

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

**Location:** Turtle Head Cove, Penobscot Bay, Islesboro, Waldo County, Maine

**Purpose:** Experimental lease for suspended culture of sugar kelp (*Saccharina latissima*), skinny kelp (*Saccharina angustissima*), and winged kelp (*Alaria esculenta*).

Site Review: Geoffrey Shook and Chloe Kilborn

Report Preparation: Chloe Kilborn, 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, Kimberly Grindle, is requesting a 3.91<sup>2</sup> acre experimental lease in Turtle Head Cove for the suspended culture of kelp. The applicant intends to have gear on site between October and June. In June, all buoys, except the corner markers, would be removed and chains would be dropped to the sea floor.<sup>3</sup>

**General Characteristics**

On September 28, 2023, Maine Department of Marine Resources (MDMR) scientists assessed the proposed lease site beginning at 1:00 PM. The shoreline of Turtle Head Cove, in the vicinity of the proposal, consists of forested uplands. Sprague’s Beach is approximately 3,120 feet to the southeast of the proposal at mean low water (MLW).

**Depth**

MDMR scientists began collecting depths at 1:03 PM at the proposed site, which was approximately 2.5 hours after high tide. Measured depths at corners of the proposed lease site ranged from 47.1 to 48.9 feet. Correcting for tidal variation derives water depths at the last high tide to be from 51.3 to 53.1 feet and at MLW (0.0 feet) to be from 40.0 to 41.8 feet (Table 1).

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

Date	Time	Height (ft)
2023/09/28	4:17 AM	-1.0 L
2023/09/28	10:31 AM	11.3 H
2023/09/28	4:39 PM	-0.9 L
2023/09/28	10:54 PM	12.0 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 3.91 acres.

<sup>3</sup> Application page 5

<sup>4</sup><https://www.us harbors.com/harbor/maine/gilkey-harbor-islesboro-me/tides/?tide=2023-09#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) – 3.91 Acres**

<u>Corner</u>	<u>Latitude</u>	<u>Longitude</u>	
A	44.387553°	-68.889611°	then 288.9 feet at 147° True to
B	44.386883°	-68.889021°	then 600.5 feet at 242° True to
D	44.386108°	-68.891048°	then 280.4 feet at 327° True to
C	44.386760°	-68.891617°	then 598.8 feet at 62° True to A

**Table 3.** Approximate distances from proposed lease corners to surrounding features (Figures 2 and 3).

Feature	Distance
Corner A to northern Islesboro shoreline at MLW	~2,060' to the northeast
Corner B to mooring cluster	~1,578' to the southeast
Corner D to Sprague’s Beach at MLW	~3,120' to the southeast
Corner D to Islesboro shoreline at MLW	~2,430' to the southwest



Kimberly Grindle - Turtle Head Cove, Penobscot Bay, Islesboro



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**

MDMR scientists did not observe any moorings or docks within 1,000 feet of the proposal. The proposal is over 1,000 feet away from any shoreline. There was a cluster of three moorings with attached floats for winter storage approximately 1,578 feet southeast of the proposal. There was one anchored sailboat, approximately 1,550 feet, to the east of the proposal (Figure 2).



## (2) Navigation

The main navigational channel is located approximately 3,780 feet to the north of the proposal (Figure 3). The nearby navigational channel is also used as a shipping lane to access Searsport and Belfast Harbor. During the site visit, MDMR scientists observed two powerboats navigating in the general vicinity of the proposal and one sailboat that motored into the cove and anchored east of the proposal (Figure 2).

