the closest located approximately 66.4 feet to the east. MDMR scientists also observed a float with lobster traps stored on it located approximately 1,032.9 feet southeast of the proposal. A lobster boat and crew were actively working on and near the float during MDMR's site visit.

The Harbormaster Questionnaire indicated that commercial and recreational lobstering, as well as striped bass (*Morone saxatilis*) fishing occur in the area. Commercial fishermen actively fish into the late fall in this general area.

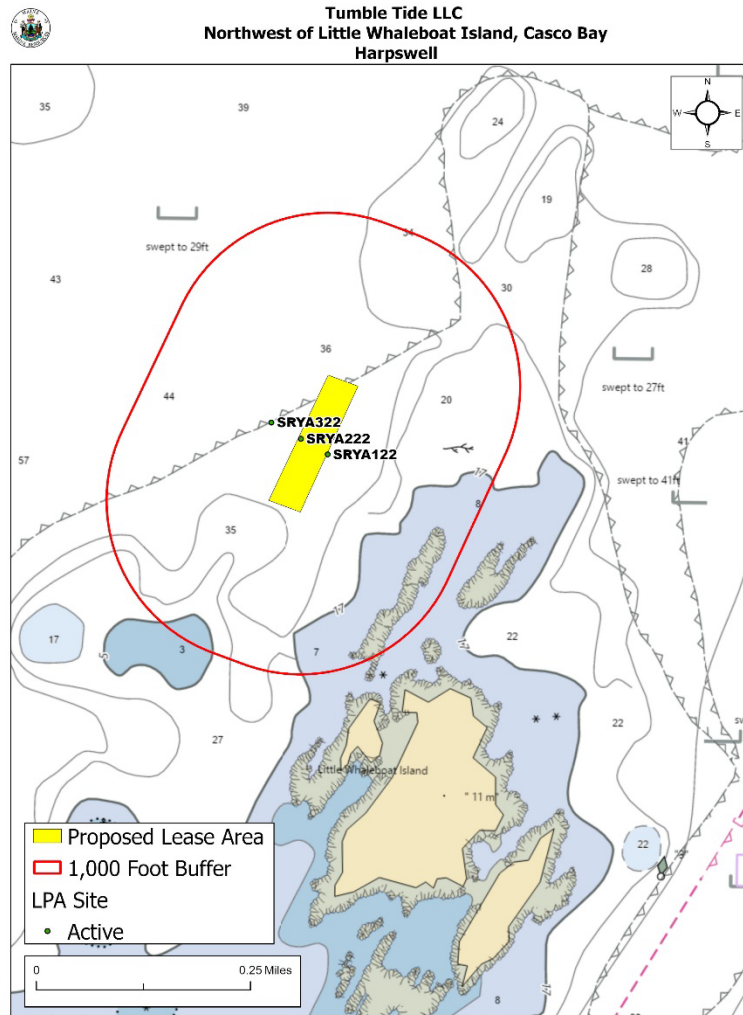
### (4) Other Aquaculture Uses

There are no active aquaculture leases within 1,000 feet of the proposed lease site. There are three LPAs within 1,000 feet of the proposal (SRYA122, SRYA222, SRYA322). SRYA222 is located within the boundaries of the proposal, SRYA122 is located approximately 4.9 feet to the east, and SRYA322 is located 191.3 feet to the west (Figure 4). The LPAs are licensed to the contact person for this lease application, Stuart Ryan, and would be relinquished if the proposed lease is granted.<sup>5</sup>

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<sup>5</sup> Application pages 1, 9





**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 footage is described below in Table 4.

**Table 4.** Species observed on underwater video footage.

| Species Observed   | Abundance |
|--|-----------|
| Sand shrimp ( <i>Crangon septemspinosa</i> )             | Common    |
| American lobster ( <i>Homarus americanus</i> )           | Rare      |
| Winter flounder ( <i>Pseudopleuronectes americanus</i> ) | Rare      |



### Eelgrass (*Zostera marina*)

Records of eelgrass collected by the Maine Department of Environmental Protection (MDEP) in 2022<sup>6</sup> indicate no mapped eelgrass presence within 1,000 feet of the proposal. The nearest mapped eelgrass is approximately 2,339.8 feet southwest of the proposal (Figure 5). During MDMR's site visit, eelgrass blades were observed floating on the surface of the water in the vicinity of the proposal. No eelgrass was observed on underwater video footage within the proposal boundaries.

