

STATE OF MAINE  
DEPARTMENT OF MARINE RESOURCES

Nicholas Heal  
PEN DHx

Experimental Aquaculture Lease Application  
Suspended Culture of Marine Algae  
Ducktrap Harbor, Lincolnville, Maine

**FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION**

Nicholas Heal applied to the Department of Marine Resources (DMR) for a 3.98<sup>1</sup> acre experimental lease in Ducktrap Harbor, Penobscot Bay, in the town of Lincolnville, Waldo County, for the 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*) for commercial aquaculture research and development.

**1. THE PROCEEDINGS**

DMR accepted the application as complete on May 30, 2023. Notice of the application and the 30-day public comment period was provided to state agencies, riparian landowners within 1,000 feet of the proposed site, the Town of Lincolnville and its Harbormaster, and others on DMR's email listserv. Notice to the municipality included a Harbormaster Questionnaire requesting information related to designated or traditional storm anchorages, navigation, riparian ingress and egress, and fishing or other uses of the area, among other considerations. A response was received from the Harbormaster on August 10, 2023. Notice of the complete application and comment period was published in the June 29, 2023, edition of *The Courier-Gazette*. Title 12 M.R.S.A. § 6072-A (6) provides that the Commissioner shall hold a public hearing if five or more persons<sup>3</sup> request a public hearing within the 30-day comment period. The comment deadline expired on July 29, 2023. No requests for a public hearing were received during the comment period, and no hearing was conducted. The evidentiary record regarding this lease application includes the application, DMR's site report dated January 7, 2025, and the case file. The evidence from each of these sources is summarized below.<sup>4</sup>

**LIST OF EXHIBITS**

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<sup>1</sup> Applicant originally requested 3.99 acres. DMR calculations indicate the area is 3.98 acres.

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

<sup>3</sup> Title 12 M.R.S.A. §6072-A (6) now requires 10 or more hearing requests to be received for the Commissioner to hold a hearing, however, at the time of this comment period, the requirement was five or more.

<sup>4</sup> These sources are cited, with page references, as App (Application), CF (case file), and SR (site report).

1. Case file
2. Application
3. DMR site report, issued on January 7, 2025

## 2. DESCRIPTION OF THE PROJECT

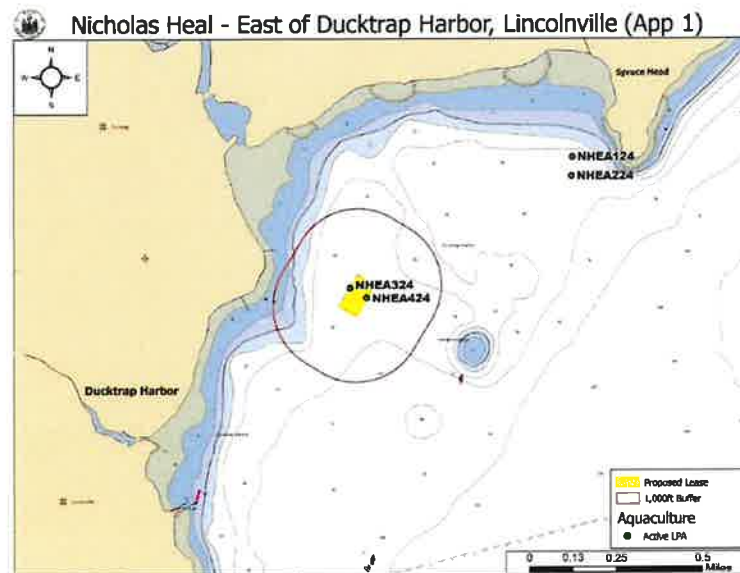
### A. Site History

Two limited purpose aquaculture (LPA) sites (NHEA324 and NHEA424) are located within the boundaries of the proposal and are licensed to the applicant, Nicholas Heal, for the culture of marine algae.

