

Figure 1*: Vicinity map

Location: East of Little Chebeague Island, Casco Bay, Cumberland County, Maine.

Purpose: Experimental lease for the suspended culture of Sugar Kelp (*Saccharina latissima*), Horsetail Kelp (*Laminaria digitata*), and Winged Kelp (*Alaria esculenta*).

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Report Preparation by: Flora Drury, Marcy Nelson, and Jon Lewis

July 18, 2016

* All figures in this report were created in ArcMap version 10.2 using digitized NOAA Nautical Charts or geo-referenced aerial photographs provided by The Maine Office of GIS (Low_Tide_2013).

On April 13, 2016 Maine Department of Marine Resources (MDMR) Scientists Jon Lewis and Marcy Nelson visited the proposed experimental aquaculture lease. MDMR staff arrived on site at 2:02 pm. The predicted time of high tide Great Chebeague Island, Maine on April 13, 2016 was 5:17pm and tidal height was predicted at 9.22 feet above mean low water (MLW). DMR staff collected depth measurements on the site between 2:00 pm and 3:00pm. The tide was in a flood stage at this time. At the time of data collection on April 13, 2016 water depths at the proposed lease site ranged from 24 to 35 feet with the deeper water being found in the southern and eastern portions of the proposed lease site. Correcting to mean low water provides a minimum water depth of 20 feet within the boundaries of the proposed lease. The applicant is requesting to culture native seaweeds using 1,050 foot long-lines (n=15) submerged 7 feet below the surface of the water.

Great Chebeague Island, Casco Bay, Maine*

(43.7217° N, 70.1417° W)

Date	Time	Height (ft)
4/13/16	04:28 AM	10.28 H
4/13/16	10:56 AM	-0.39 L
4/13/16	05:17 PM	09.22 H
4/13/16	11:16 PM	00.79 L

*<http://tbone.biol.sc.edu/tide/tideshow.cgi?site=Great+Chebeague+Island%2C+Casco+Bay%2C+Maine&units=f>

POSAID Positioning Software was used to verify the distances and bearings between proposed lease corners. Distances to shore were determined using the measuring tool in ArcMap 10.2, digitized NOAA Nautical Charts, digital orthophotography provided by the Maine Office of GIS, and the application coordinates.

Application Coordinates – 3.83 acres (Figure 2)

<u>Corner</u>	<u>Latitude</u>	<u>Longitude</u>
N	43° 42' 50.60"N	70° 08' 30.31"W then 154.38 feet at 119.47° True to
NE	43° 42' 49.85"N	70° 08' 28.48"W then 1,095.63 feet at 208.38° True to
S	43° 42' 40.33"N	70° 08' 35.57"W then 150.01 feet at 298.20° True to
SW	43° 42' 41.03"N	70° 08' 37.37"W then 1,099.04 feet at 28.15° True to N.

Approximate Distances to Shore (Figures 1 & 2)

Western Boundary to Nearest Point, Little Chebeague Is. (MLW)	~213 feet to the west
Western Boundary to White Ball (Mooring?)	~110 feet to the west
S Corner to Red Nun "6"	~ 1,360 feet to the south
S Corner to Green Flashing Buoy "5"	~ 1,206 to the southeast
Eastern Boundary to Channel Edge (40' Contour)	~105 feet to the east
Southern Boundary to Nearest Float	~142 feet to the south
Southern Boundary to Nearest Mooring	~153 feet to the south

