

Department of Marine Resources
Site Review

Nautical Farms
70 Blueberry Mountain Drive
Machias, ME 04654

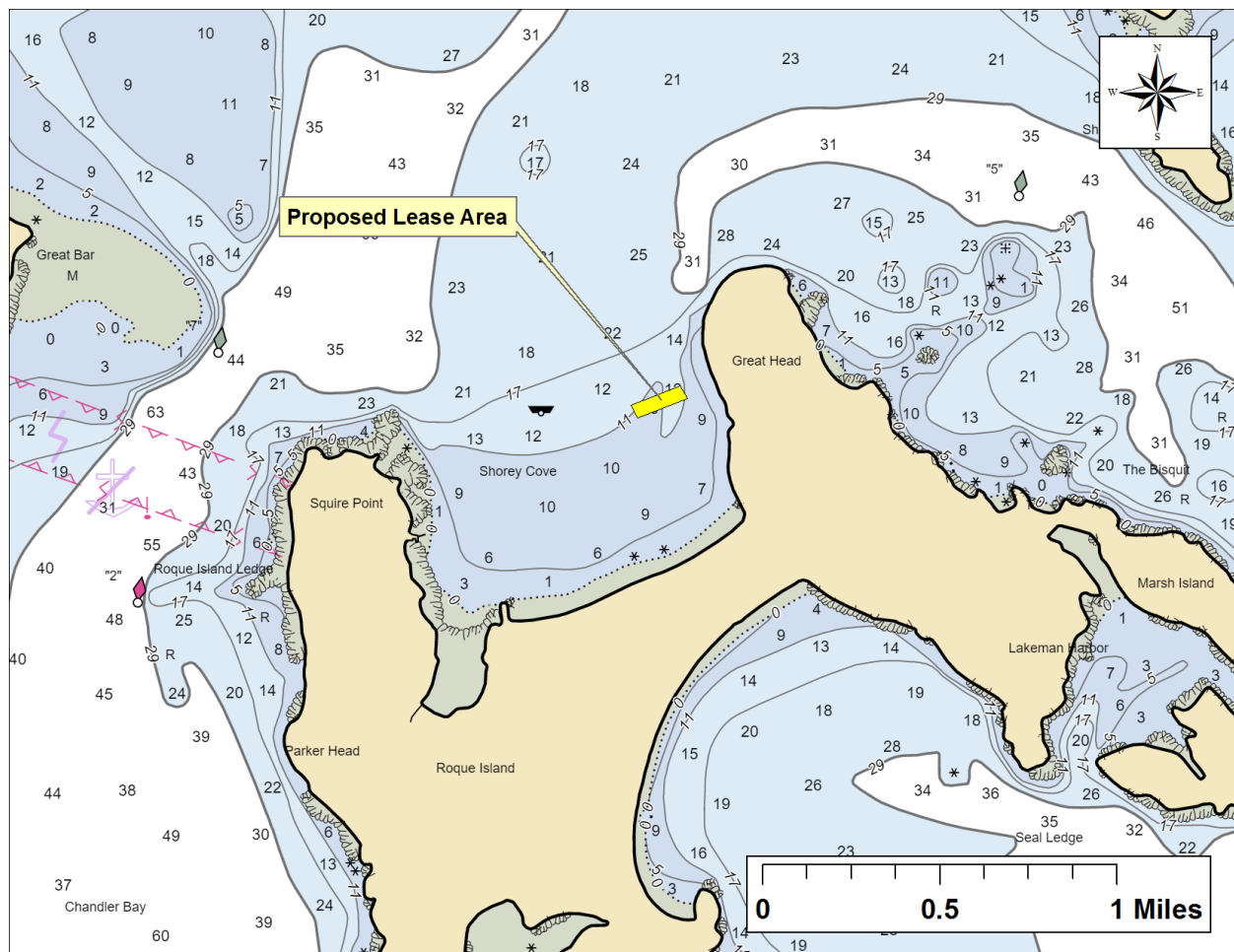


Figure 1: Vicinity map¹

Location: North of Roque Island, Shorey Cove, Jonesport, Washington County, Maine

