



## Nicholas Heal - Ducktrap Harbor, Northport (App 2)

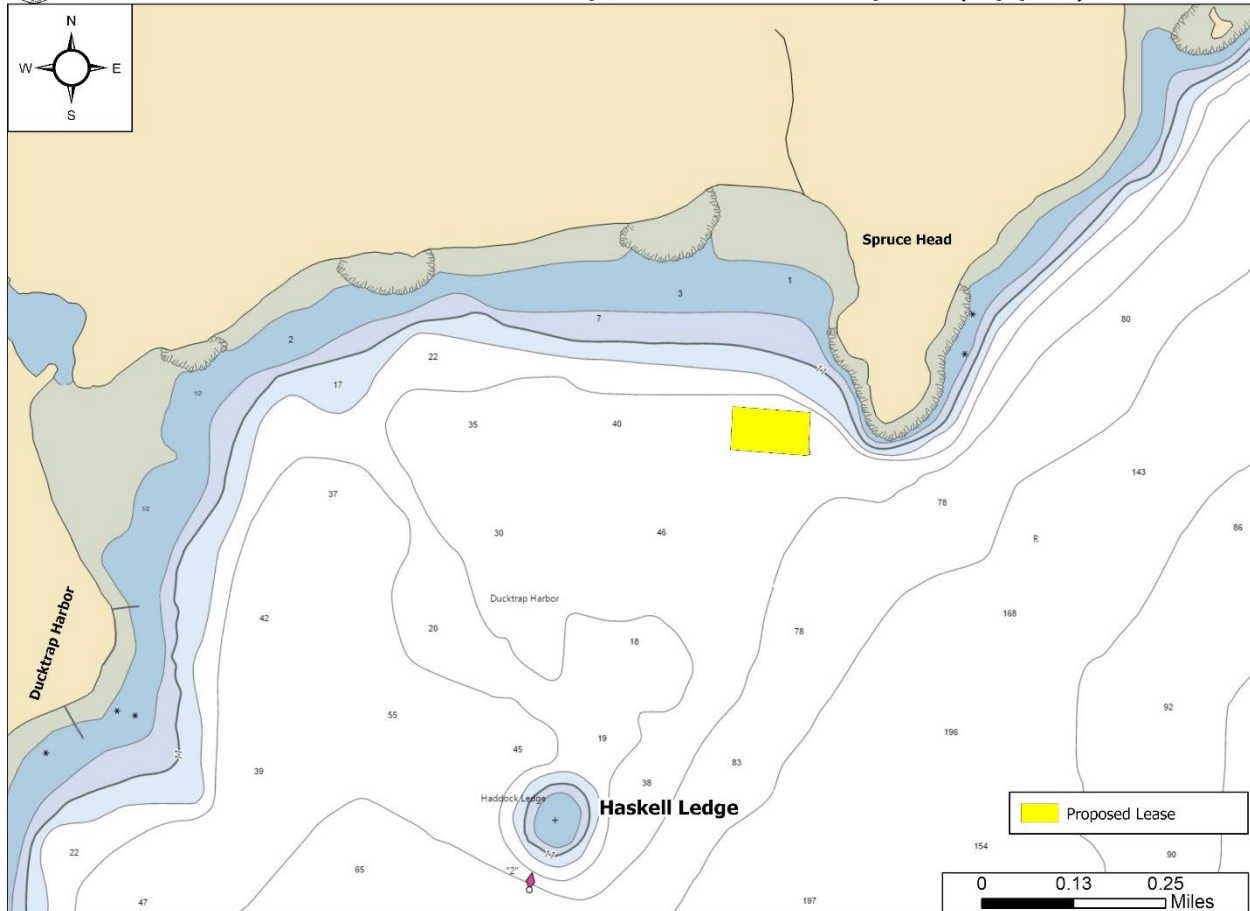


Figure 1. Vicinity map.<sup>1</sup>

**Location:** Ducktrap Harbor, Penobscot Bay, Northport, Waldo County, Maine

**Purpose:** Experimental lease for suspended culture of sugar kelp (*Saccharina latissima*), skinny kelp (*Saccharina angustissima*), winged kelp (*Alaria esculenta*), horsetail/fingered kelp (*Laminaria digitata*), shotgun kelp (*Agarum clathratum*)<sup>2</sup>, dulse (*Palmaria palmata*), Irish moss (*Chondrus crispus*), and sea lettuce (*Ulva lactuca*).

Site Review: Geoff Shook, Katie von Hohenleiten, and Heidi Bray<sup>3</sup>

Report Preparation: Katie von Hohenleiten, Geoff 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.

<sup>2</sup> Application states the scientific name as *Agarum cribosum*, however the current accepted scientific name is *Agarum clathratum*.

