

Figure 1. Vicinity map.¹

Location: Southwest of Seal Ledge, Casco Bay, Chebeague Island, Cumberland 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*), dulse (*Palmaria palmata*), sea lettuce (*Ulva lactuca*) and Irish moss (*Chondrus crispus*).

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¹ 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.



Application Overview

The applicant, John Jordan Jr., is requesting a 4.0-acre experimental lease southwest of Seal Ledge in Casco Bay, within the town of Chebeague Island, for the suspended culture of marine algae. Aquaculture gear is intended to be on site seasonally from October 1 – May 31. Moorings, mooring lines and chains, required lease boundary markers, and one center mooring buoy on each end are intended to remain on site year-round. Mooring lines left onsite will be tied to corner or middle buoys to reduce the farm’s off-season profile. All longlines, mooring buoys, and depth control buoys will be removed from the site from June 1 – September 30.²

General Characteristics

On August 7, 2024, Maine Department of Marine Resources (MDMR) scientists assessed the proposed lease site. MDMR scientists arrived on site at approximately 12:52 PM. On August 14, 2024, MDMR revisited the site to collect underwater video footage of the proposed lease area. The proposal is located in subtidal waters in Casco Bay approximately 2,264.5 feet southwest of Seal Ledge at mean low water (MLW) (Figure 1). The shore of nearby Great Chebeague Island was observed to consist of sand and gravel beaches, ledges and marsh grass with residential yards and mixed forest uplands.

Depth

On August 7, 2024, MDMR scientists began collecting depths at the proposed site at approximately 12:53 PM. The tide was flooding with the next high tide predicted at 2:00 PM (Table 1). Depths were determined to be between 38.4-39.6 feet. Correcting for tidal variations derives depths at mean low water (MLW, 0.0 feet) to be between 30.0-31.2 feet.

Table 1. Predicted tidal heights in Portland, Maine.³

Date	Time	Height (ft)
2024/08/07	1:29 AM	9.8 H
2024/08/07	7:47 AM	0.3 L
2024/08/07	2:00 PM	9.0 H
2024/08/07	7:56 PM	1.0 L

Bottom Characteristics

MDMR scientists observed the bottom characteristics in the vicinity of the proposed lease site via a remotely operated vehicle (ROV) on August 14, 2024. 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 lease site is primarily composed of mud.

² Application pages 9, 17

³ <https://www.usharbors.com/harbor/maine/portland-harbor-me/tides/?tide=2024-08#monthly-tide-chart>



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

Position and Distances to Shore

The geodesic measuring tool in ArcGIS Pro 2.9 was used to verify the distances and bearings between proposed lease corners. Distances to shore were determined 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 2,3).

Application Coordinates (WGS84) – 4.00 Acres

<u>Corner</u>	<u>Latitude</u>	<u>Longitude</u>	
NW	43.72656°	-70.14671°	then 164.5 feet at 093° True to
NE	43.72652°	-70.14609°	then 1,057.1 feet at 185° True to
SE	43.72363°	-70.14642°	then 164.3 feet at 274° True to
SW	43.72366°	-70.14704°	then 1.060.7 feet at 005° True to NW

Table 3. Approximate distances from proposal corners to surrounding features (Figure 3).

Feature	Distance
NW corner to Lower Basket Ledge closest point MLW	~2,880.6 feet to the northwest
NW corner to red navigation buoy “16”	~2,732.2 feet to the northeast
NW corner to Sunset Landing closest point MLW	~1,865.0 feet to the east
NE corner to Sunset Landing closest point MLW	~1,701.8 feet to the east
NE corner to Seal Ledge closest point MLW	~2,264.5 feet to the northeast
SE corner to Indian Point closest point MLW	~1,537.6 feet to the southeast
SE corner to Sunset Landing closest point MLW	~2,017.3 feet to the northeast
SW corner to Sunset Landing closest point MLW	~2,159.2 feet to the northeast
SW corner to red navigation buoy “14”	~1,682.2 feet to the southwest