Purpose: Experimental lease for the suspended culture of sugar kelp (*Saccharina latissima*) and winged kelp (*Alaria esculenta*)

Site Review: Flora Drury and Cheyenne Adams

Report Preparation: Cheyenne Adams and Marcy Nelson

Report Completed: June 24, 2022

¹All figures in this report were created in ArcMap version 10.8 using digitized NOAA Nautical Charts or geo-referenced aerial photographs provided by The Maine Office of GIS (orthoCoastalDownEast2009).

Application Overview

The applicant is requesting 3.92² acres northeast of Roque Island in Shorey Cove, in the Town of Jonesport, for the suspended culture of marine algae.³ The applicant proposes to culture kelp on six 800-foot longlines deployed October-May. During the growing season, a total of up to 60 buoyancy compensation buoys (5" x 11") may be deployed along the longlines. The site would have 18 mooring blocks (4' x 4') and associated mooring balls (36") deployed year-round, in 3 rows of 6 buoys each with approximately 400 feet between each row.⁴ Longlines would be oriented in approximately a SW-NE orientation, running parallel to the longest axis of the proposed lease boundaries. The three rows of mooring buoys, which would remain on site during summer months, would be oriented perpendicular to the longlines and longest axis of the proposed lease boundaries. Longlines would be deployed 7 feet below the surface of the water.⁵

General Characteristics

On April 5, 2022, MDMR staff Flora Drury and Cheyenne Adams visited the proposed experimental aquaculture lease. MDMR staff arrived on site at approximately 10:30 am; the tide was in the flood stage.

The proposed lease occupies subtidal waters west of Great Head on Roque Island, in Shorey Cove (Figure 1). The northwestern part of Roque Island, near Squire Point and west of the proposed lease, hosts several buildings, a pier structure, large field, and grazing livestock (Figure 1 & Image 1). Additionally, the area between Squire Point and Great Head, south and southwest of the proposal, features a large sand beach (Images 2 & 3). The rest of the island shoreline is characterized by steep ledge leading to uplands that are predominantly coniferous forest (Images 4 & 5), with the exception of the developed area described above. Seven kelp longlines were located in the general vicinity of the proposed lease area (Image 6); these longlines are permitted by Limited Purpose Aquaculture (LPA) license held by individuals associated with the lease application. North and northwest of the proposed site is open water, scattered islands, and the Jonesport mainland (Images 7 & 8).

² Applicant originally requested 4.0 acres. MDMR calculations, based on the corrected coordinates provided, indicate the area is 3.92 acres. Additional information on the coordinate correction is describe in footnote 7.

³ Application, page 1 and 2 (all page number references refer to the document page number, not the labelled page number)

⁴ Application pages 15 and 16

⁵ Application pages 4 and 14 indicate the longlines would be below the surface of the water. An email from J. Patryn to C. Adams on 6/24/2022 stated the depth below the surface of the water would be 7 feet.



Image 1: Facing west toward Squire Point and the developed portion of Roque Island from ~870 feet south of the proposed lease (April 5, 2022).



Image 2: Facing southwest toward a large sand beach on Roque Island from ~870 feet south of the proposed lease (April 5, 2022).



Image 3: Facing south toward a large sand beach on Roque Island from ~870 feet south of the proposed lease (April 5, 2022).



Image 4: Facing southeast toward Roque Island from ~870 feet south of the proposed lease (April 5, 2022).



Image 5: Facing east toward Roque Island from ~870 feet south of the proposed lease (April 5, 2022).



Image 6: Facing northeast toward LPA gear associated with the applicant and Great Head from ~870 feet south of the proposed lease (April 5, 2022).



Image 7: Facing north toward open water, scattered islands, and the Jonesport mainland from ~870 feet south of the proposed lease (April 5, 2022).