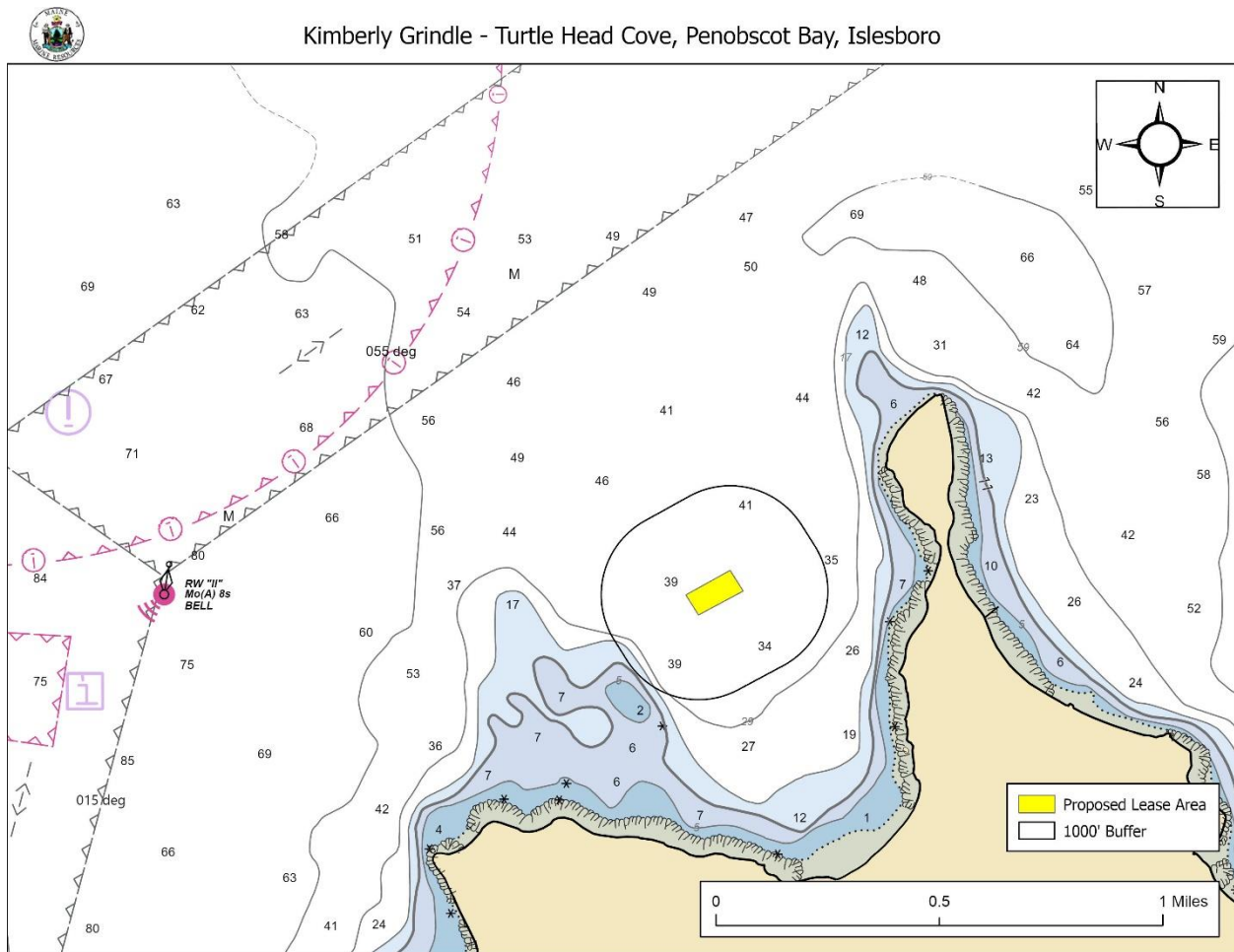


Figure 3. Proposed lease area with nearby navigational channels.