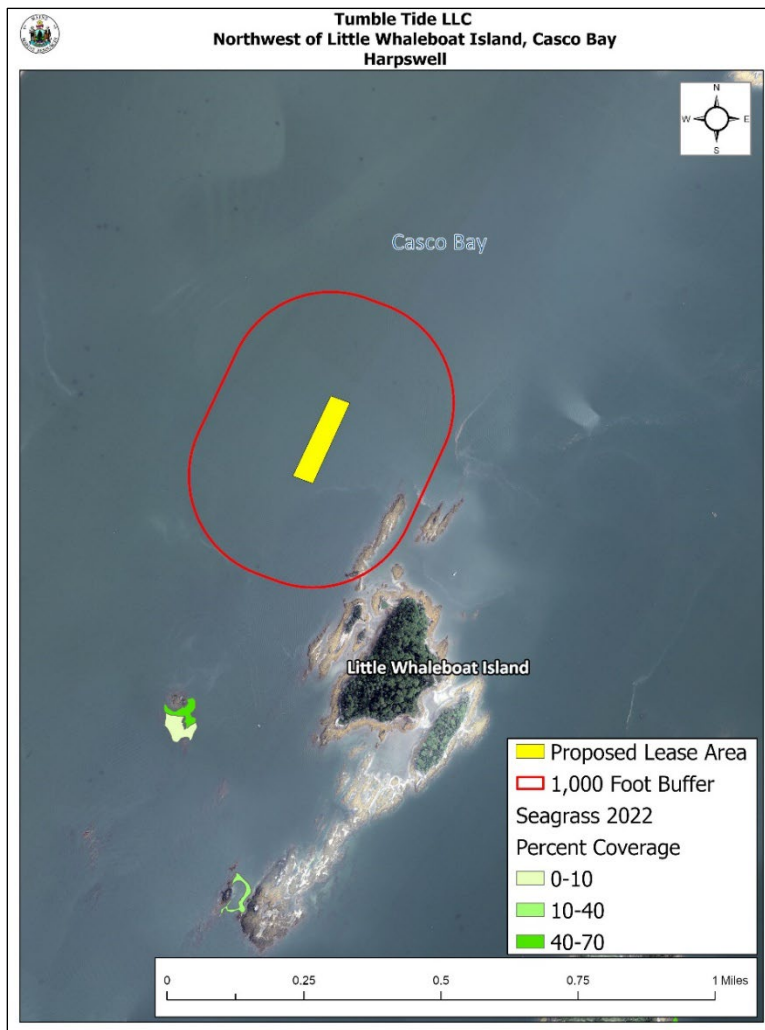


Figure 5. Mapped eelgrass (*Z. marina*) in the vicinity of the proposed lease area.

<sup>6</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





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### Wildlife

During MDMR's site visit, scientists observed double-crested cormorants (*Nannopterum auritum*), herring gulls (*Larus argentatus*), common eider ducks (*Somateria mollissima*), an osprey (*Pandion haliaetus*), and a harbor seal (*Phoca vitulina*) in the general vicinity of the proposal.

The Maine Department of Inland Fisheries and Wildlife (MDIFW) has jurisdiction over inland fisheries and wildlife resources of the state. MDIFW also has the authority to conserve wildlife populations and their ecosystems through applicable state laws and rules. MDMR provides MDIFW with notice and the opportunity to comment on all complete lease applications. In addition, the site report also includes MDIFW 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 MDIFW and available through the Maine Office of GIS (MEGIS), there is no mapped habitat type within 1,000 feet of the lease proposal. The proposal is near Tidal Waterfowl and Wading Bird Habitat (TWWH), which is a type of Significant Wildlife Habitat designated and regulated by MDIFW.<sup>7</sup> Based on data maintained by MDIFW, the nearest mapped TWWH is located approximately 3,462.1 feet south of the proposal (Figure 6).