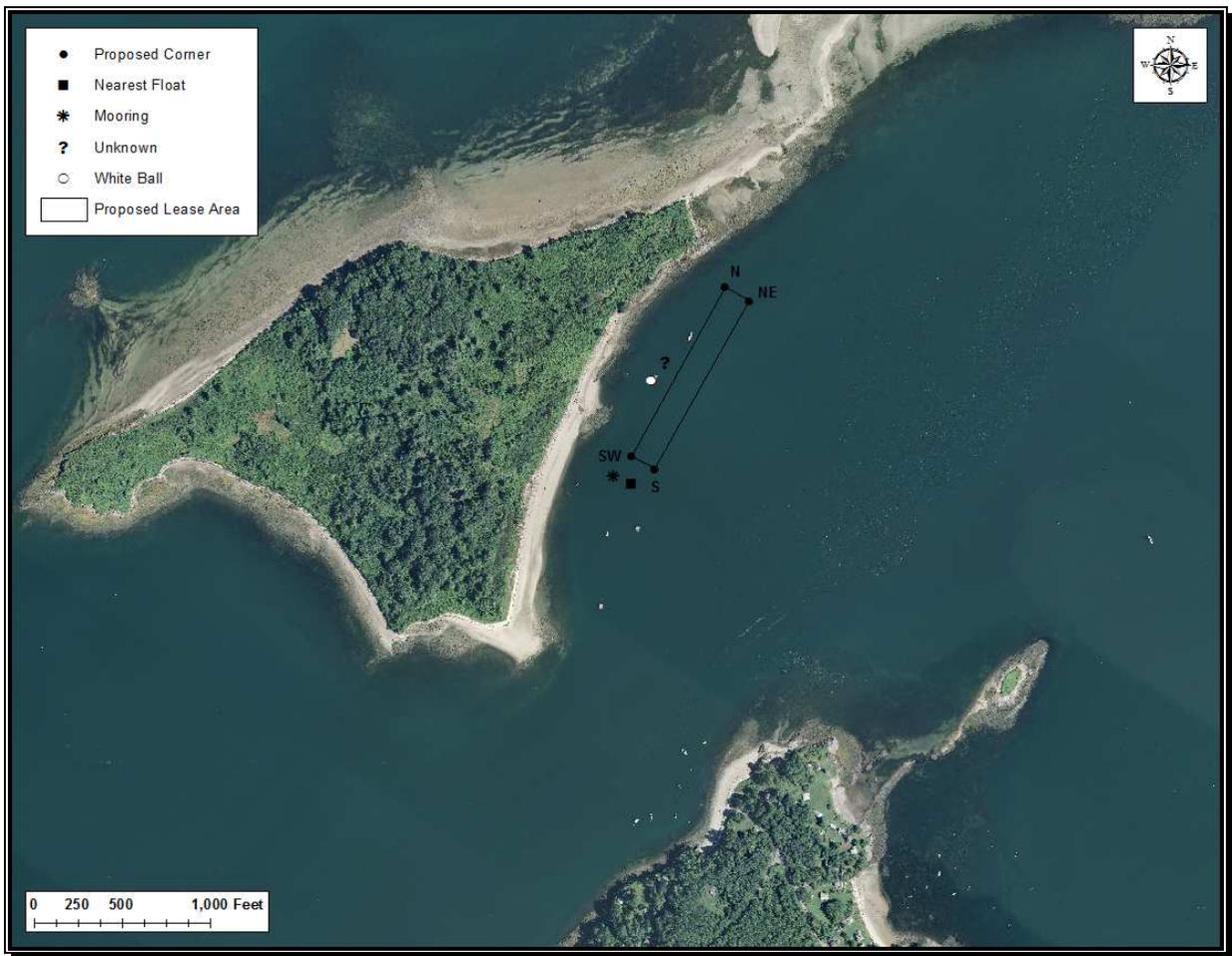


Figure 2*

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

(1) Riparian Ingress and Egress

On April 13, 2016 no docks or shorefront residences with which the proposed activities would interfere were observed. Little Chebeague Island is an uninhabited island owned by the Maine Bureau of Parks and Lands. Access to this island is by foot over a tidally exposed sandbar connecting Great Chebeague and Little Chebeague Islands or by directly landing vessels on one of the beaches. The proposed lease area is more than 200 feet from the island at MLW.

There are no other riparian landowners within 1,000 feet of the proposal.