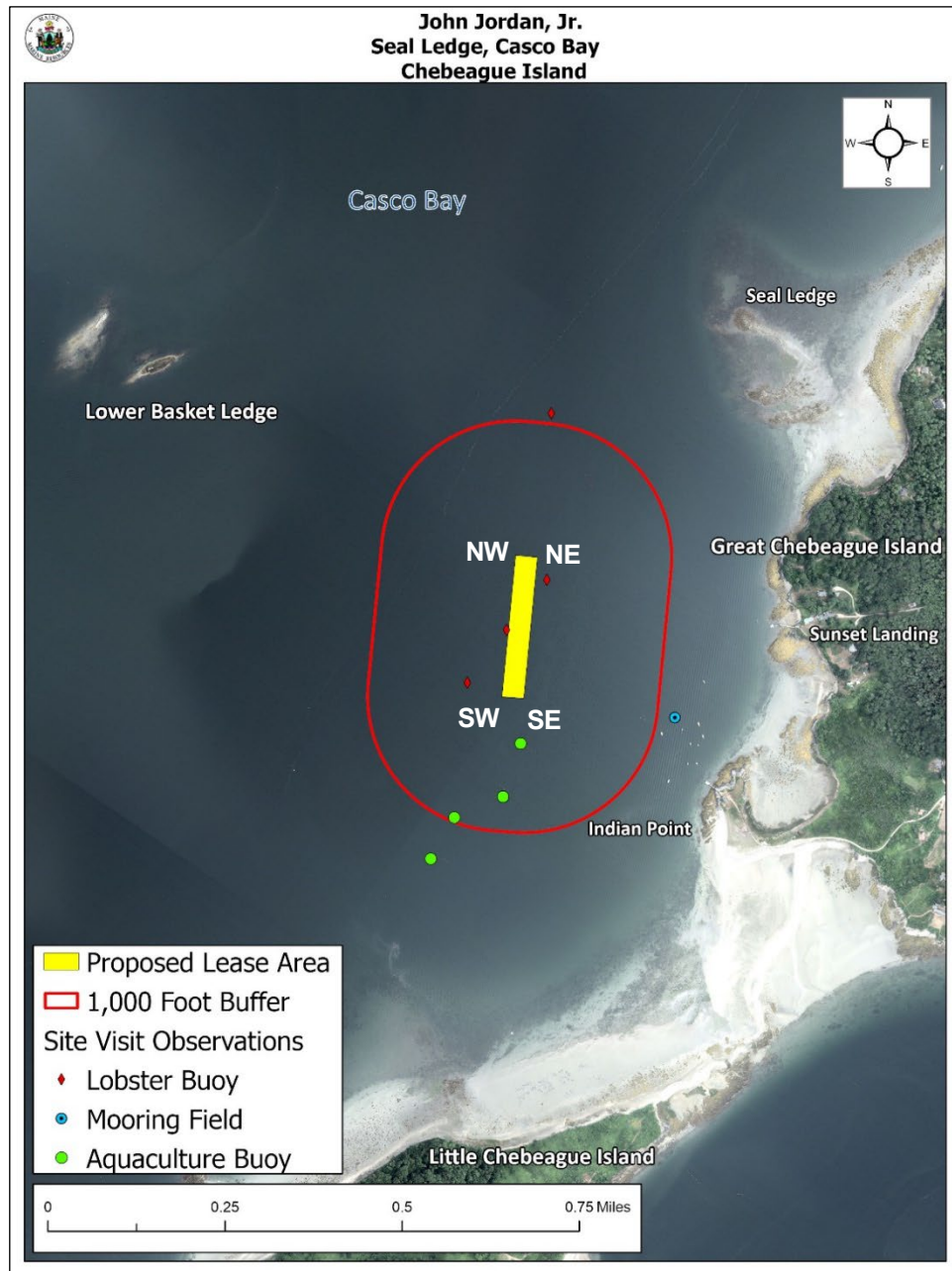


Figure 2. Proposed lease area with site visit observations.

