

**STATE OF MAINE
DEPARTMENT OF MARINE
RESOURCES**

**Christopher Green
MID Wlx**

Experimental Aquaculture Lease Application
Suspended Culture of Shellfish
Harpswell, Maine

FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION

Christopher Green applied to the Department of Marine Resources (DMR) for a three-year experimental aquaculture lease located near White Island, in Middle Bay, Harpswell, Cumberland County. The proposed lease is 3.91¹ acres and is for the suspended cultivation of hard clams/quahogs (*Mercenaria mercenaria*) and soft-shelled clams (*Mya arenaria*). DMR accepted the application as complete on February 3, 2022.

1. THE PROCEEDINGS

Notice of the application and the 30-day public comment period was provided to state and federal agencies, riparian landowners, the Town of Harpswell and its Harbormaster, and others on DMR's mailing list. Notice of the complete application and comment period was published in the February 18, 2022 edition of the *Forecaster*. Title 12 M.R.S. §6072-A (6) provides that the Commissioner shall hold a public hearing if 5 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, so no hearing was conducted. The evidentiary record regarding this lease application includes the application, DMR's site report dated December 7, 2022, and the case file. The evidence from each of these sources is summarized below.²

2. DESCRIPTION OF THE PROJECT

A. Proposed Operations

¹ The applicant originally requested 4.00 acres. Department calculations, based on the provided coordinates, indicate the area is 3.91 acres.

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

The purpose of the proposed experimental lease site is to determine if the site is suitable for aquaculture (App 5). The applicant is proposing to culture shellfish using a maximum of 10,800 soft nylon grow bags (3-foot by 4-foot), eight collection boxes (2-foot by 4-foot), and 120 rows of predator netting (4-foot by 290-foot, 3/4" x 1" wire mesh) as well as corner marker buoys (App 15). Clams are proposed to be cultured on the bottom. Seed would be planted on the bottom or grown out in soft grow bags resting on the ocean floor and would not be floating. PVC collection boxes may be staked to the bottom and predator netting may be deployed to cover all of the seed and grow bags within the lease area. Product would be harvested by hauling bags up from the bottom onto a boat or hand harvesting at low tide. The applicant proposes to tend the site throughout the year, and gear may be left on the site year-round (App 6).