Image 8: Facing northwest toward open water, scattered islands, and the Jonesport mainland from ~870 feet south of the proposed lease (April 5, 2022).

Depth

DMR did not collect depths at the proposed lease corners,⁶ but available NOAA charts indicate they range from 9 to 12 feet at mean low water (MLW, 0.0'). Tide information for the day of the site assessment is provided in Table 1.

Table 1: Tide predictions at Moosabec Reach, Jonesport, Maine (44.5283° N, 67.5983° W)⁷

Date	Time	Height (ft.)
4/5/2022	2:00 AM	12.20 H
4/5/2022	8:27 AM	0.15 L
4/5/2022	2:35 PM	11.03 H

Bottom Characteristics

MDMR staff observed the bottom characteristics in the general vicinity of the proposed lease area via a drop-camera transect on April 5, 2022 (Images 9 & 10, Figure 2). The video transect bisected the original proposed lease area, based on the coordinates provided in the application. However, an error in the coordinates was later discovered⁸ and the corrected coordinates place the proposed lease area a few hundred feet to the north of the video transect. While the collection of benthic video is not a requirement for experimental lease applications, the video collected is likely representative of the benthic ecology in the area of the proposed lease site. 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; no sediment samples were collected, or grain size analysis performed.

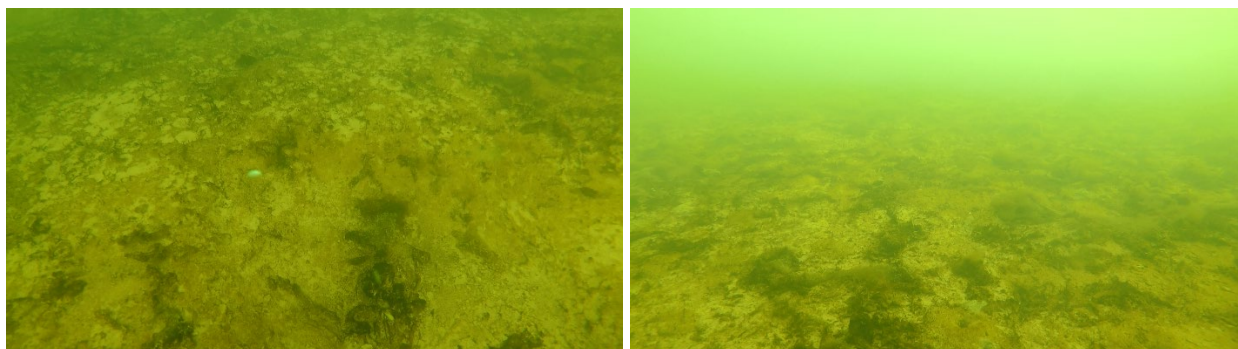
Table 2. Bottom characteristics observed in drop-camera transect conducted in the general vicinity of the site on April 5, 2022.

Substrate Origin	Substrate Class	Substrate Subclass	Substrate Group (Subgroup)
Geologic Substrate	Unconsolidated Mineral Substrate	Fine Unconsolidated Mineral Substrate	Muddy Sand

⁶ On April 5, 2022, DMR collected depth measurements at the original proposed lease corners, based on the coordinates provided in the application. However, the coordinates were corrected on 6/9/2022, as outlined in footnote 8, and the site was not re-visited to collect additional depth measurements at the corrected proposed lease corners. However, available NOAA Nautical Charts confirm similar depths at MLW at the revised location.

⁷ <http://tbone.biol.sc.edu/tide/tideshow.cgi>

⁸ Described in footnote 8



Images 9 & 10: Bottom substrate in the vicinity of the proposed lease site (April 5, 2022).