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:



Department of Marine Resources Site Report

John Jordan, Jr.
Seal Ledge, Casco Bay
Chebeague Island

(1) Riparian Ingress and Egress

During MDMR's site assessment, scientists did not observe any piers, docks or residential properties within 1,000 feet of the proposal. There is no land within 1,000 feet of the proposal. Aerial imagery⁴ indicates there are residential properties, piers, and moorings on the western shore of Great Chebeague Island on Indian Point approximately 1,537.6 feet southeast of the proposal and Sunset Landing approximately 1,701.8 feet east at MLW. During MDMR's site assessment, scientists observed a mooring field approximately 1,134.3 feet southeast of the proposal in the vicinity of Indian Point (Figure 2).

In a completed Harbormaster Questionnaire submitted to MDMR, it was indicated that the lease is over 1,000 feet from shore.

(2) Navigation

The proposal is located in subtidal waters approximately 445.8 feet to the east of the marked north/south navigational channel in the area. There is approximately 1,701.8 feet of navigable water between the proposed lease and Sunset Landing on Great Chebeague Island at MLW (Figure 3).

During MDMR's site assessment, scientists observed two recreational power boats transiting to the north of the proposal, as well as a sailboat getting underway from the mooring field to the southeast of the proposal.

The Harbormaster Questionnaire indicated that navigation would not be negatively affected during the proposed growing season.

⁴ Maine Orthoimagery Coastal Casco Bay 2022

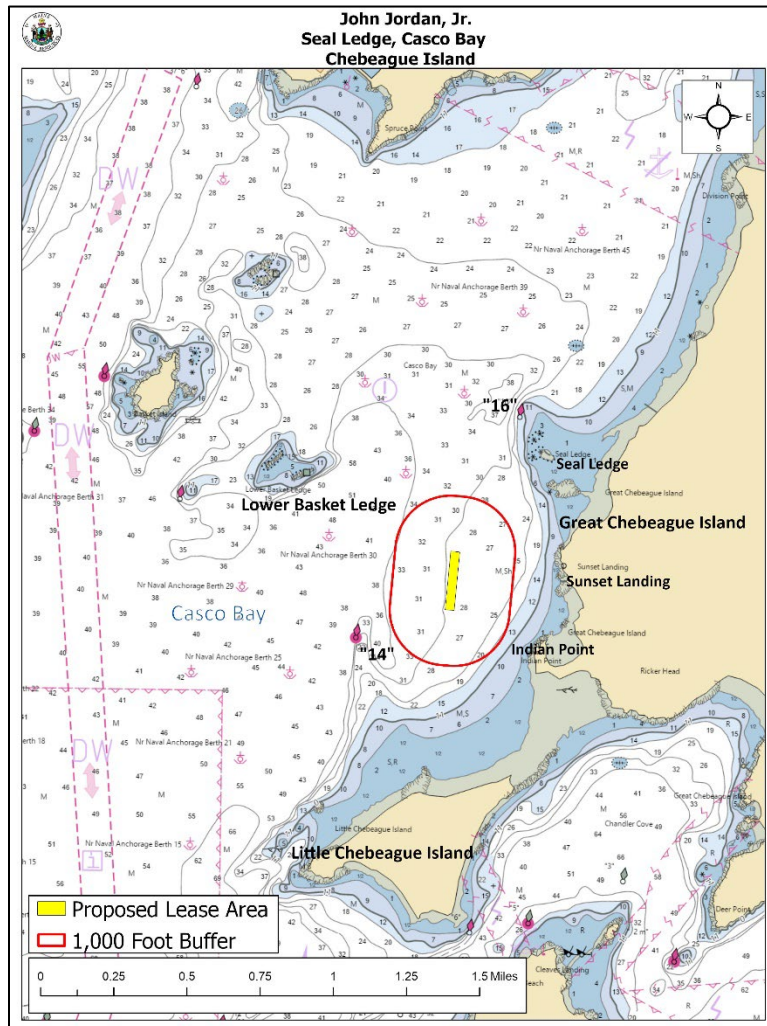


Figure 3. Charted navigational channels in the vicinity of the proposed lease area.