### B. Proposed Operations

The purpose of the proposed experimental lease site is to determine the viability of culturing marine algae at this location (App 5). The applicant is proposing to culture sugar kelp (*Saccharina latissima*), skinny kelp (*Saccharina angustissima*), winged kelp (*Alaria esculenta*), horsetail/fingered kelp (*Laminaria digitata*), shotgun kelp (*Agarum clathratum*)<sup>5</sup>, dulse (*Palmaria palmata*), Irish moss (*Chondrus crispus*), and sea lettuce (*Ulva lactuca*) using twenty-five 500-foot longlines. The applicant also proposes a cross-line, counterweights, moorings with lines and chains, PVC pipe, and buoys (App 14).

According to the application, all gear, except moorings and marker buoys, will be removed from June 16 to October 14 every year (App 6).



<sup>5</sup> Application states the scientific name as *Agarum cribosum*, however, the current accepted scientific name is *Agarum clathratum*.

**Figure 1:** Aquaculture leases and LPA licenses in the vicinity of the proposed lease area. Image generated by DMR staff.<sup>6</sup>

### **C. Site Characteristics**

On July 30, 2024, DMR scientists assessed the proposed lease site. The general characteristics of the area surrounding the proposed lease consisted of rocky coastline leading to forested uplands with residential lawns and one sandy beach in the vicinity (SR 2).



**Figure 2.** Proposed lease area with site visit observations. Image from DMR site report.

## **3. STATUTORY CRITERIA & FINDINGS OF FACT**

Approval of experimental aquaculture leases is governed by 12 M.R.S.A. §6072-A. This statute provides that a lease for commercial aquaculture research and development or for scientific research may be granted by the Commissioner of DMR upon determining that the project will not unreasonably interfere with the ingress and egress of riparian owners; with navigation; with fishing or other uses of the area, taking into consideration other aquaculture uses in the area; with the ability of the lease site and surrounding areas to support existing ecologically significant flora and fauna; or with the public use or enjoyment within 1,000 feet of beaches, parks, or docking facilities owned by municipal, state, or federal governments. The Commissioner must also determine that the applicant has demonstrated that there is an available source of organisms to be cultured for the lease site.

### **A. Riparian Access**

<sup>6</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.

Before granting a lease, the Commissioner must determine that the proposed project “will not unreasonably interfere with the ingress and egress of riparian owners[.]” 12 M.R.S.A. § 6072-A(13)(A). In examining riparian owner ingress and egress, the Commissioner “shall consider the type of structures proposed for the lease site and their potential impact on the vessels which would need to maneuver around those structures.” Chapter 2, § 2.37(1)(A)(1).

DMR did not observe any docks, moorings, or land within 1,000 feet of the proposal. Four moorings were observed northwest of the proposal with the closest approximately 1,131.5 feet northwest. One mooring was occupied with a 25-foot sailboat, and all others were unoccupied at the time of the site visit. DMR observed one pier approximately 1,290.8 feet northwest of the proposal (Figure 2). At the time of the site visit, there was no associated dock in the water. The closest shoreline to the proposal is 1,106.8 feet to the west at mean low water (MLW). A completed Harbormaster Questionnaire submitted to DMR on August 10, 2023, stated that riparian ingress and egress would not be affected (SR 4).

In evaluating riparian ingress and egress, the commissioner must consider the following pursuant to Chapter 2.37(A)(1):

The Commissioner shall examine whether the riparian owners can safely navigate to their shore. The Commissioner shall consider the type of shore involved and the type of vessel that can reasonably land on that shore. The Commissioner shall consider the type of structures proposed for the lease and their potential impact on the vessels which would need to maneuver around those structures.

Given the distance to riparian structures, and the Harbormaster’s comments concerning riparian ingress and egress, the proposed lease will not adversely impact riparian access.

**Therefore**, the aquaculture activities proposed for this site will not unreasonably interfere with the ingress and egress of any riparian owner.