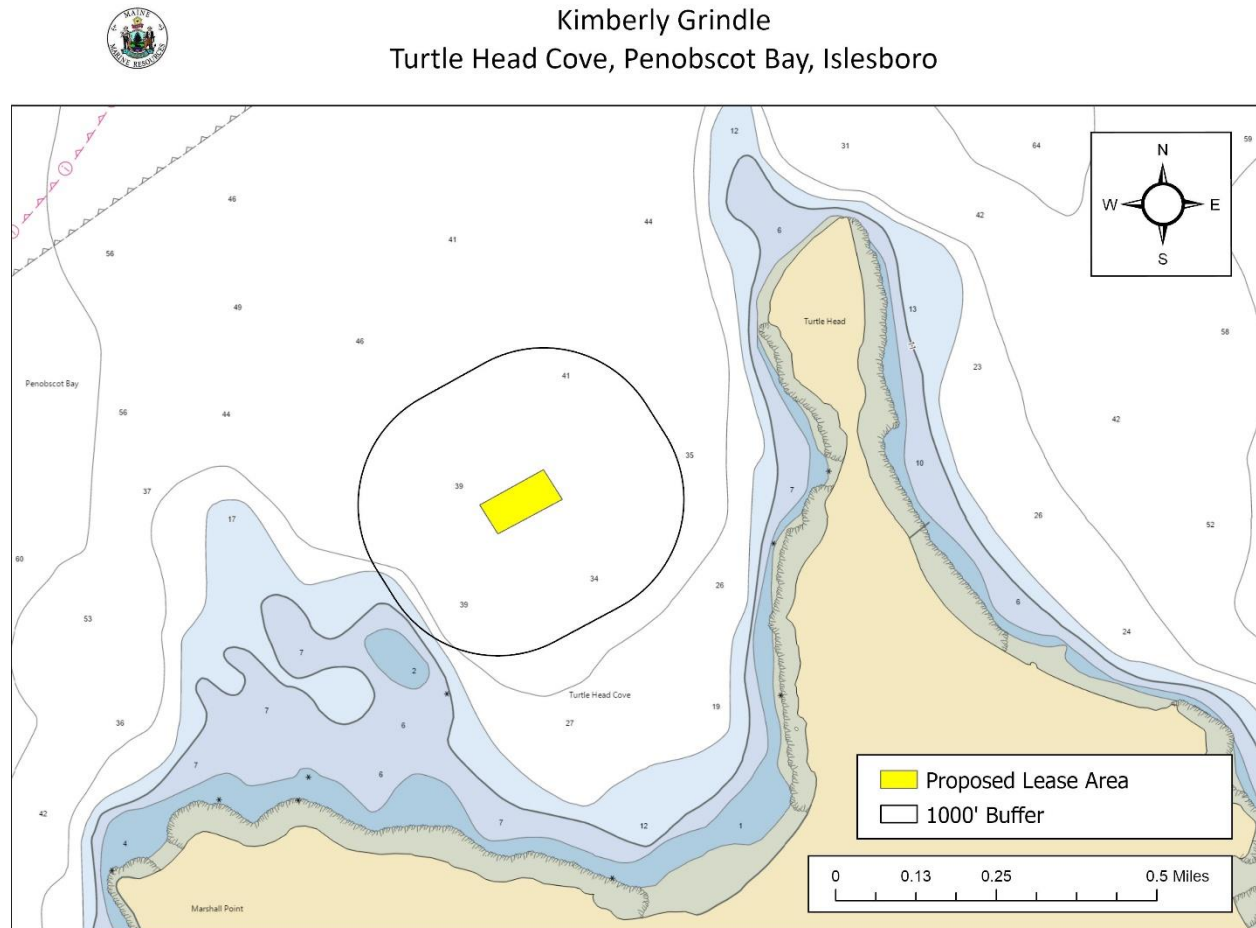
## (3) Fishing and Other Uses

During the site visit, MDMR documented two individual lobster buoys and two lobster buoy clusters in the vicinity of the proposal. The individual lobster buoys were approximately 8 feet and 210 feet from the proposal boundaries. The lobster buoy clusters were approximately 928 feet and 1,041 feet southwest of the proposal (Figure 2). In general, MDMR observed light lobstering activity in the general vicinity of the proposal.



**(4) Other Aquaculture Uses**

There are no aquaculture leases or limited purpose aquaculture (LPA) sites within 1,000 feet of the proposal (Figure 4).



**Figure 4.** Aquaculture leases and LPA licenses in the vicinity of the proposal.

**(5) Existing System Support**

**Epibenthic Flora and Fauna**

On September 28, 2023, MDMR scientists utilized an ROV to assess the epibenthic ecology of the proposed lease. The relative abundance of epibenthic flora and fauna observed is described below in Table 4.



