

STATE OF MAINE
DEPARTMENT OF MARINE RESOURCES

Lake Lindelof
PEN MIx

Experimental Aquaculture Lease Application
Suspended Culture of Marine Algae
Penobscot Bay, Islesboro, Maine

FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION

Lake Lindelof applied to the Department of Marine Resources (DMR) for a 3.98¹ acre experimental lease west of Middle Island in Penobscot Bay for the suspended culture of sugar kelp (*Saccharina latissima*), skinny kelp (*Saccharina angustissima*), winged kelp (*Alaria esculenta*), horsetail/fingered kelp (*Laminaria digitata*), dulse (*Palmaria palmata*), and sea lettuce (*Ulva lactuca*) for commercial aquaculture research and development.

1. PROCEDURAL HISTORY

DMR accepted the application as complete on March 8, 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 Islesboro 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. No response was received from the Harbormaster. Notice of the complete application and comment period was published in the March 23, 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 request a public hearing within the 30-day comment period. No requests for a public hearing were received during the comment period and DMR opted not to hold a hearing for this proposal. The evidentiary record regarding this lease application includes the application, DMR's site report dated April 30, 2024, and the case file. The evidence from each of these sources is summarized below.²

LIST OF EXHIBITS

1. Case file
2. Application

¹ Applicant originally requested 4.0 acres. DMR calculations indicate the area is 3.98 acres.

² These sources are cited, with page references, as App (Application), CF (case file), and SR (site report).

3. DMR site report, issued on April 30, 2024

2. DESCRIPTION OF THE PROJECT

A. Proposed Operations

The purpose of the proposed experimental lease site is to determine the viability of the site for commercial aquaculture (App 5). The applicant is proposing to culture marine algae using fifteen 1,000 linear foot longlines, plus buoys, depth control weights, pvc pipes, and mooring lines, chains, and blocks. The moorings and mooring components would remain on-site year-round, but all other gear would be removed from June 16-October 14 (App 14). The applicant intends to seed the lines in October or November for 2-5 days and to tend the farm from December to April two to four times a month, weather depending (App 5, 6). Harvesting would occur in May or June and would take approximately five days (App 5). A hydraulic lobster pot hauler (mounted on the applicant's boat) to lift the longlines onto the boat for harvest is the only machinery proposed for on-site use (App 7).



Figure 1: Vicinity map. Image generated by DMR staff.³

³ 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.

B. Site Characteristics

On September 28, 2023, DMR scientists assessed the proposed lease site. The western shore of Middle Island, in the vicinity of the proposal, consists of rocky coastline leading to forested uplands and is undeveloped. The bottom of the proposed lease area is composed of mud (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

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). DMR’s Chapter 2 regulations⁴ require the Commissioner to examine whether riparian owners can safely navigate to their shore. 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).

During the site assessment, DMR did not observe any docks, houses, or moorings in the vicinity of the proposal. Nearby Job and Middle Islands, located to the east of the proposal, are uninhabited and no docks or other structures were observed at the time of the site visit (SR 4).

The applicant stated that there are no docks, moorings, landings, or boats on shore within 1,000 feet of the proposed site (App 8). A Harbormaster Questionnaire was sent to the Islesboro Harbormaster, but no response was received. DMR did not receive any comments from the public regarding this proposal. The proposal is located near Job and Middle Islands, which were undeveloped, and no docks or moorings were observed.

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). In examining navigation, 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.” Chapter 2, § 2.37(1)(A)(2).

The proposal is located approximately 394 feet to the west of Job Island at mean low water (MLW). There is approximately 3,881 feet of navigable water between the proposal and the eastern shore of Haskell Ledge at MLW. The proposal is approximately 1,900 feet east of the center of the nearest navigational channel. No vessel traffic was observed during the site visit (SR 5).

⁴ 13-188 C.M.R. ch. 2. The Commissioner considers the applicable criteria contained in Chapter 2.37 pursuant to Chapter 2.64(11)(A).

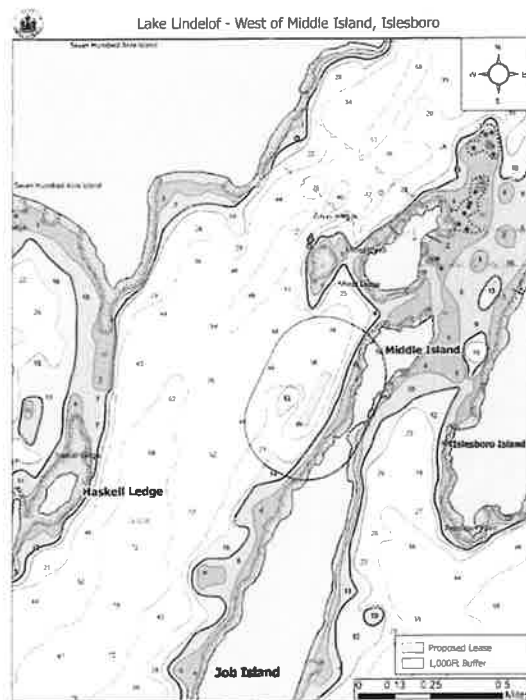


Figure 3. Navigational channels in the vicinity of the proposal. Image from DMR site report.

The application states that there are occasional lobster and recreational vessels that transit in the area (App 8). A Harbormaster Questionnaire was sent to the Town of Islesboro. No response was received by DMR. No comments regarding impacts to navigation were received by DMR. The proposed lease site is ~1,900 feet from the nearest navigational channel and ~394 feet to the west of Job Island at mean low water (MLW). Given these distances there would be adequate area for the types of vessels observed by the applicant to navigate.