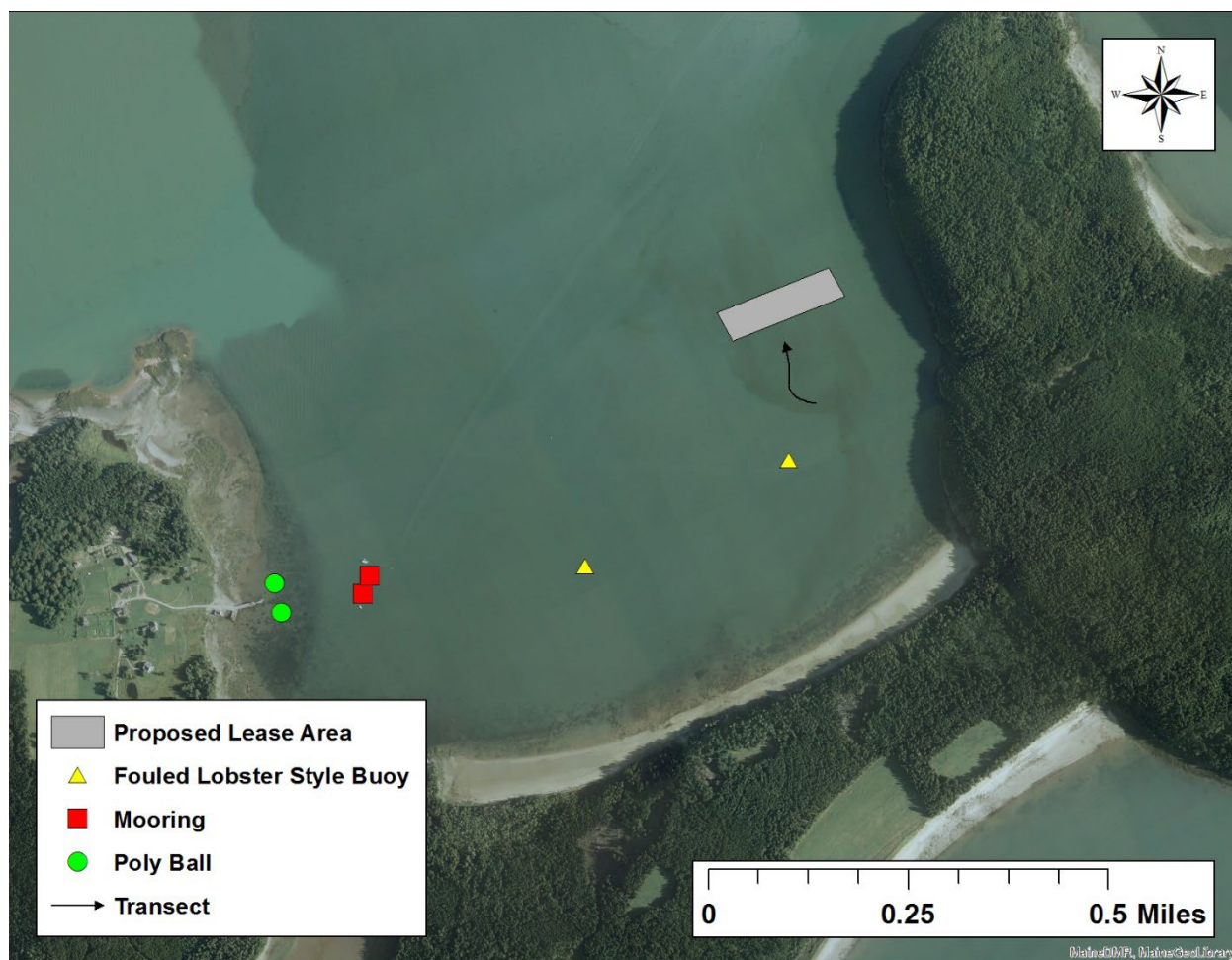


Figure 2: Proposed lease and features observed in the surrounding area on April 5, 2022.

Position and Distances to Shore

The coordinate geometry (COGO) report and measuring tools in ArcMap 10.8 were used to verify the distances and bearings between proposed lease corners. Distances to shore were determined using the measuring tool in ArcMap 10.8, digital orthophotography provided by the Maine Office of GIS, and the application coordinates.