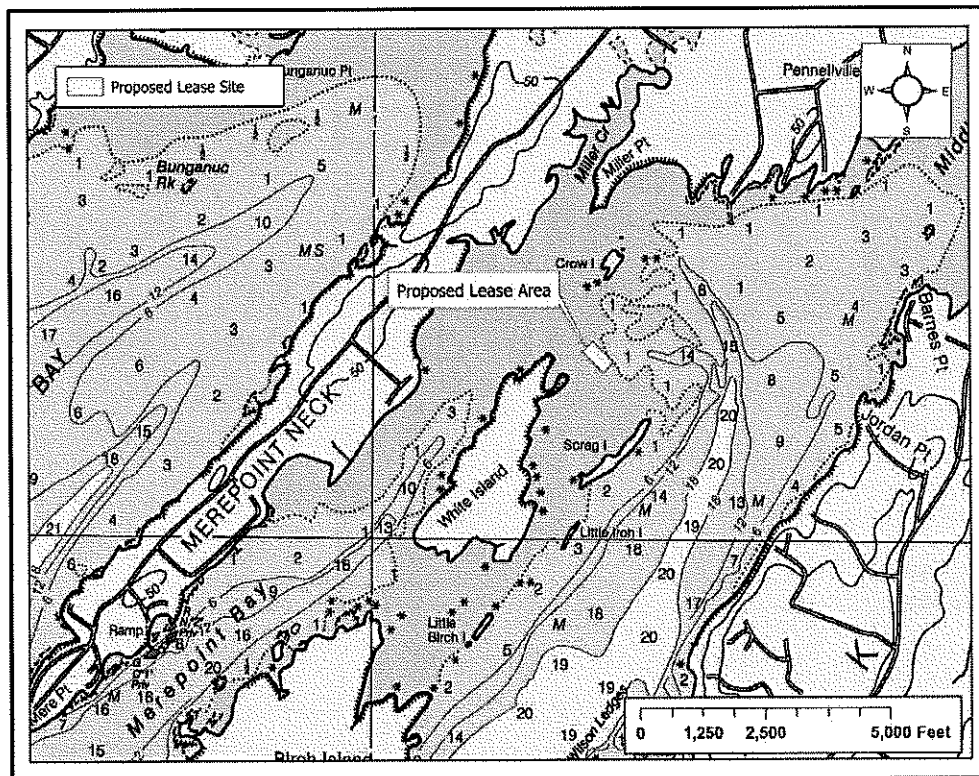


Figure 1: Vicinity map³

³All figures in this report were created in ArcGIS Pro 2.9 using digitized NOAA Nautical Charts or geo-referenced aerial photographs provided by The Maine Office of GIS (orthoCoastalCascoBay2018 and orthoRegionalMidcoast 2009).

B. Site Characteristics

On August 24, 2022, Department staff visited the proposed experimental aquaculture lease site. The proposed lease occupies intertidal waters between Merepoint Neck, Scrag Island, White Island and Crow Island in Middle Bay, Casco Bay (Figure 1). According to NOAA navigational charts almost all the area in between Merepoint Neck and the above-mentioned islands is mudflat at low tide. Adjacent shorelines are rocky with marsh grass. Nearby islands have generally rocky shorelines with forested interiors. Nearby uplands are residential and primarily forested with some fields and lawns around residences. (SR 2).

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 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 water related 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 available source of organisms to be cultured on the lease site.

A. Riparian Access

The proposed lease is in the intertidal zone between Crow Island and White Island in Middle Bay. During the Department's August 24, 2022 site visit, approximately three to four docks were observed along the Merepoint Neck shoreline and a small mooring field for small boats was observed to the north along the Merepoint Neck shoreline. Due to water depths and tidal cycle, close observations of the Merepoint Neck shoreline were not possible and visual observations were made from approximately 1/2 mile away. There were no moorings observed near the proposed lease site. Due to the intertidal nature of the area most shorefront houses were not observed to have docks or moorings. Aerial imagery from June of 2020 showed the presence of at least eleven shorefront properties and only four docks along the Merepoint Neck shoreline opposite the site. A channel to the west of White Island in Merepoint Bay also provides access to the Merepoint Neck shoreline and surrounding area. Due to extensive intertidal flats in the area and the distance between the proposal and observed riparian access points, the proposed lease would be unlikely to cause a greater challenge to riparian access than

natural features of the area (SR 9). Additionally, the applicant obtained permission from the landowners of White Island, Scrag Island, and Crow Island to place the lease in the intertidal associated with the parcels as required by 12 M.R.S.A. §6072(4)F.

A Harbormaster Questionnaire was requested from the Harpswell Harbormaster on February 14, 2022. No response was received. During the comment period, DMR did not receive any comments regarding 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

The proposed lease is located in the intertidal zone between White Island and Crow Island in Middle Bay. Although Middle Bay and Merepoint Bay can experience significant recreational traffic and some commercial traffic, the site is in the intertidal zone and over 600 feet away from the nearest deeper water subtidal channel. Small, depth-appropriate vessels, and kayaks are likely to transit the general area when water depths permit. During the Department's site assessment on August 24, 2022, two kayakers were seen paddling around the islands and in the area to the west of the proposed site. A small motorboat was also seen transiting to the southwest of the site. To the southwest of the proposed lease and White Island is Merepoint Bay. There is a public boat launch, marina, and mooring field in the deeper waters of Merepoint Bay. However, the deeper, navigable waters of the bay end approximately 3,000 feet to the southwest, and navigable waters of Middle Bay are approximately 2,000 feet to the east. The applicant proposes the use of sunken soft bags and predator netting so there is the potential for vessels to become fouled in gear on the site at certain tide levels. It will be important for the applicant to maintain appropriate site markings, as indicated in Chapter 2 (Aquaculture Lease Regulations) of the Department's Regulations (SR 9).