**Table 4.** Species observed during site assessment.

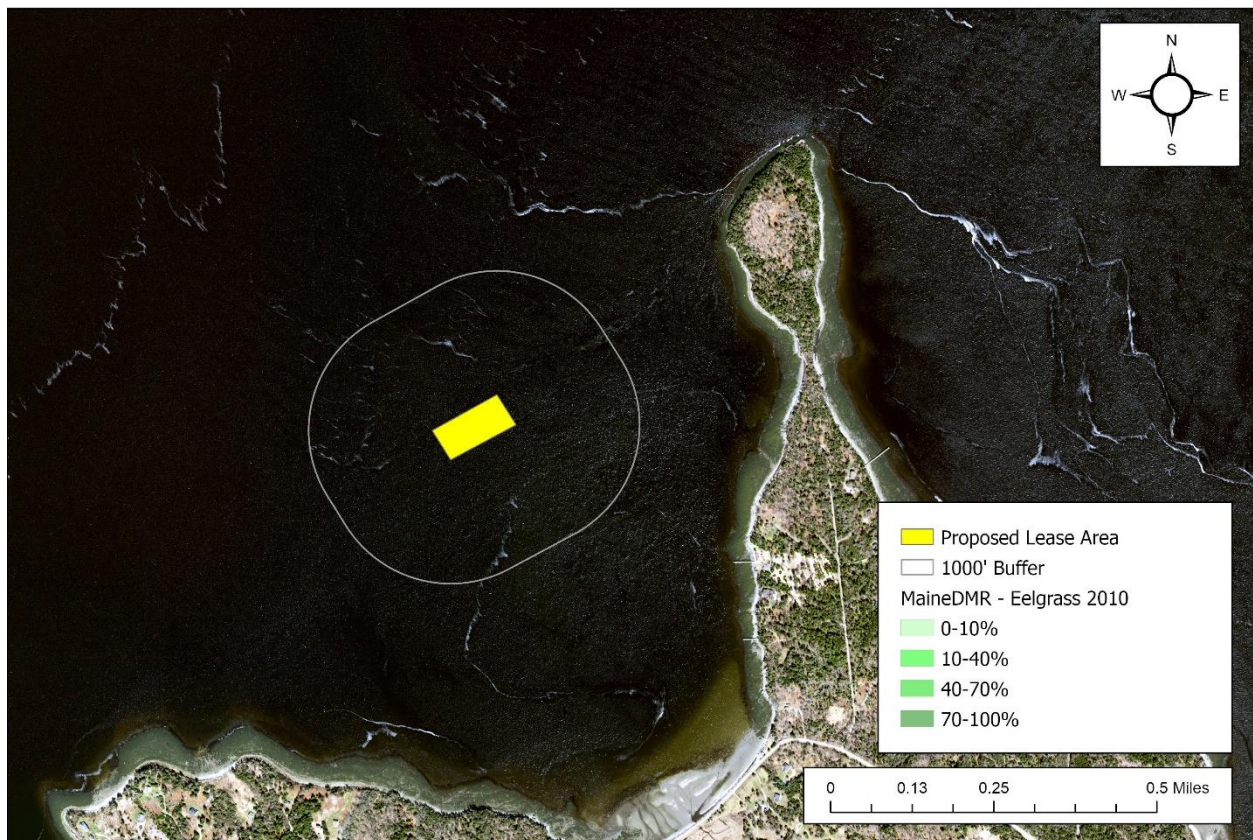
Species Observed	Abundance
Sand Dollar ( <i>Clypeasteroida</i> sp.)	Occasional
Northern Sea Star ( <i>Asterias rubens</i> )	Occasional
Crab ( <i>Cancer</i> sp.)	Occasional

**Eelgrass (*Zostera marina*)**

Historical records of eelgrass collected by MDMR in 2010 indicate no mapped eelgrass presence in the vicinity of the proposal (Figure 5).<sup>5</sup> No eelgrass was observed during MDMR’s site assessment.



Kimberly Grindle  
Turtle Head Cove, Penobscot Bay, Islesboro



**Figure 5.** Mapped eelgrass (*Z. marina*) near the proposed lease utilizing 2010 data.

<sup>5</sup> Data obtained from The Maine Office of GIS “GISVIEW.MEDMR.Eelgrass”. This is the most current record of mapped eelgrass within the vicinity of the proposal.