WGS84 Coordinates⁹ – 3.92 acres (Figure 2)

<u>Corner</u>	<u>Latitude</u>	<u>Longitude</u>	
SE	44° 35' 33.14" N	67° 31' 7.05" W	then 217.07 feet at 331.28° True to
NE	44° 35' 35.04" N	67° 31' 8.44" W	then 795.26 feet at 248.17° True to
NW	44° 35' 32.24" N	67° 31' 18.71" W	then 214.94 feet at 151.28° True to.
SW	44° 35' 30.36" N	67° 31' 17.33" W	then 795.216 feet at 68.23° True to SE.

Table 3. Approximate distance to shore and surrounding features (Figure 1 & 2).¹⁰

Feature	Approximate Distance
NW Corner to U.S. Coast Guard Buoy (NOAA Chart)	~1,130 feet to the west
SW Corner to Nearest Observed Lobster-Style Buoy	~870 feet to the southeast
SW Corner to the Nearest Observed Mooring	>2,800 feet to the southwest
SW Corner to Nearest Observed Pier	>3,400 feet to the southwest
NE Corner to Nearest Point, Great Head Shoreline (MLW)	~500 feet to the east
SE Corner to Nearest Point, Great Head Shoreline (MLW)	~490 feet to the east
SE Corner to Sand Beach, Nearest Point (MLW)	~1,730 feet to the southeast

The criteria MDMR uses to determine the suitability of an experimental aquaculture operation to a particular area (MDMR Regulations Chapter 2.64(7)(A)) are discussed, with respect to the proposal, below:

(1) Riparian Owners Ingress and Egress

The proposed lease is located between Great Head and Squire Point of Roque Island (Figure 1). During the MDMR site assessment on April 5, 2022, several buildings were observed near Squire Point, which appeared to include residential and agricultural structures (Image 11). A field/lawn area surrounds the buildings and grazing sheep were observed near the shoreline. Additionally, a stone and wood pier, along with a set of stairs to the shoreline, is located between the two poly balls depicted in Figure 2. Finally, two moorings were observed in deeper water to the east of the pier, one of which was empty and the other was mooring a small outboard boat.

⁹ The coordinates listed here were provided by Jake Patryn via email on 6/9/2022. The coordinates listed in the application do not match the rest of the information provided in the application, including the gear table, overhead view, cross section view, boundary drawing, and vicinity map. In consideration of the fact that members of the public are more likely to assess the proposal according to the drawings, figures, and maps provided in the application, as opposed to the coordinates listed, DMR elected to accept corrected coordinates that more closely align with the rest of the information in the application. Riparian landowners within 1,000 feet of the application, who are required to be sent notification of the application, are unchanged with the corrected coordinates.

¹⁰ All measurements were made using digitized NOAA Nautical Charts or geo-referenced aerial photographs provided by The Maine Office of GIS (orthoCoastalDownEast2009).

While DMR staff was on-site for the assessment, a vessel arrived at the pier from the east, travelling to the north of the proposed lease site.

Roque Island is privately owned by the Roque Island Gardner Homestead Corporation, which, according to their website, works with communities, scientists, and educational institutions on issues related to the local ecology and island communities.¹¹ Considering the nature of this property, and the amount and type of development on the west side of the island, it's likely that the island experiences regular vessel traffic. However, the proposed lease is over 3,400 feet to the northeast of the pier, and over 2,800 feet to the northeast of the nearest observed mooring, which appear to be the main access points for riparian owners. Additionally, the most direct route of travel to the pier or moorings from the mainland would not intersect with the proposed lease area. Shore landing on the sand beach between Great Head and Squire Point would also not be prevented by the proposed lease operations, although the most direct route to some eastern parts of the beach may be altered slightly by the presence of submerged longlines on the proposed lease from October to May. However, nearly 500 feet of space would remain unobstructed between the proposal and Great Head to the east, and over half a mile between the proposal and Squire Point to the west. Additionally, vessel traffic to the beach is likely heaviest during times of the year when longlines would be removed from the proposed site, and vessels would be able to transit between the 3 rows of mooring buoys that would remain on-site year-round. Although the rows of buoys would run approximately perpendicular to the beach, conducive to vessel flow to and from the beach, it is unknown if mariners would be comfortable navigating within the 400 feet of water available between rows of buoys.

