

Figure 1. Vicinity map.¹

Location: East of Great Chebeague Island, 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*).

Site Review: Geoffrey Shook and Katie Von Hohenleiten

Report Preparation: Geoffrey Shook and Meryl Grady

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, Gordon Robinson, is requesting a 3.97² acre experimental lease east of Great Chebeague Island, in Casco Bay, within the town of Chebeague Island for the suspended culture of marine algae. The applicant intends to have aquaculture gear on site seasonally from October 15-May 31. Moorings, mooring lines, chains, and state-required lease markers are intended to be onsite year-round.³

General Characteristics

On August 22, 2024, Maine Department of Marine Resources (MDMR) scientists assessed the proposed lease site. MDMR scientists arrived on site at approximately 10:52 AM. The proposal is located in subtidal waters in Casco Bay approximately 891.2 feet east of Great Chebeague Island at mean low water (MLW) (Figure 1). The shore of nearby Great Chebeague Island was observed to consist of rock ledges, marsh grass, gravel sand beaches, and eroded dirt cliffs with mixed forest uplands.

Depth

On August 22, 2024, MDMR scientists began collecting depths at the proposed site at approximately 10:55 AM. The tide was flooding with the next high tide predicted at 1:44 PM (Table 1). Depths were determined to be between 48.8-69.5 feet. Correcting for tidal variations derives depths at mean low water (MLW, 0.0 feet) to be between 42.8-63.5 feet.

Table 1. Predicted tidal heights in Portland, Maine.⁴

Date	Time	Height (ft)
2024/08/22	1:14 AM	11.2 H
2024/08/22	7:29 AM	-1.3 L
2024/08/22	1:44 PM	10.8 H
2024/08/22	7:51 PM	-0.9 L

Bottom Characteristics

MDMR scientists observed the bottom characteristics of the proposed lease site via a remotely operated vehicle (ROV). 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 proposed lease site is composed of mud.

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

² Applicant originally requested 4.0 acres. MDMR calculations indicate the area is 3.97 acres.

³ Application page 7, 8, 15-16

⁴ <https://www.ussharbor.com/harbor/maine/portland-harbor-me/tides/?tide=2024-08#monthly-tide-chart>



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) – 3.97 Acres

<u>Corner</u>	<u>Latitude</u>	<u>Longitude</u>	
NW	43.74045°	-70.09922°	then 161.9 feet at 93° True to
NE	43.74041°	-70.09861°	then 1,058.5 feet at 186° True to
SE	43.73752°	-70.09900°	then 164.5 feet at 277° True to
SW	43.73756°	-70.09962°	then 1,058.8 feet at 6° True to NW

Table 3. Approximate distances from proposal corners to surrounding features (Figures 2,3).

Feature	Distance
NE corner to red navigation buoy “8”	~2,600.8’ to the northeast
NE corner to Great Chebeague Island shoreline at MLW	~1,038.8’ to the northwest
NE corner to Goose Nest at MLW	~2,521.0’ to the southeast
SE corner to Goose Nest at MLW	~2,447.3’ to the east
SE corner to green navigation buoy “5”	~2,198.4’ to the southwest
SE corner to Great Chebeague Island shoreline at MLW	~1,423.8’ to the northwest
SW corner to green navigation buoy “5”	~2,201.4’ to the south
SW corner to Great Chebeague Island shoreline at MLW	~1,279.9’ to the northwest
NW corner to red navigation buoy “8”	~2,715.3’ to the northeast
NW corner to Great Chebeague Island shoreline at MLW	~891.2’ to the northwest