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. In examining fishing and other uses, the Commissioner “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.” Chapter 2, § 2.37(1)(A)(3).

During the site visit, DMR documented lobster buoys within the bounds of and in the general vicinity of the proposal. DMR recorded the location of buoys closest to the proposal, as seen in Figure 2. One lobster buoy was located within the bounds of the proposed lease and another lobster buoy was nearby at approximately 14.8 feet west of the proposal boundaries. Three additional lobster buoys were observed in the vicinity of the proposed lease. During the DMR site visit, there was also moderate lobstering activity observed to the west of the proposal (SR 5).

The application states that there is very little commercial fishing in the lease area from June to October when the full gear would be deployed (App 8). The application also states that no recreational fishing has been observed in the area (App 8). No comments regarding impacts to fishing were received by DMR. Additionally, no concerns were expressed by the harbormaster about impacts from the proposed lease on fishing in the project area.

Although commercial fishing does occur in the area and some buoys were observed in the boundaries of the proposed site, it has been observed by the applicant to occur from June to October. DMR staff did observe moderate lobstering activity to the west of the proposal during their site visit. The site visit took place in September, in line with the range of months in which lobstering occurs that was supplied by the applicant. The applicant has stated that all long lines and gear used in the proposal would be removed from June to October, directly correlating with the range of months in which commercial fishing occurs in the area.

Given the lack of public comment, the light level of fishing activity, and the timeframe gear would be fully deployed, it is unlikely that the proposed lease will interfere with commercial and recreational fishing activities in the area.

Other uses. According to the application, no swimming or kayaking has been observed in the area (App 8). No comments regarding impacts to other uses of the lease area were received by DMR.

Other aquaculture uses. 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 no aquaculture leases within 1,000 feet of the proposed lease site. There is one limited purpose aquaculture (LPA) site (NZLO124) located 603.3 feet to the northwest of the proposed site (SR 6). Given this distance, it is unlikely that the proposed lease site will impact operations at the LPA site.

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

D. 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)). “Such factors as the degree to which physical displacement of rooted or attached marine vegetation occurs, the amount of alteration of current flow, increased rates of sedimentation or sediment resuspension, and disruption of finfish migration shall be considered by the Commissioner in this determination.” Chapter 2, § 2.37(1)(A)(5).

On September 28, 2023, DMR utilized a remotely-operated vehicle to assess the epibenthic ecology of the proposed lease. Crab (*Cancer* sp.) and shrimp (*Crangon septemspinosa*) were common at the proposed lease site (SR 5-6).

Eelgrass (*Zostera marina*)

Historical records of eelgrass collected by DMR in 2010 indicate mapped eelgrass presence in the vicinity of the proposal. The nearest mapped eelgrass is approximately 346.3 feet east of the proposal (Figure 4).⁵ During DMR’s site assessment, a small patch of eelgrass was observed on underwater camera footage within the proposal boundaries. The small patch of eelgrass was rooted to the seafloor and very sparse. Water depth in this general area is approximately 34.3 to 39.0 feet at MLW.

Eelgrass is typically found in shallower water depths in subtidal to low intertidal areas to allow for adequate light penetration. DMR expects seasonal regrowth of eelgrass to occur in April/May and seasonal senescence of eelgrass to occur in October/November. The applicant is proposing to seasonally culture marine algae on longlines from October/November to June.⁶

⁵ 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.

⁶ Application page 5



Figure 4. Mapped eelgrass (*Z. marina*) in the vicinity of the proposed lease area. Image from DMR site report.

Discussion. Eelgrass beds form an important marine and estuarine coastal aquatic habitat. While DMR observed rooted eelgrass during the site assessment, it was classified as one small patch with very sparse blades. Given the density and condition of the eelgrass, the water depths, and the seasonality of the proposed lease activity, it is reasonable to conclude any impact from the proposed lease on eelgrass will be minimal.

Fauna

DMR also observed common eiders (*Somateria mollissima*), black guillemots (*Cepphus grylle*), double-crested cormorants (*Nannopterum auritum*), common loons (*Gavia immer*), seals (Subfamily: *Phocidae*) and herring gulls (*Larus argentatus*) in the general vicinity of the proposal. 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 346.3 feet to the west of mapped Tidal Waterfowl and Wading Bird Habitat. Data collected by the United States Fish and Wildlife Service in 2023 by aerial nest survey shows the closest mapped bald eagle nesting site to be approximately 0.77 miles southwest of the proposal. A bald eagle (*Haliaeetus leucocephalus*) was observed during the site assessment.

On June 22, 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.⁷

Based on the evidence, it is unlikely the proposed activities will interfere with the ability of the lease site and surrounding areas to support existing ecologically significant fauna.

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

E. 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 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, § 2.37(1)(A)(7); Chapter 2, § 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.

F. 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, § 2.37(1)(A)(6).

The applicant proposes to obtain all marine algae stock from Atlantic Sea Farms in Biddeford, Maine. This is an approved source for stock. If the applicant is unable to obtain stock from this hatchery, then it must come from another DMR approved source.

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

⁷ Email correspondence between MDIFW and DMR

4. CONCLUSIONS OF LAW

Based on the above findings, the Department concludes that:

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 or other uses of the area.
4. 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.
5. 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.
6. 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 requested experimental lease of 3.98 acres to Lake Lindelof, 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 lessee⁸; however, no aquaculture rights shall accrue in the lease area until the lease is fully executed.

This lease for 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*), dulse (*Palmaria palmata*), and sea lettuce (*Ulva lactuca*). 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

⁸ 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.”

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 are 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: _____

10/16/24



Patrick C. Keliher, Commissioner
Department of Marine Resources