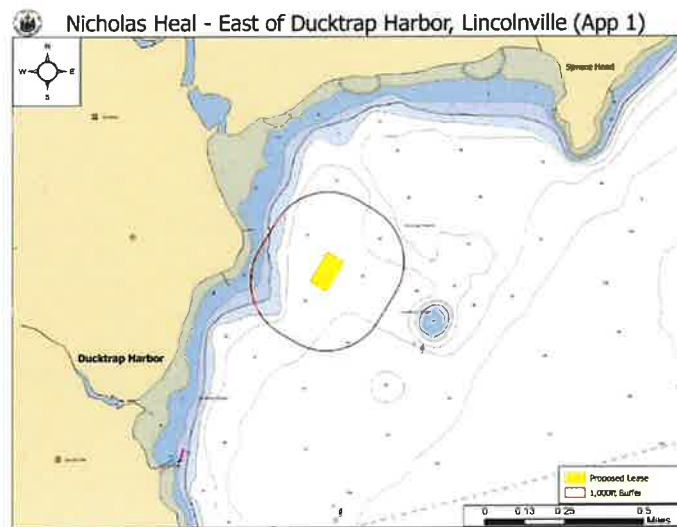
## **B. Navigation**

When examining navigation, the Commissioner considers whether the lease activities would interfere with commercial or recreational navigation around the lease area and considers the current uses of the navigational channels in the area. 12 M.R.S.A. § 6072-A(13)(B); Chapter 2.37(1)(A)(2).

The proposal is located approximately 1,876.6 feet northwest of the U.S. Coast Guard red navigational buoy “2” that marks the northern edge of the navigational channel approaching Ducktrap Harbor and is approximately 1,106.8 feet east of the nearest shoreline at MLW (Figure 3).

During DMR’s site visit, one recreational powerboat was observed transiting along the shoreline to the north of the proposed lease, and a ferry was observed operating to the south of the proposed lease. The Harbormaster stated in the Harbormaster Questionnaire that the proposal would minimally affect

navigation within the area as it relates to historic scallop dragging (SR 5). Impacts to fishing are addressed in Section C.



**Figure 3.** Navigational channels in the vicinity of the proposal. Image from DMR site report.

In evaluating navigation, the commissioner must consider the following pursuant to Chapter 2.37(A)(2):

The Commissioner shall examine whether any lease activities requiring surface and or subsurface structures would interfere with commercial or recreational navigation around the lease area. The Commissioner shall consider the current uses and different degrees of use of the navigational channels in the area in determining the impact of the lease operation.

Given the distance to the designated navigation channel, available area and water depths surrounding the lease area, and the Harbormaster's comments indicating the proposal would minimally affect navigation within the area, the proposed lease will not unreasonably interfere with navigation.

**Therefore,** the aquaculture activities proposed for this site will not unreasonably interfere with navigation.

### **C. Fishing & Other Uses**

When examining fishing and other uses, the Commissioner considers whether the lease activities would unreasonably interfere with commercial or recreational fishing or other uses, including water-related uses, of the area. 12 M.R.S.A. § 6072-A(13)(C); Chapter 2.37(1)(A)(3).

**Fishing.** During the site visit, DMR documented four lobster buoys within 1,000 feet of the proposal (Figure 2). The closest lobster buoy to the proposed lease was approximately 450.8 feet to the east. No active commercial or recreational fishing was observed during the site visit.

The Harbormaster stated in the Harbormaster Questionnaire that there is minimal commercial lobstering in the area around the proposed lease, and that the area has been occasionally dragged for scallops in the past (SR 6).

The application states there is limited recreational fishing and some lobstering in this area. However, the application states these activities are rare at the time of year the gear would be deployed. The application also states that some scallop fishing occurs in the general area, but not near the lease proposal (App 8).

In evaluating fishing and other uses, the commissioner must consider the following pursuant to Chapter 2.37(A)(3):

The Commissioner shall examine whether the lease activities would unreasonably interfere with commercial or recreational fishing or other water-related uses of the area. This examination shall consider such factors as the number of individuals that participate in recreational or commercial fishing, the amount and type of fishing gear utilized, the number of actual fishing days, and the amount of fisheries resources harvested from the area.

Given the limited level of activity reported, the timing of gear deployment, and the Harbormaster's comments indicating that fishing activity is minimal or occasional within the area, the proposed lease will not unreasonably interfere with commercial and recreational fishing activities in the area.

**Other uses.** According to the application, any recreational activities in the area would occur in the summer when gear is not deployed on-site (App 8). Given the timing of gear deployment and available area surrounding the lease, the lease as proposed would not prevent recreational activities from occurring in the area.

**Therefore,** the activities proposed for this site will not unreasonably interfere with fishing or other water related uses of the area.