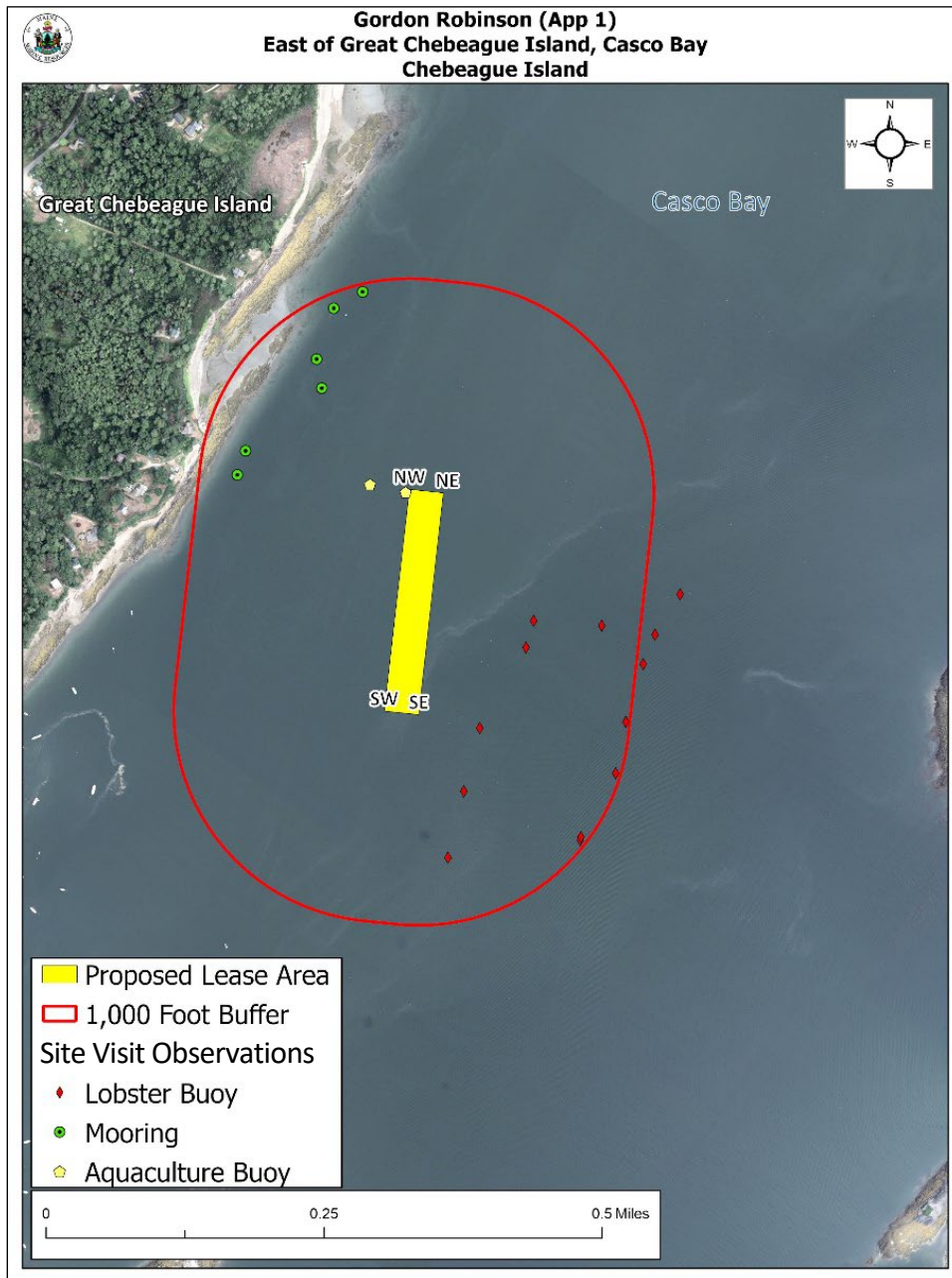


Figure 2. Proposed lease area with site visit observations.

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:



(1) Riparian Ingress and Egress

Great Chebeague Island is located approximately 891.2 feet west of the proposal at MLW. MDMR did not observe any docks or houses within 1,000 feet of the proposal. There were six moorings observed within 1,000 feet of the proposal with the closest located approximately 635.8 feet to the northwest. One mooring held a 45-foot sailboat and another held an inflatable dinghy. The other four moorings were vacant at the time of MDMR's site assessment.