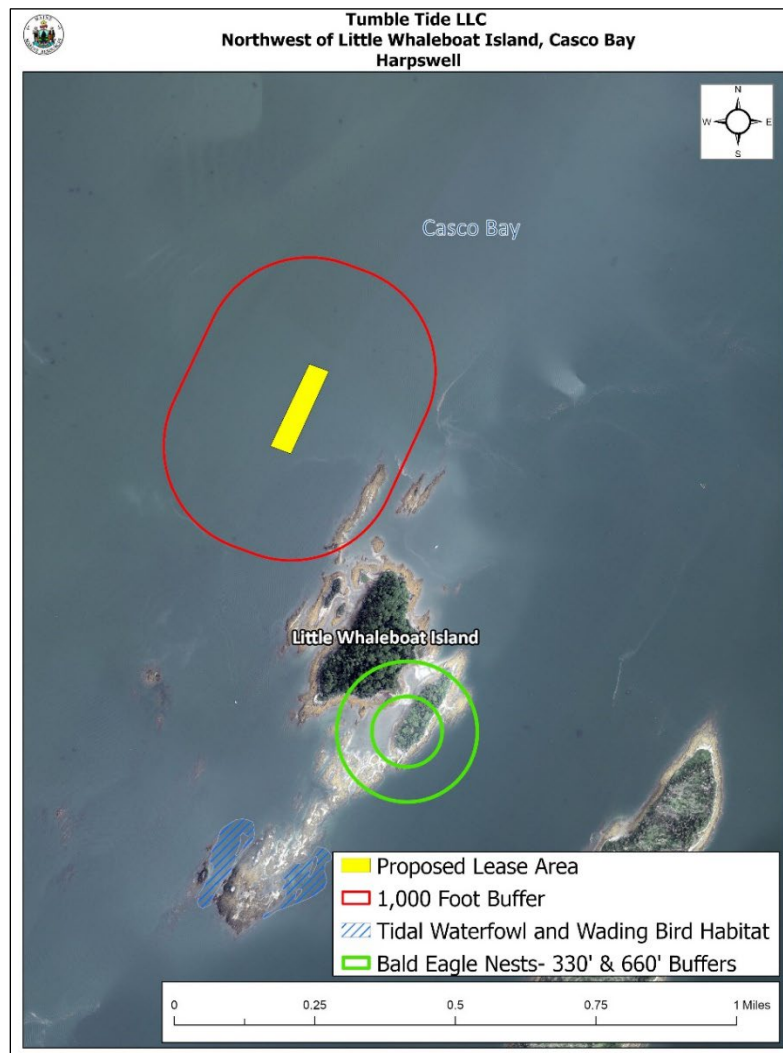
Though bald eagles are no longer listed on Maine's Endangered and Threatened Species List, the United States Fish and Wildlife Service (USFWS) may also have jurisdiction over the management and conservation of the species based on applicable law and rule. Data collected by USFWS in 2023 by aerial nest survey shows the nearest mapped bald eagle nesting site to be approximately 2,806.6 feet southeast of the proposal.

MDIFW was provided with the opportunity to comment on this proposal. On March 19, 2024, a Resource Biologist with MDIFW responded by email to a "Request for Agency Review and Comment" stating that minimal impacts to wildlife are anticipated for this project.<sup>8</sup>

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<sup>7</sup> <https://www.maine.gov/ifw/programs-resources/environmental-review/significant.html>

<sup>8</sup> Email correspondence between MDIFW and MDMR



**Figure 6.** Mapped habitats in the vicinity of the proposed lease area.<sup>9</sup>

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

<sup>9</sup> Data obtained from USFWS "Bald\_Eagle\_Nests\_-\_Maine\_2023" and MDIFW "EHRTERN", "EHPLVTRN", "GISVIEW.ME\IFW.Twwh", "ShorebirdAreas", and "SNI".