#### **D. Other Aquaculture Uses**

In considering the proposal's effect on other uses of the area pursuant to 12 M.R.S.A. § 6072-A(13)(C), DMR's Chapter 2 regulations require the Commissioner to consider any evidence submitted concerning other aquaculture uses of the area. "The intensity and frequency of such uses as well as the degree of exclusivity required for each use shall be a factor in the Commissioner's determination of whether any interference is unreasonable. The number, size, location, and type of other aquaculture leases shall be considered by the Commissioner." Chapter 2, § 2.37(1)(A)(4).

There are two limited purpose aquaculture (LPA) sites within 1,000 feet of the proposal. NHEA324 and NHEA424 are located within the boundaries of the proposal and are licensed to the applicant Nicholas Heal (Figure 1).<sup>7</sup> There are no other LPAs or aquaculture leases within 1,000 feet of the proposed lease site (SR 6).

Given that the only aquaculture activities within 1,000 feet are LPAs licensed to the applicant, the lease as proposed will not interfere with existing aquaculture in the area.

**Therefore**, the aquaculture activities proposed for this site will not unreasonably interfere with existing aquaculture uses in the area.

### **E. Flora & Fauna**

When examining existing system support, the Commissioner considers the degree to which the use of the lease site will interfere with significant wildlife habitat and marine habitat or with the ability of the lease site and marine and upland areas to support ecologically significant flora and fauna (12 M.R.S.A. § 6072-A(13)(D); Chapter 2, § 2.37(1)(A)(5)).

On July 30, 2024, DMR scientists conducted a SCUBA dive to assess the epibenthic ecology of the proposed lease. Fig sponge (*Suberites ficus*) and rock crab (*Cancer irroratus*) were found to be common on the site (SR 7).

### **Eelgrass (*Zostera marina*)**

Records of eelgrass collected by DMR in 2010 indicate no mapped eelgrass presence within 1,000 feet of the proposal. The nearest mapped eelgrass is approximately 1,119.3 feet west of the proposed lease.<sup>8</sup> No eelgrass was observed within the proposal boundaries during DMR's site assessment (SR 7).

### **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 1,119.3 feet to the east 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. 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 (SR 8-9).<sup>9</sup>

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<sup>7</sup> NHEA324 and NHEA424 were licensed after this application was deemed complete by DMR.

<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.

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

During the site assessment, DMR scientists observed double-crested cormorant (*Nannopterum auritum*), black guillemot (*Cepphus grylle*), and a loon (*Gavia immer*) in the general vicinity of the proposal (SR 8).

Given MDIFW's comment and the absence of eelgrass, the proposed activities will not unreasonably interfere with the ability of the lease site and surrounding areas to support existing ecologically significant flora and fauna.

**Therefore**, the aquaculture activities proposed will not unreasonably interfere with the ability of the lease site and surrounding areas to support existing ecologically significant flora and fauna.

#### **F. Public Use & Enjoyment**

When examining interference with public facilities, the Commissioner considers the degree to which the lease interferes with public use or enjoyment within 1,000 feet of a beach, park, or docking facility owned by the Federal Government, the State Government, or a municipal government (12 M.R.S.A. § 6072-A(13)(F); Chapter 2.37(1)(A)(7)) and 2.64(11)(A)).

There are no beaches, parks, or docking facilities owned by federal, state, or municipal government within 1,000 feet of the proposed lease site.

**Therefore**, the aquaculture activities proposed for this site will not unreasonably interfere with public use or enjoyment within 1,000 feet of beaches, parks, or docking facilities owned by federal, state, or municipal governments.

#### **G. Source of Organisms**

When examining the source of organisms, the Commissioner shall include but not be limited to, consideration of the source's biosecurity, sanitation, and applicable fish health practices (12 M.R.S.A. § 6072-A(13)(E); Chapter 2.37(1)(A)(6)).