In a completed Harbormaster Questionnaire submitted to MDMR on November 7, 2023, it was indicated that riparian ingress and egress would not be affected.

(2) Navigation

The proposal is located in subtidal, navigable waters. Based on the mapped location of green navigation buoys "5" and "7", the southeastern corner of the proposal is located approximately 45.0 feet within the navigational channel. There is approximately 2,447.3 feet of navigable water between the proposal and Goose Nest to the east and 891.2 feet between the proposal and Great Chebeague Island to the west (Figure 3).

During MDMR's site assessment, scientists observed two powerboats navigating along the Bangs Island shoreline, two powerboats navigating along the Chebeague Island shoreline, one kayak and one rowboat transiting near the Chebeague Island shoreline, one sailboat under power and two powerboats leaving a mooring field on Chebeague Island southwest of the proposal.

The Harbormaster Questionnaire indicated that the proposal would not interfere with navigation.

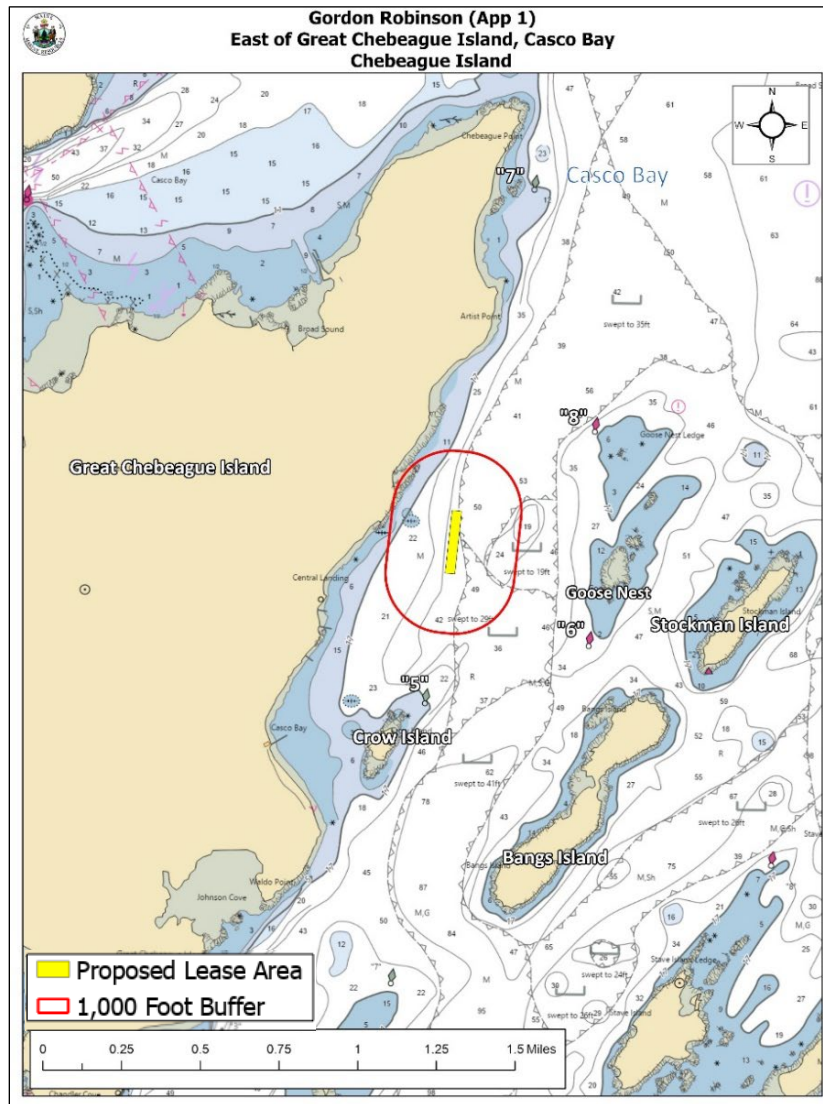


Figure 3. Navigational channels in the vicinity of the proposed lease area.