(3) Fishing and Other Uses

During MDMR's site assessment, scientists observed light lobstering activity in the vicinity of the proposal. MDMR scientists mapped three lobster buoys within 1,000 feet of the proposal with the closest located approximately 13.4 feet to the west (Figure 2).

The Harbormaster Questionnaire indicated that commercial and recreational fishing in the area is limited and would not be affected during the proposed growing season.



(4) Other Aquaculture Uses

There is one aquaculture lease and no limited purpose aquaculture (LPA) sites within 1,000 feet of the proposal. Lease CAS CHEB2 is operated by Wild Ocean Aquaculture, LLC and is located approximately 326.6 feet to the south (Figure 4). During MDMR's site assessment, scientists observed aquaculture buoys associated with CAS CHEB2 in the vicinity of the proposal (Figure 2).

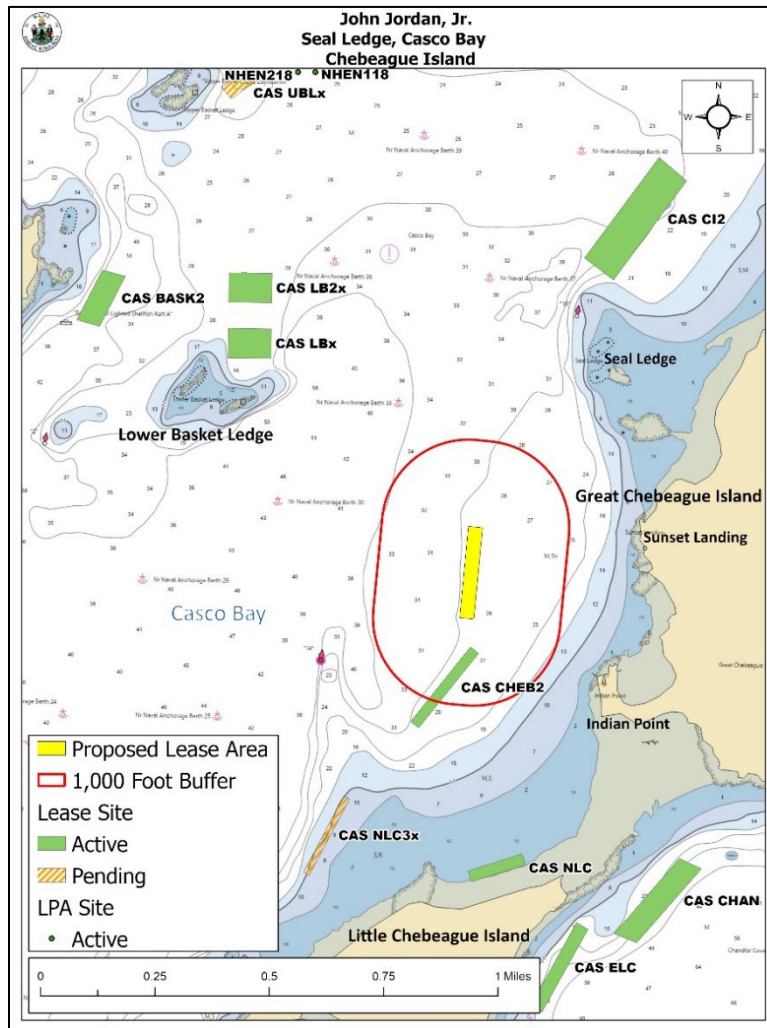


Figure 4. Aquaculture leases and LPA licenses in the vicinity of the proposed lease area.