A Harbormaster Questionnaire was requested from the Harpswell Harbormaster on February 14, 2022. No response was received.

Based on the evidence, it appears that the Department's standard site marking requirements will mitigate potential impacts on navigation.

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

C. Fishing & Other Uses

Fishing. At the time of the Department's site assessment on August 24, 2022, no fishing activity or gear was observed in the area where the proposed lease is located. Schools of Atlantic menhaden (*Brevoortia tyrannus*), locally known as pogie, were observed in the deeper waters along the eastern shore of Middle Bay. The applicant indicates that pogie fishing occurs to the east, north and south of Scrag Island during the commercial season but the applicant indicates that waters around the proposed site are too shallow for fishing. However, Department scientists familiar with menhaden fishing techniques have indicated that seine boats can, and do, fish in the intertidal area when water depth permits (SR 9). The applicant also indicates that recreational fishing for striped bass occurs in the area during the summer months, when water depths permit, but access is limited (App).

During the August 24, 2022 site visit, Department staff only observed a total of three live quahogs (*Mercenaria mercenaria*) across ten bull rake sample locations within the proposed site. No other live shellfish were observed in any samples. The applicant indicates that they have observed no commercial shellfish harvesting in the area in more than 20 years but that clam boats are observed travelling through the area at mid-tides. The applicant also indicates that this information was confirmed by the harbormaster and local coastal resource manager (App 7). DMR Aquaculture Division utilizes the Merepoint boat launch, located southwest of the site, regularly for field operations, and staff have also observed clam harvest boats, such as airboats, approaching the boat launch from the north in the vicinity of the Merepoint Bay and Middle Bay mud flats (SR 10).

Title 12 M.R.S.A. §6072-A(11) states in any municipality with a shellfish conservation program under 12 M.R.S.A § 6671, the commissioner may not issue a limited-purpose lease under this section for the intertidal zone within the municipality without the consent of the municipal officers. As the Town of Harpswell has a shellfish conservation program, the applicant presented the project to the Harpswell Marine Resource Committee on October 26, 2021. On November 4, 2021, the Town of Harpswell Municipal Officers issued a letter of support for the use of the intertidal area by the applicant.

Given the absence of public comments expressing concern regarding interference with fishing, the water depths at the project site, and the Department's site observations, it is reasonable to conclude that there are no concerns regarding the potential effect of the proposed lease on commercial and recreational fishing activities in the area.

Exclusivity. The applicant has requested that dragging and all shellfish harvesting be prohibited within the boundaries of the proposed lease site (App 10). Due to the water depths

and the applicant's indication that fishing activities are limited in the area, no condition for exclusivity will be granted for the lease.

Other aquaculture uses. Fourteen Limited Purpose Aquaculture (LPA) licenses and one lease are located within one mile of the proposed lease. The closest active aquaculture activity to the proposal is LPA license DWIL422 which is permitted for an upweller for the culture of shellfish and located over 900 feet from the proposed lease. Also nearby is commercial lease MIDD CI which is over 1,000 feet away and permitted for the suspended and bottom culture of shellfish (SR 10).

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

D. Flora & Fauna

Historical eelgrass (*Zostera marina*) data collected by the Maine Department of Environmental Protection in partnership with the Casco Bay Estuary Partnership indicate that, in 2018, the closest observed eelgrass bed was located over 700 feet to the northeast of the boundary of the proposed lease at corner 1. The area within the proposal was a mapped eelgrass bed in 2010 but, DMR assessed the bottom of the proposed lease during the site visit on August 24, 2022 and did not observe eelgrass at the bull-rake sample locations. No reductions to the proposed lease boundaries are recommended by Department science staff due to the fact that no eelgrass was observed. If the proposed lease is granted, rake and drag harvest activities, which could harm eelgrass beds, should only occur within the proposed lease boundaries. Due to the intertidal nature of the proposed lease, if eelgrass beds were to establish within the proposed lease area they could be observed from the surface at lower tidal stages and could therefore be avoided by harvesters (SR 13).