Finally, 4 LPA sites within the cove, operated by the applicant, would remain active if the proposed lease is granted. The nearest of these is approximately 1,010 feet to the south of the proposal (Figure 3; MFOG520). The location and orientation of LPA license gear could present an additional obstacle to riparian access to the island for shore landing. However, the LPA longline runs approximately parallel to the proposed lease longlines, and is approximately 350 feet from the shoreline of Great Head at the nearest point. Therefore, it is likely that vessels capable of shore landing could navigate both between the proposal and the nearest LPA, and also between the LPA and the shoreline.

¹¹ Roqueisland.com



Image 11: Developed area of Roque Island, near Squire Point and west of the proposal (April 5, 2022).

(2) Navigation

The proposed lease is located in navigable waters 9-12 feet deep at mean low tide. This depth is likely sufficient for most vessels operating the general vicinity. However, the proposal is located between two headlands of a privately owned island, approximately 775 feet from the 22-foot depth contour that surrounds both headlands, and is therefore not expected to experience heavy vessel traffic other than that associated with the riparian owners, which is discussed above. The proposal is approximately 490 feet from shore at the nearest point, to the east of the proposal, with over half a mile of open water to the west of the proposal. The nearest LPA license site is approximately 1,010 feet from the proposal. Mariners operating in the area, likely primarily associated with the activities of the Roque Island Gardner Homestead Corporation, are expected to be able to navigate around the lease if the proposal is granted.

(3) Fishing and Water-Related Uses

At the time of MDMR's site assessment on April 5, 2022, two lobster trap-style buoys were observed in the vicinity of the proposed lease area, and both were heavily fouled. The nearest lobster trap-style buoy was approximately 350 feet south of the proposal (Figure 2). The lobster (*Homarus americanus*) fishery in nearshore Maine is seasonal, following the migration and molt cycle of lobsters. Therefore, lobster fishing likely exists to a greater extent or in closer proximity to the proposal later in the season than when the site visit was conducted. However, the applicant is proposing to remove longlines from the water during the months of June-September. Therefore, during these months, the only gear on the proposed lease site would be 18 moorings and associated

36” mooring balls, arranged in 3 rows of 6. The application states that lobster fishing in the vicinity of the site is heaviest in July when longlines would be removed from the site,¹² but it is unknown to what extent, if at all, local lobster fishers would be comfortable fishing between the remaining rows of mooring balls, which would be spaced approximately 400 feet apart. During the growing season (October-May), lobster fishing would be functionally excluded from the site.

A Harbormaster Questionnaire was sent to the Jonesport Harbormaster on February 1, 2022. At the time of this report, no response had been received.

(4) Other Aquaculture Uses

Eight Limited Purpose Aquaculture (LPA) licenses are located within one mile of the proposed lease (Figure 3), all of which had gear deployed during MDMR’s site assessment on April 5, 2022 and are held by the two co-owners of Nautical Sea Farms, LLC.¹³ According to the application, three of these LPA sites would be relinquished if the proposed lease is granted.¹⁴ In consideration of this, the closest remaining aquaculture activity to the proposal would be the four LPA licenses MFOG520, MFOG620, MFOG720, and MFOG820, which are authorized for the suspended culture of sugar kelp (*Saccharina latissima*), the closest of which is 1,010 feet to the south.