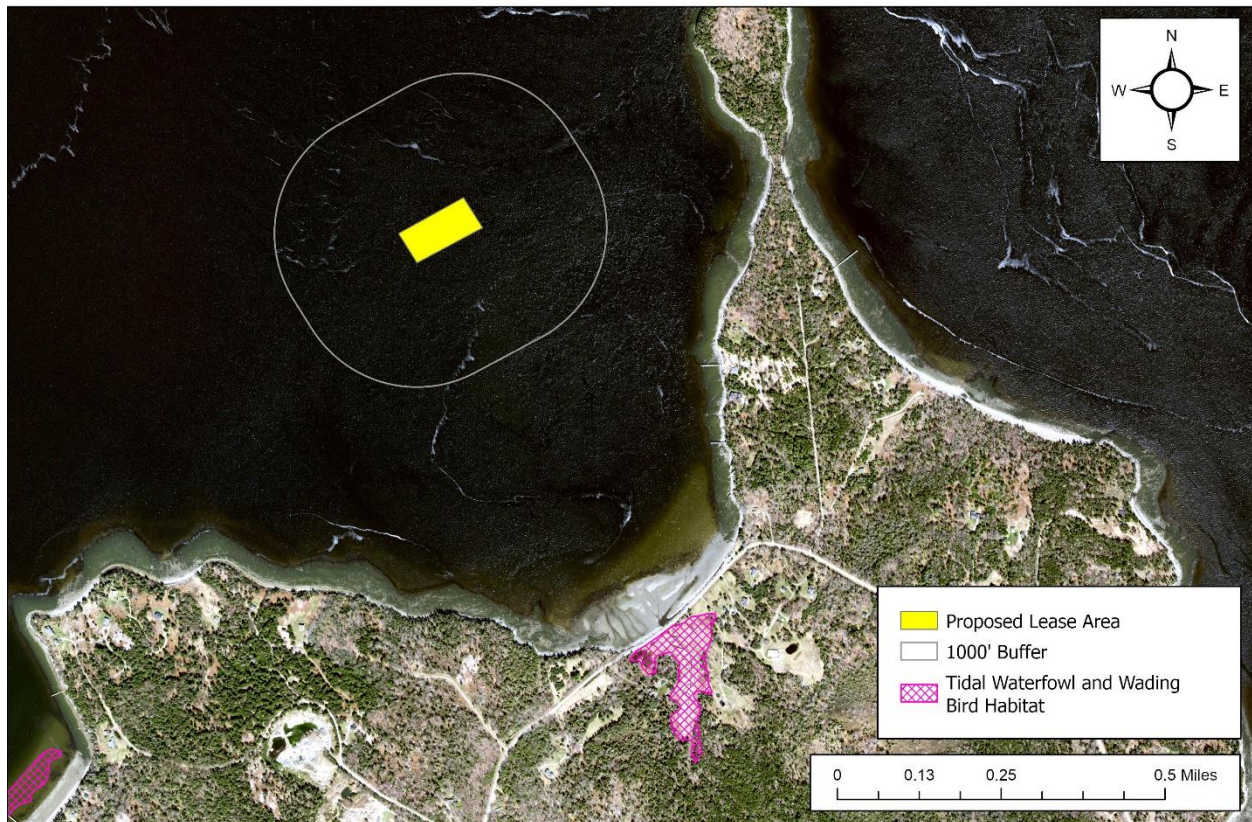
**Wildlife**

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 proposed lease is located approximately 3,590 feet to the north of mapped Tidal Waterfowl and Wading Bird Habitat (Figure 6). Data collected by the United States Fish and Wildlife Service in 2023 by aerial nest survey<sup>6</sup> shows the closest mapped bald eagle nesting site to be approximately 1.6 miles south of the proposal on Islesboro. Additionally, MDMR observed common loon (*Gavia Immer*), black scoter (*Melanitta americana*), and harbor seal (*Phoca vitulina*) in the general vicinity of the proposal.

On February 3, 2023, a Wildlife Biologist with MDIFW responded by email to a “Request for Agency Review and Comment” stating minimal impacts to wildlife are anticipated for this project.<sup>7</sup>



Kimberly Grindle  
Turtle Head Cove, Penobscot Bay, Islesboro



**Figure 6.** Mapped Tidal Wading Bird and Waterfowl Habitat<sup>8</sup>.

<sup>6</sup> Data obtained from USFWS “Bald\_Eagle\_Nests\_-\_Maine\_2023”.

<sup>7</sup> Email correspondence between MDIFW and MDMR.

<sup>8</sup> Data obtained from MDIWF maintained SDE Feature Class “GISVIEW.MEIFW.Twwh”.





**Maine Department of Marine Resources  
Site Report**

Kimberly Grindle  
Turtle Head Cove, Penobscot Bay  
Islesboro

**(6) Interference with Public Facilities**

The proposed lease is not located 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 "Open/Approved" by the MDMR Bureau of Public Health and Aquaculture.