<sup>3</sup> Dive support



**Application Overview**

The applicant, Nicholas Heal, is requesting a 3.99 acre experimental lease for the suspended culture of marine algae in Ducktrap Harbor, Penobscot Bay, within the town of Northport. The applicant intends to remove all gear, except concrete mooring blocks and required lease markers, from June 16-October 14.<sup>4</sup>

**General Characteristics**

On July 30, 2024, Maine Department of Marine Resources (MDMR) scientists assessed the proposed lease site. MDMR scientists arrived on site at approximately 7:50 AM. The general characteristics of the area surrounding the proposed lease consisted of rocky coastline leading to forested uplands.

**Depth**

MDMR scientists began collecting depths at the proposed site shortly after high tide at approximately 7:51 AM. Measured depths at corners of the proposed lease site ranged from 45.3 to 64.3 feet. Correcting for tidal variation derives water depths at the corners of the proposal at mean low water (MLW, 0.0 feet) to be from 36.0 to 55.0 feet (Table 1).

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

Date	Time	Height (ft)
2024/07/30	1:07 AM	0.1 L
2024/07/30	7:21 AM	9.4 H
2024/07/30	1:18 PM	1.0 L
2024/07/30	7:40 PM	10.9 H

**Bottom Characteristics**

MDMR scientists observed the bottom characteristics of the proposed lease site via SCUBA 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 proposed lease site is 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>4</sup> Application page 9, 17

<sup>5</sup> <https://www.usharbors.com/harbor/maine/gilkey-harbor-islesboro-me/tides/?tide=2024-07#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 by 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) – 3.99 Acres**

<u>Corner</u>	<u>Latitude</u>	<u>Longitude</u>	
NW	44.29513°	-68.98428°	then 559.4 feet at 094° True to
NE	44.29501°	-68.98215°	then 310.2 feet at 182° True to
SE	44.29416°	-68.98220°	then 562.0 feet at 274° True to
SW	44.29428°	-68.98434°	then 310.3 feet at 003° True to NW

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

Feature	Distance
NE corner to Spruce Head coastline closest point at MLW	~355.5' to the east
SE corner to main navigational channel	~4,257.8' to the east
SW corner to red nun navigational buoy "2"	~3,468.1' to the southwest
NW corner to Northport shoreline closest point at MLW	~1,045.1' to the north



Nicholas Heal - Ducktrap Harbor, Northport (App 2)



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 did not observe any docks or moorings within 1,000 feet of the proposal. Aerial imagery<sup>6</sup> indicates there is a pier on the east side of Spruce Head approximately 3,300.6 feet to the northeast, as well as a pier in Ducktrap Harbor approximately 4,464.3 feet southwest of the proposal (Figure 2).

<sup>6</sup> Maine Orthoimagery Regional 2022:  
<https://gis.maine.gov/arcgis/services/imageryBaseMapsEarthCover/orthoRegional2022/ImageServer>