Seals were observed in the general vicinity during the August 24, 2022, site visit. The species of seal observed was most likely the harbor seal (*Phoca vitulina*). Schools of Atlantic Menhaden (*Brevoortia tyrannus*) were observed in deeper water to the east of the proposed site.

According to GIS (Geographic Information System) data maintained by the Maine Department of Inland Fisheries and Wildlife (MDIF&W) and available through the Maine Office of GIS, the proposed lease overlaps with Tidal Wading Bird and Waterfowl Habitat, which is defined under Maine's Natural Resources Protection Act (NRPA) as Significant Wildlife Habitat (SR 12).

On April 1, 2022, Rebecca Settele (Wildlife Biologist, MDIF&W) responded by email to a "Request for Agency Review and Comment" stating "The proposed aquaculture project intersects with both Tidal Waterfowl and Wading Bird Habitat and Reef-Mudflat Complex. If total exclusion nets will be used to deter and exclude predatory sea ducks from the facility, we recommend a maximum mesh size of 6 inches with 3mm twine or larger for excluding eiders, and a maximum mesh size of 4 inches with twine of 3mm or larger for excluding scoters. Mesh larger than 6 inches (15cm) and paired with small twine of less than or equal two 2mm has been shown most likely to cause sea bird entanglement. We also recommend no gear be placed at less than 3' mean low water and that all gear is labeled. Activities in the intertidal zone should be minimized to the extent practicable."

MDIF&W was contacted for additional information and, in an email from December 7, 2022, Rebecca Settele indicated that the details of the proposed predator exclusion netting were reviewed by MDIF&W biologists, and they did not have specific concerns about the proposed predator nets and soft mesh bags (SR 12).

Based on the evidence that the proposed lease does not interact with historical eelgrass beds and MDIF&W's review comments, and because DMR's site report does not contain concerns regarding the impact of the proposed lease on the surrounding ecosystem, it appears that the proposed aquaculture activities for this lease site will not interfere with the ecological function of the area.

Therefore, the aquaculture activities proposed for this site 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

The proposed lease is located on intertidal land associated with Crow Island (Figure 2). The island is a municipally owned island to the north of the proposal. The island is open to the public for camping and general use. The southern tip of White Island is also a public access point. It is open for general day use only. Due to the nature of this proposal, and its distance from Crow Island and the White Island preserve, it is unlikely that the proposal will interfere with use of these public locations (SR 14).