The applicant proposes to obtain sugar kelp (*Saccharina latissima*), skinny kelp (*Saccharina angustissima*), winged kelp (*Alaria esculenta*), horsetail/fingered kelp (*Laminaria digitata*), shotgun kelp (*Agarum clathratum*)<sup>10</sup>, dulse (*Palmaria palmata*), Irish moss (*Chondrus crispus*), and sea lettuce (*Ulva lactuca*) from Atlantic Sea Farms (ASF) (Biddeford, Maine). ASF is an approved source of stock for all of these species except *Ulva lactuca*. ASF has a land-based aquaculture license for the culture of *Ulva fenestrata*, a different species of sea lettuce, replacing the previously cultured *Ulva lactuca*. Due to this change in source for sea lettuce, *Ulva fenestrata*, not *Ulva lactuca* will be approved for the lease.

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<sup>10</sup> Application states the scientific name as *Agarum cribosum*, however the current accepted scientific name is *Agarum clathratum*.

**Therefore**, the applicant has demonstrated that there is an available source of stock to be cultured for the lease site.

#### **4. CONCLUSIONS OF LAW**

Based on the above findings:

1. The aquaculture activities proposed for this site will not unreasonably interfere with the ingress and egress of riparian owners.
2. The aquaculture activities proposed for this site will not unreasonably interfere with navigation.
3. The aquaculture activities proposed for this site will not unreasonably interfere with fishing uses of the area.
4. The aquaculture activities proposed for this site will not unreasonably interfere with other uses of the area, specifically existing aquaculture uses of the area.
5. The aquaculture activities proposed will not unreasonably interfere with the ability of the lease site and surrounding areas to support existing ecologically significant flora and fauna.
6. The aquaculture activities proposed for this site will not unreasonably interfere with the public use or enjoyment within 1,000 feet of beaches, parks, or docking facilities owned by municipal, state, or federal governments.
7. The applicant has demonstrated that there is an available source of stock to be cultured for the lease site.

Accordingly, the evidence in the record supports the conclusion that the proposed aquaculture activities meet the requirements for the granting of an aquaculture lease set forth in 12 M.R.S.A. §6072-A.

#### **5. DECISION**

Based on the foregoing, the Commissioner grants the application for a proposed experimental lease of 3.98 acres to Nicholas Heal, for three years, the term of the lease to begin within twelve months of the date of this decision, on a date chosen by the lessee<sup>11</sup>; however, no aquaculture rights shall accrue in the lease area until the lease is fully executed.

This lease is granted to the lessee for the suspended cultivation of sugar kelp (*Saccharina latissima*), skinny kelp (*Saccharina angustissima*), winged kelp (*Alaria esculenta*), horsetail/fingered kelp (*Laminaria digitata*), shotgun kelp (*Agarum clathratum*), dulse (*Palmaria palmata*), Irish moss

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<sup>11</sup> DMR Rule 2.64 (14) provides:

“The term of the lease shall begin within 12 months of the Commissioner’s decision, on a date chosen by the applicant. No aquaculture rights shall accrue in the lease area until the lease term begins and the lease is signed.”

(*Chondrus crispus*), and sea lettuce (*Ulva fenestrata*). The lessee shall pay the State of Maine rent in the amount of \$100.00 per acre per year. Because this is an experimental lease with more than 400 square feet of structures and no discharge, a bond or escrow account is required. The lessee shall post a bond or establish an escrow account pursuant to DMR Rule Chapter 2.64 (12)A in the amount of \$5,000.00, conditioned upon performance of the obligations contained in the aquaculture lease documents and all applicable statutes and regulations.

#### **6. CONDITIONS TO BE IMPOSED ON LEASE**

The Commissioner may establish conditions that govern the use of the lease area and impose limitations on aquaculture activities, pursuant to 12 M.R.S.A §6072-A (15) and 2.64(11)(B). Conditions are designed to encourage the greatest multiple compatible uses of the lease area, while preserving the exclusive rights of the lessee to the extent necessary to carry out the purposes of the lease. No conditions shall be imposed on this lease.

#### **7. REVOCATION OF EXPERIMENTAL LEASE**

The Commissioner may commence revocation procedures upon determining pursuant to 12 MRSA §6072-A (22) that no substantial aquaculture or research has been conducted on the site over the course of the lease, that aquaculture has been conducted in a manner substantially injurious to marine organisms, or that any condition of the lease or any applicable laws or regulations have been violated.

Dated: 6.3.2025



**Carl J. Wilson, Commissioner**

**Department of Marine Resources**