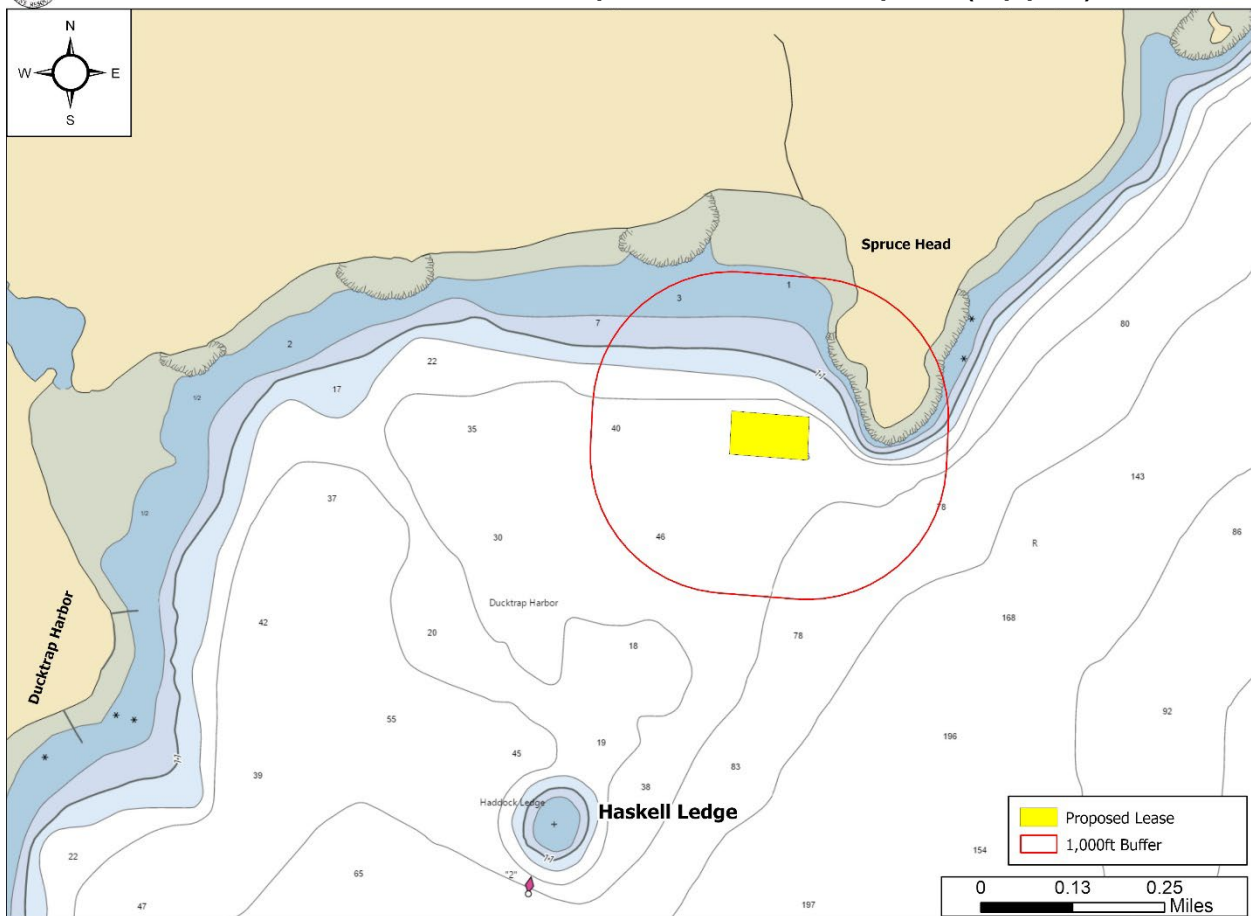
**(2) Navigation**

The proposal is located approximately 3,468.1 feet north of red nun navigational buoy “2” that marks the northern edge of the navigational channel approaching Ducktrap Harbor. There is approximately 355.5 feet of navigable water between the proposed lease and the southwestern shoreline of Spruce Head at MLW (Figure 3).

During MDMR’s site visit, one recreational powerboat was observed to the north of the proposed lease transiting southerly. A ferry service was observed operating to the southwest of the proposed lease.