(3) Fishing and Other Uses

During MDMR's site assessment, scientists observed light lobstering activity within the vicinity of the proposal. There were nine buoys observed within 1,000 feet with the closest located approximately 296.6 feet east of the proposal. Scientists also observed a lobster boat working in the general vicinity to the east of the proposal.

The Harbormaster Questionnaire indicated that there is limited recreational fishing in the area but not during the proposed growing season.



(4) Other Aquaculture Uses

There is one aquaculture lease within 1,000 feet of the proposed lease site. Lease CAS ECx is located approximately 230.0 feet north of the proposal; it is operated by Jeff Putnam and is permitted to grow marine algae. There are no limited purpose aquaculture (LPA) licenses within 1,000 feet of the proposal. The applicant, Gordon Robinson, has an additional application under review by MDMR. Gordon Robinson App 2 is located approximately 59.3 feet south of this proposal (Figure 4). Both applications were deemed complete by MDMR on the same day.

At the time of the site assessment, scientists observed two aquaculture buoys labeled with the lease acronym CAS ECx located approximately 24.2 and 189.1 feet west of the proposal. They appeared to be mislocated marker buoys (Figure 2).⁵

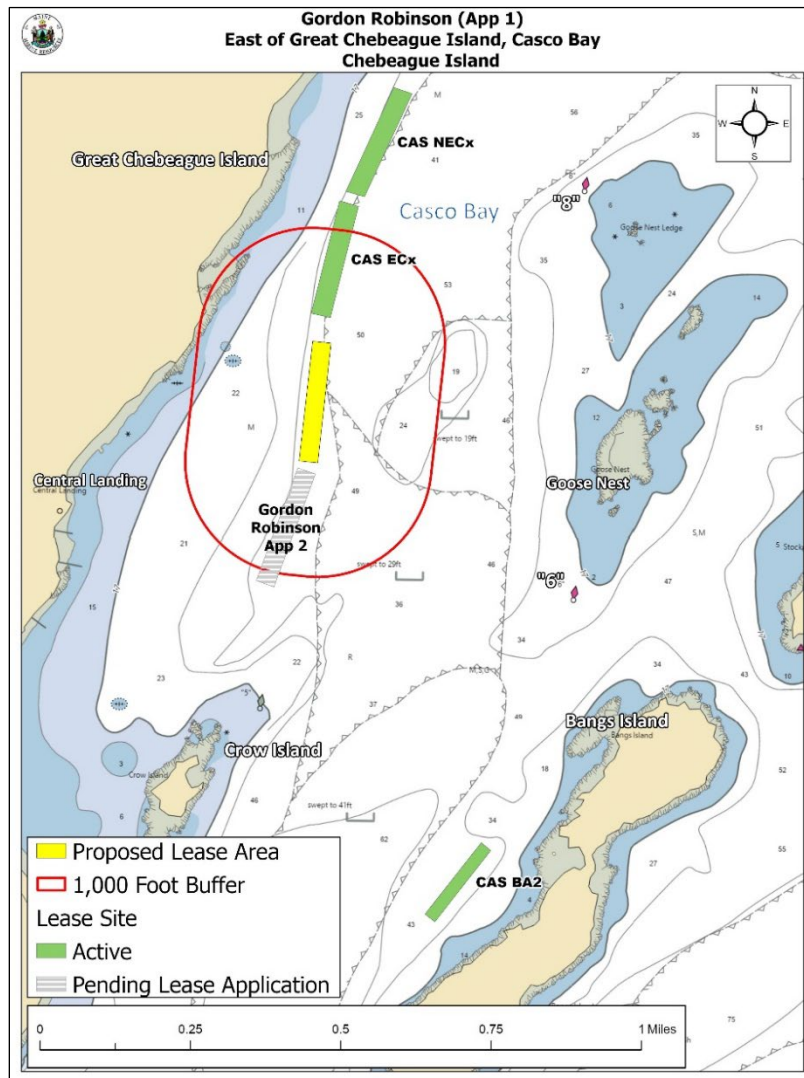


Figure 4. Aquaculture leases and LPA licenses in the vicinity of the proposed lease area.