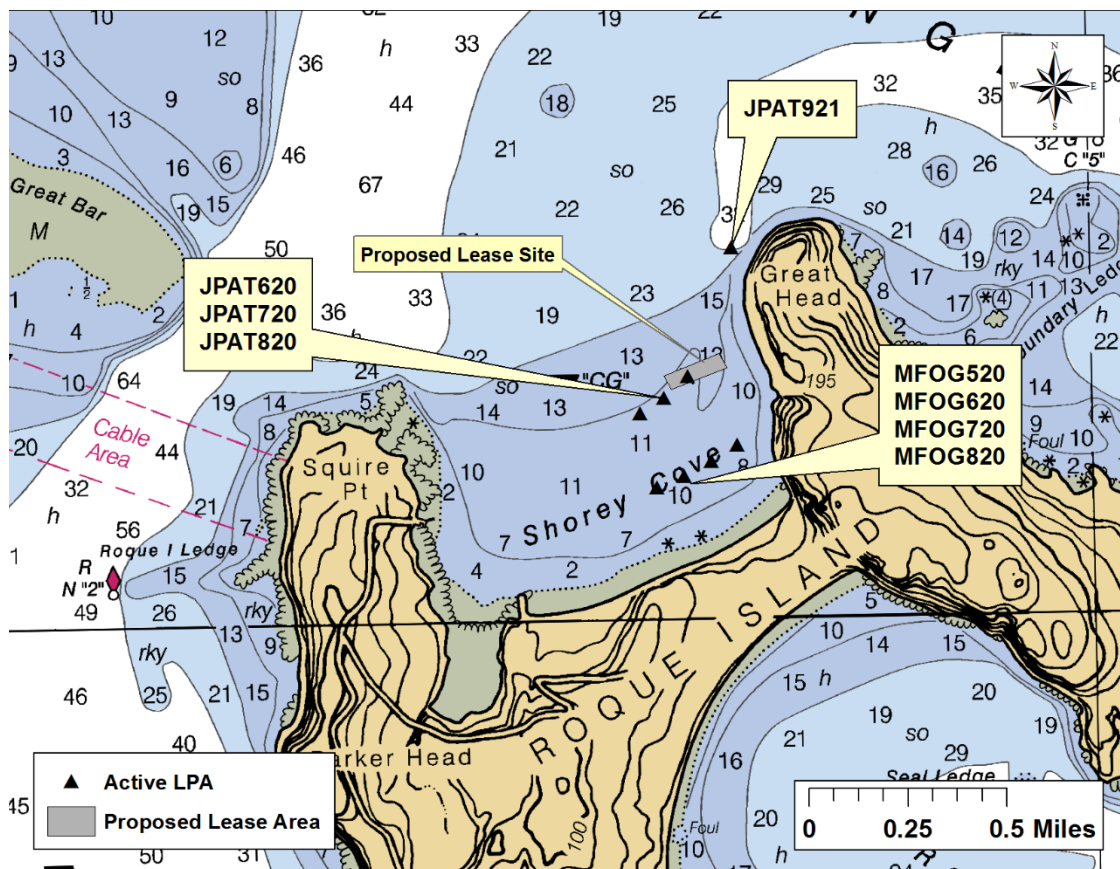


Figure 3: Aquaculture activity near the proposed lease area.

¹² Application page 7

¹³ Application page 24

¹⁴ Application page 9

(5) Existing System Support

Wildlife

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 is more than 1,100 feet from mapped Tidal Wading Bird and Waterfowl Habitat (Figure 4). This habitat type is located near the surrounding island shorelines and is defined under Maine's Natural Resources Protection Act (NRPA) as Significant Wildlife Habitat.

A “Request for Agency Review and Comment” was sent to MDIF&W, but no response had been received at the time of this report.