**Nicholas Heal - Ducktrap Harbor, Northport (App 2)**



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

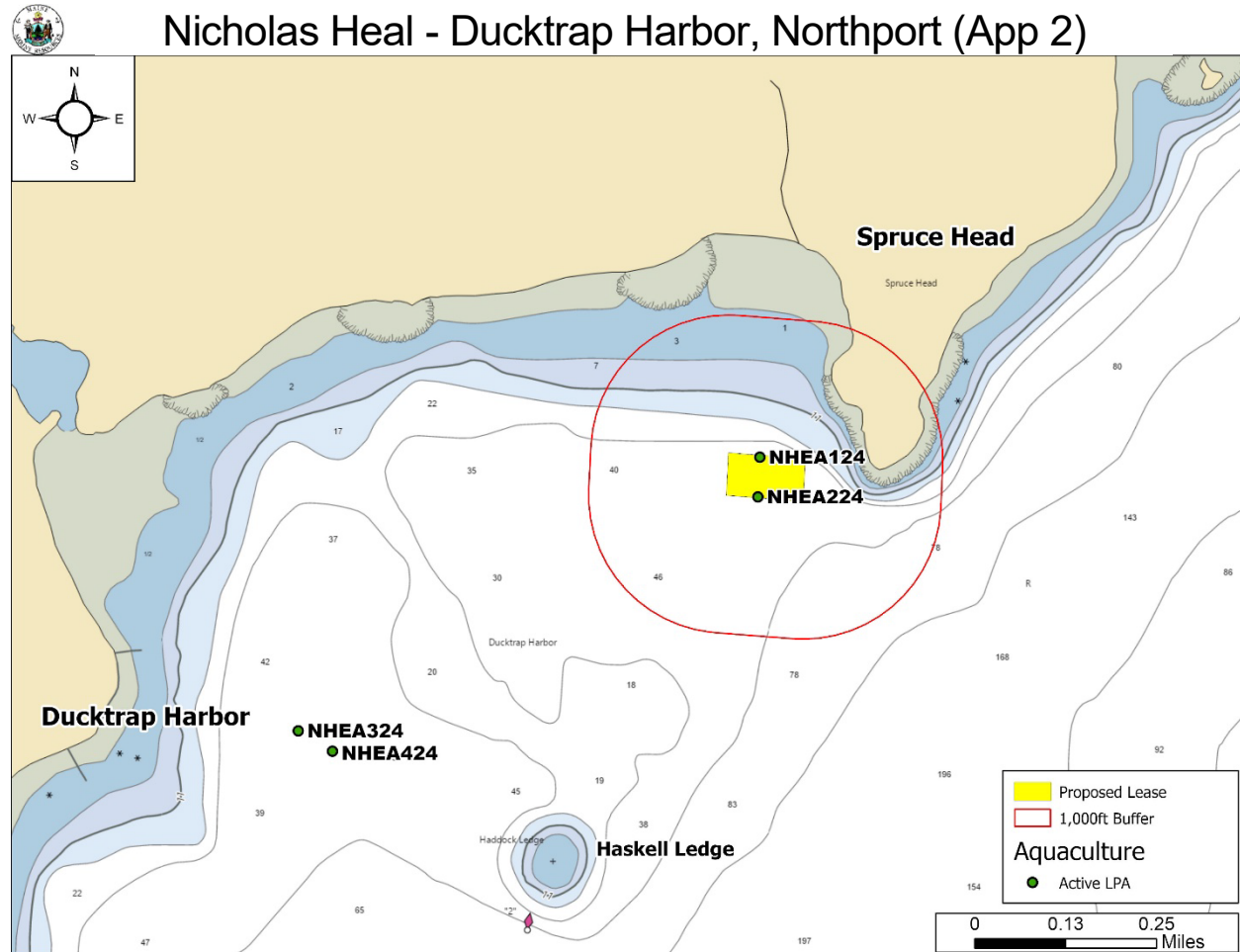
**(3) Fishing and Other Uses**

During the site visit, MDMR documented six lobster buoys within 1,000 feet of the proposal. The closest lobster buoy to the proposed lease was approximately 325.1 feet to the northeast (Figure 2). MDMR observed four powerboats fishing recreationally to the west of the proposal during the site visit.



**(4) Other Aquaculture Uses**

There are two limited purpose aquaculture (LPA) sites within 1,000 feet of the proposal. NHEA124 and NHEA224 are located within the boundaries of the proposal and are licensed to the applicant Nicholas Heal (Figure 4).<sup>7</sup> There are no other LPAs or aquaculture leases within 1,000 feet of the proposed lease site.



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

**(5) Existing System Support**

**Epibenthic Flora and Fauna**

On July 30, 2024, MDMR scientists conducted a SCUBA dive 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.

<sup>7</sup> NHEA124 and NHEA224 were licensed after this application was deemed complete by MDMR.



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

Species Observed	Abundance
Fig Sponge ( <i>Suberites ficus</i> )	Common
American Lobster ( <i>Homarus americanus</i> )	Occasional
Rockweed ( <i>Ascophyllum nodosum</i> )	Occasional
Bladderwrack ( <i>Fucus vesiculosus</i> )	Occasional
Northern cerianthid ( <i>Synarachnactis brachiolata</i> )	Occasional
Northern shrimp ( <i>Pandalus borealis</i> )	Occasional
Winter flounder ( <i>Pseudopleuronectes americanus</i> )	Rare
Jonah Crab ( <i>Cancer borealis</i> )	Rare
Moon snail ( <i>Euspira heros</i> ) collars	Rare
Waved Whelk ( <i>Buccinum undatum</i> ) egg cluster	Rare

### Eelgrass (*Zostera marina*)

Records of eelgrass collected by MDMR in 2010 indicate the nearest mapped eelgrass is approximately 702.6 feet north of the proposed lease (Figure 5).<sup>8</sup> No eelgrass was observed within the proposal boundaries during MDMR’s site assessment.

<sup>8</sup> Data obtained from The Maine Office of GIS “GISVIEW.MEDMR.Eelgrass”. Data from 2010 was the most current record of mapped eelgrass within the vicinity of the proposal at the time the site report was written.



## Nicholas Heal - Ducktrap Harbor, Northport (App 2)



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 approximately 850.5 feet to the south of mapped Tidal Waterfowl and Wading Bird Habitat (TWWH). Data collected by the United States Fish and Wildlife Service in 2023 by aerial nest survey shows no mapped bald eagle nesting site to be in the vicinity of the proposed lease (Figure 6).

On August 9, 2023, a Resource Biologist with MDIFW responded by email to a “Request for Agency Review and Comment” stating minimal impacts to wildlife are anticipated for this project.

During the site assessment, MDMR scientists observed double-crested cormorants (*Nannopterum auritum*), black guillemot (*Cephus grylle*), and a common loon (*Gavia immer*) in the general vicinity of the proposal.





Nicholas Heal - Ducktrap Harbor, Northport (App 2)



Figure 6. Mapped TWWH 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 Open/Approved by the MDMR Bureau of Public Health and Aquaculture.

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