⁵ These findings were passed on to the MDMR inspections program for appropriate follow up.



(5) Existing System Support

Epibenthic Flora and Fauna

On August 22, 2024, MDMR scientists utilized an ROV to assess the epibenthic ecology of the proposed lease. The relative abundance of epibenthic flora and fauna observed in the video transect is described below in Table 4. Rockweed and siphoned feather weed were observed on a tree branch that was on the bottom within the proposal boundaries.

Table 4. Species observed on underwater camera footage.

Species Observed	Abundance
Sand shrimp (<i>Crangon septemspinosa</i>)	Common
Rock crab (<i>Cancer irroratus</i>)	Rare
Rockweed (<i>Ascophyllum nodosum</i>)	Rare
Siphoned feather weed (<i>Dasysiphonia japonica</i>)	Rare



Eelgrass (*Zostera marina*)

Historical records of eelgrass collected in 2022⁶ indicate mapped eelgrass presence within 1,000 feet of the proposal. The nearest mapped eelgrass is approximately 795.5 feet northwest of the proposal (Figure 5).

During MDMR’s site assessment, eelgrass blades were observed floating on the surface of the water in the vicinity of the proposal. No eelgrass was observed on underwater camera footage within the proposal boundaries.

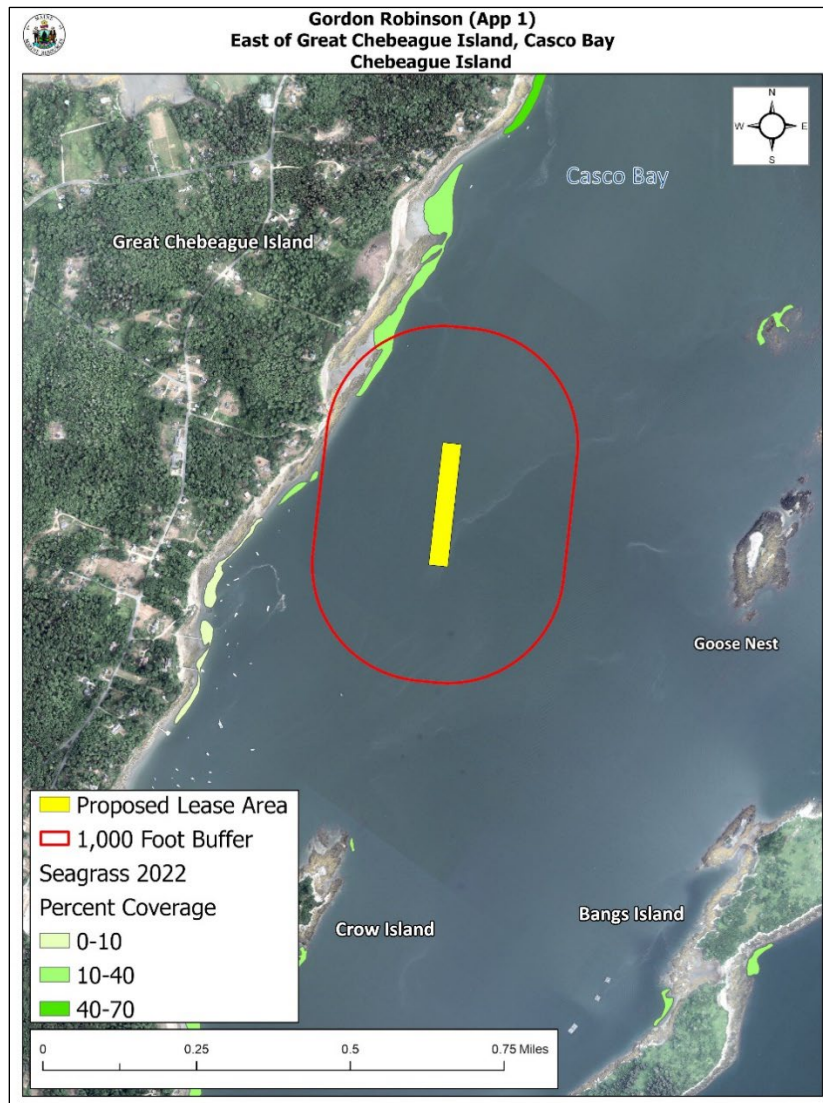


Figure 5. Mapped eelgrass (*Z. marina*) in the vicinity of the proposed lease area.