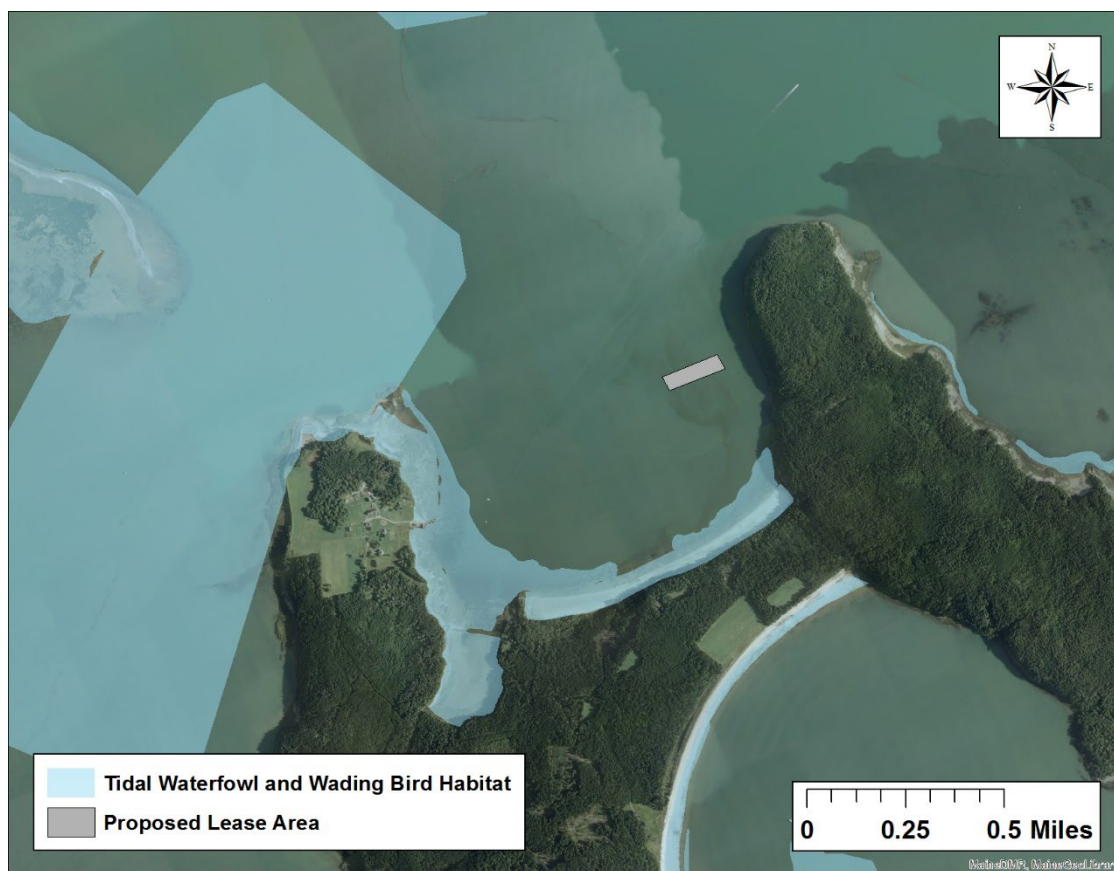


Figure 4: Tidal Wading Bird and Waterfowl Habitat¹⁵ near the proposed lease site.

Eelgrass

Historical eelgrass (*Zostera marina*) data indicates that, in 2009, the closest observed eelgrass bed to the proposed lease was located more than 1,100 feet to the south of the proposed site (Figure 5). Additionally, no eelgrass was observed in the drop-camera survey conducted near the proposed lease site on April 5, 2022.

¹⁵ Data obtained from MDIWF maintained SDE Feature Class “GISVIEW.MEIFW.Twwh”



Figure 5: Historical eelgrass (*Z. marina*) in vicinity of proposed lease.¹⁶

(6) Source of Organisms to be Cultured

The applicant intends to source sugar and winged kelp seed from Springtide Seaweed in Gouldsboro, Maine. This is an approved source for marine algae.

(7) Interference with Public Facilities

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

¹⁶ Data obtained from MDMR maintained SDE Feature Class "MaineDMR – Eelgrass 2010"