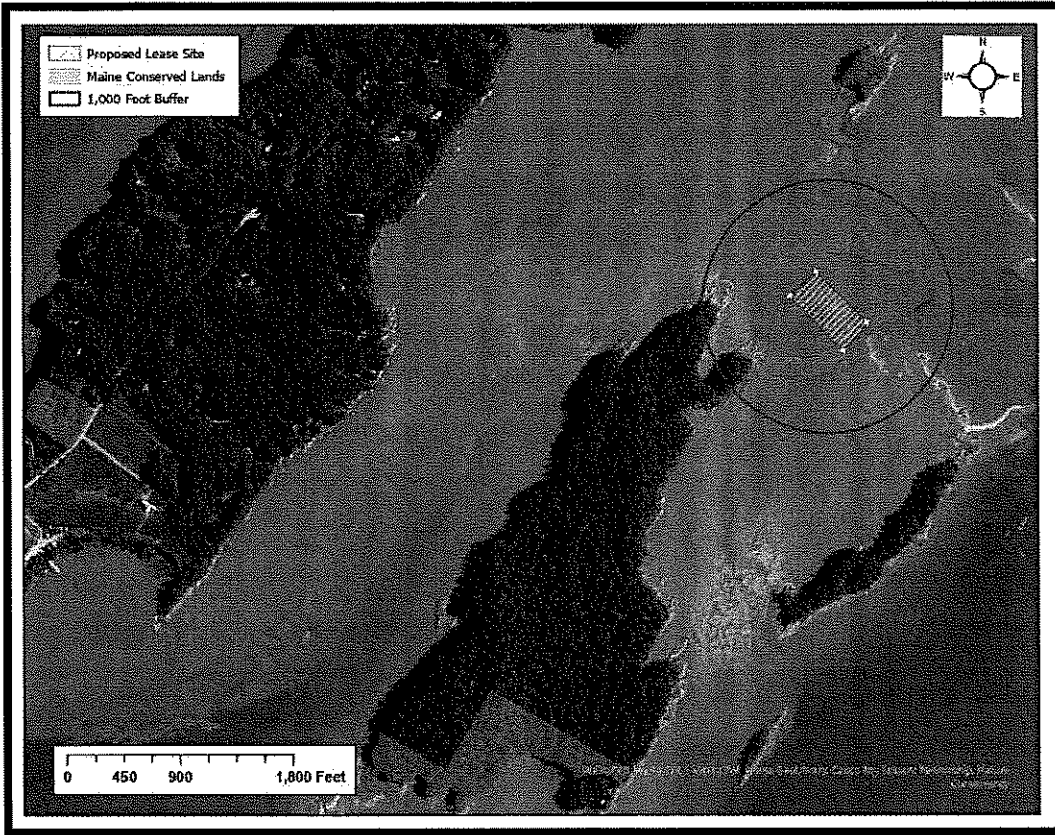


Figure 2: Publicly owned land near the proposed lease site

During the comment period, DMR did not receive any comments regarding public use and enjoyment. Based on the lack of public comments, and the project’s location in relation to public facilities, it is reasonable to conclude that there are no concerns regarding the effect the proposed lease may have on public use and enjoyment. DMR finds that public use or enjoyment within 1,000 feet of beaches, parks, or docking facilities owned by federal, state, or municipal governments will not be unduly affected by the proposed application.

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

The applicant proposes the following sources of stock:

Hard clam/quahog (<i>M.mercenaria</i>)	Muscongus Bay Aquaculture, Downeast Institute
Soft-shelled clam (<i>M.arenaria</i>)	Downeast Institute

These hatcheries are currently listed as an approved sources for the proposed stock.

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

4. CONCLUSIONS OF LAW

Based on the above findings, I conclude that:

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

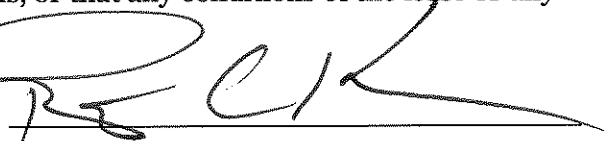
Based on the foregoing, the Commissioner grants the requested experimental lease of 3.91 acres to Christopher Green, for three years, the term of the lease to begin within twelve months of the date of this decision, on a date chosen by the lessee⁴; however, no aquaculture rights shall accrue in the lease area until the lease is fully executed.

This lease is granted to the lessee for the suspended cultivation of hard clams/quahogs (*Mercenaria mercenaria*) and soft-shelled clams (*Mya arenaria*). The lessee shall pay the State of Maine rent in the amount of \$100.00 per acre per year. Since this is an experimental lease with more than 400 sq. ft. 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 2.64 (10) (s) 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. REVOCAION OF EXPERIMENTAL LEASE

The Commissioner may commence revocation procedures upon determining pursuant to 12 MRSA §6072-A (22) and DMR Rule Chapter 2.64 (13) that no substantial research has been conducted on the site within the preceding year, that research has been conducted in a manner injurious to the environment or to marine organisms, or that any conditions of the lease or any applicable laws or regulations have been violated.

Dated: 3/21/23



Patrick C. Keliher, Commissioner

Department of Marine Resources

⁴ 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.”