⁶ 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



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), there is Tidal Waterfowl and Wading Bird Habitat (TWWH) approximately 789.0 feet northwest of the proposal (Figure 6). 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 2.1 miles south of the proposal. On November 2, 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.⁷

During the site assessment, MDMR scientists observed double-crested cormorants (*Nannopterum auritum*), herring gulls (*Larus argentatus*), black guillemot (*Cephus grylle*), a loon (*Gavia immer*), as well as a gray seal (*Halichoerus grypus*) and a harbor seal (*Phoca vitulina*) in the general vicinity of the proposal.

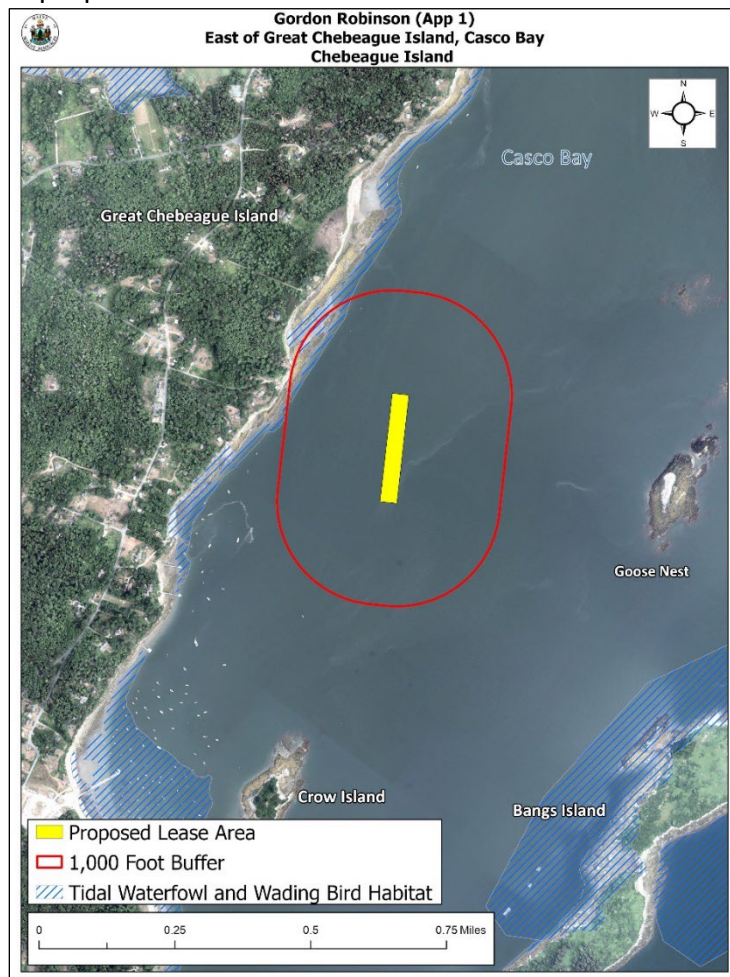


Figure 6. Mapped TWWH in the vicinity of the proposed lease area.⁸

⁷ Email correspondence between MDIFW and MDMR

⁸ Data obtained from USFWS “Bald_Eagle_Nests_-_Maine_2023” and MDIFW maintained SDE Feature Class “GISVIEW.MEIFW.Twwh”



Maine Department of Marine Resources
Site Report

Gordon Robinson (App 1)
East of Great Chebeague Island, Casco Bay
Chebeague Island

(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.

(7) Water Quality

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