(5) Existing System Support

Epibenthic Flora and Fauna

MDMR scientists utilized an ROV to assess the epibenthic ecology of the proposed lease. The relative abundance of epibenthic flora and fauna observed is described below in Table 4.

Table 4. Species observed on underwater video footage.

Species Observed	Abundance
Sheet algal bed	Abundant
Sand shrimp (<i>Crangon septemspinosa</i>)	Common
Green crab (<i>Carcinus maenas</i>)	Occasional
Winter flounder (<i>Pseudopleuronectes americanus</i>)	Occasional

Eelgrass (*Zostera marina*)

Records of eelgrass collected in 2022⁵ indicate that there is not mapped eelgrass within 1,000 feet of the proposal. The nearest mapped eelgrass is located approximately 1,409.1 feet southeast of the proposal (Figure 5). During MDMR’s site assessment, scientists observed unattached eelgrass floating at the surface in the vicinity of the proposal. No eelgrass was observed on underwater footage.

⁵ Data obtained from The Maine Office of GIS “GISVIEW.MEDEP.Seagrass2022”. Widgeon grass was observed only in the New Meadows River area off Old Brunswick Road near shore. Eelgrass was the dominant vascular species in all other locations. This is the most current record of mapped eelgrass within the vicinity of the proposal.

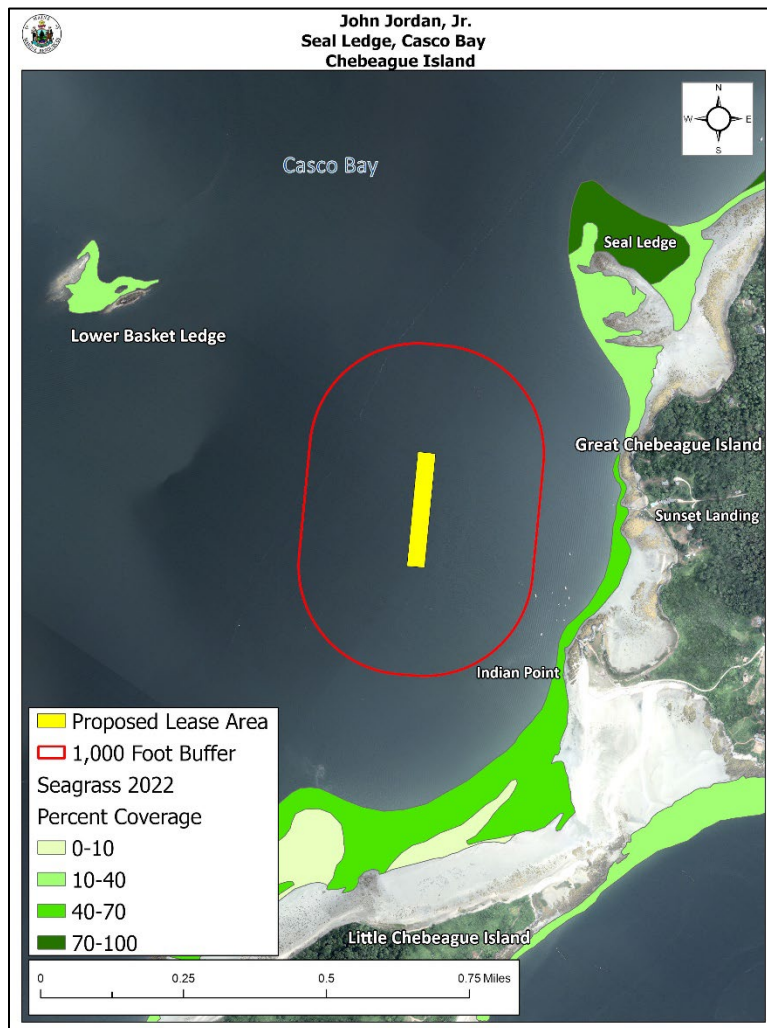


Figure 5. Mapped eelgrass in the vicinity of the proposed lease area.

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 not within 1,000 feet of Tidal Waterfowl and Wading Bird Habitat (TWWH). The nearest TWWH is located approximately 1,311.4 feet to the southeast (Figure 6). The nearest bald eagle (*Haliaeetus leucocephalus*) nest is mapped approximately 1.9 miles southeast of the proposal.

On October 23, 2023, a Resource Biologist with MDIFW responded by email to a “Request for Agency Review and Comment”, stating that minimal impacts are anticipated.

During MDMR’s site assessment, scientists observed common eiders (*Somateria mollissima*) and herring gulls (*Larus argentatus*) in the vicinity of the proposal.



Figure 6. Mapped TWWH in the vicinity of the proposed lease area.⁶

(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.

The Sunset Landing parcel is owned by the Town of Chebeague Island and is located approximately 1,701.8 feet east of the proposal at MLW. The town has undertaken efforts to possibly construct a municipal docking facility, which would serve as a primary ferry berth for the island, on the Sunset Landing property (Figure 7).

⁶ Data obtained from USFWS “Bald_Eagle_Nests_-_Maine_2023” and MDIFW maintained SDE Feature Class “GISVIEW.MEIFW.Twwh”

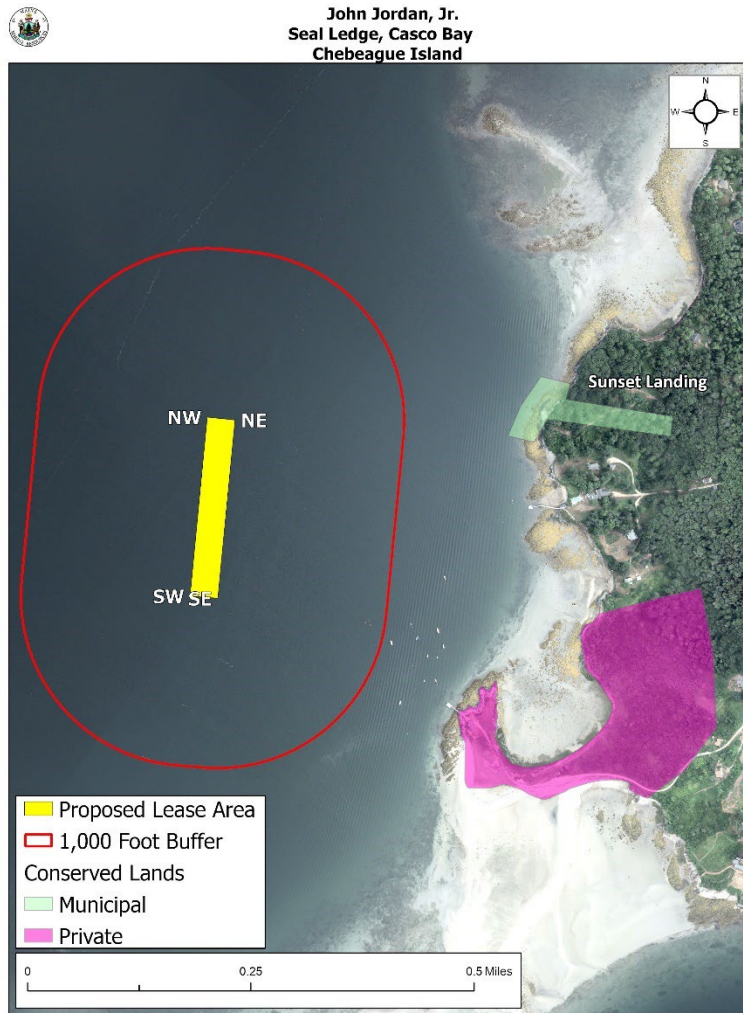


Figure 7. The proposed lease area in relation to Sunset Landing.

(7) Water Quality

The proposed lease is located within an area that is currently classified as Open/Approved by the MDMR Bureau of Public Health and Aquaculture.