The nearest observed mooring (“Harnett”) was located approximately 153 feet to the south of the proposed lease area (Figure 2, Image 1). 110’ to the west of the proposal was a white poly ball; MDMR staff were unable to identify its purpose. Another unidentified and heavily fouled buoy was located ~90 feet to the west of the proposal.

(2) Navigation

The proposed lease area is located more than 100 feet to the west of the primary navigation channel in Chandler Cove and will not, if granted, impede vessels traveling through the cove (Figure 1). According to the Harbormaster for the Town of Chebeague Island, Genaro Balzano, the area experiences heavy boat traffic (Harbormaster Questionnaire, March 5, 2016). The majority of boating activity around Little Chebeague Island is expected to occur during the summer months whereas this project, if granted, would be active between the months of September and May of each year. At MLW, the proposed lease would be more than 200 feet from Little Chebeague Island. Furthermore, the long-lines will be maintained 7 feet below the surface of the water, allowing shallow draft vessels to navigate over the farm.

(3) Fishing

On April 13, 2016 no lobster (*Homarus americanus*) trap buoys were observed within or near the boundaries of the proposed lease. Two floats were, however, noted to the south of the proposal (Images 1 and 2). Presumably for the storage of traps and other gear, the closest float was situated ~142 feet from the southern boundary of the proposed lease site. According to the application and comments provided by the Town of Chebeague Island (email dated March 16, 2016), the second raft is a seasonal lobster “smack” used for the buying and selling of lobsters and bait. It is located approximately 440 feet to the south of the proposed lease area.



Image 1: View from approximate “S” corner west towards Little Chebeague Island.



Image 2: Rafts as viewed from approximate “S” Corner of the proposed lease area.

Recreational fishing is expected to occur from shore and by boat in the area during the summer months. Except within its immediate footprint, the proposed lease will not hinder recreational fishing.

In a *Harbormaster Questionnaire* returned to MDMR on March 5, 2016 Harbormaster Balzano indicated the presence of some commercial (lobster and scallops) and recreational fishing within the area. No further details were provided.

The late September to May season for the seaweed farm, if approved, would have limited overlap with local commercial lobstering and recreational fishing, both of which are at their heaviest during the summer months.

(4) Other Aquaculture Uses

The names and distances to the DMR leases and Limited Purpose Aquaculture (LPA) licenses nearest the proposal are listed below. Distances were measured, straight-line, in ArcMap 10.2. See Figure 3 for a graphic representation of surrounding aquaculture activities.

Chebeague Island Oyster Company, Little Chebeague Island, proposed lease for the suspended culture of American oysters (**#2016-01E**): ~1,050 feet to the northwest.

Henry Whetham, Little Chebeague Island, LPA for the suspended culture of American oysters (**WHET1 14**): ~1,289 feet to the northwest.

Ocean Approved, LLC, Little Chebeague Island, long-line culture of seaweed (**CAS LCI2**): ~2,112 feet to the southwest.

Ocean Approved, LLC., west of Indian Point, Chebeague Island, long-line culture of seaweed (**CAS CHEB**): ~2,872 feet to the northwest.

Trundy Point, LLC, south of Little Chebeague Island, suspended culture of blue mussels (**CAS LONG**): ~3,545 feet to the southwest.

David Whiston, Great Chebeague Island, LPA for the suspended culture of shellfish (**WHIS416**): ~3,823 feet to the northeast.

David Whiston, Great Chebeague Island, LPA for the suspended culture of shellfish (**WHIS213**): ~3,992 feet to the northeast.

David Whiston, Great Chebeague Island, LPA for the suspended culture of shellfish (**WHIS112**): ~4,430 feet to the northeast.

David Whiston, Great Chebeague Island, LPA for the suspended culture of shellfish (**WHIS314**): ~4,485 feet to the northeast.

Jeff Putnam, Chebeague Island, LPA for the suspended culture of shellfish (**JPUT116**): ~1.55 miles to the northeast.

Erin Love, Long Island, LPA for long-line culture of marine algae (**ELOV116**): ~1.97 miles to the southwest.

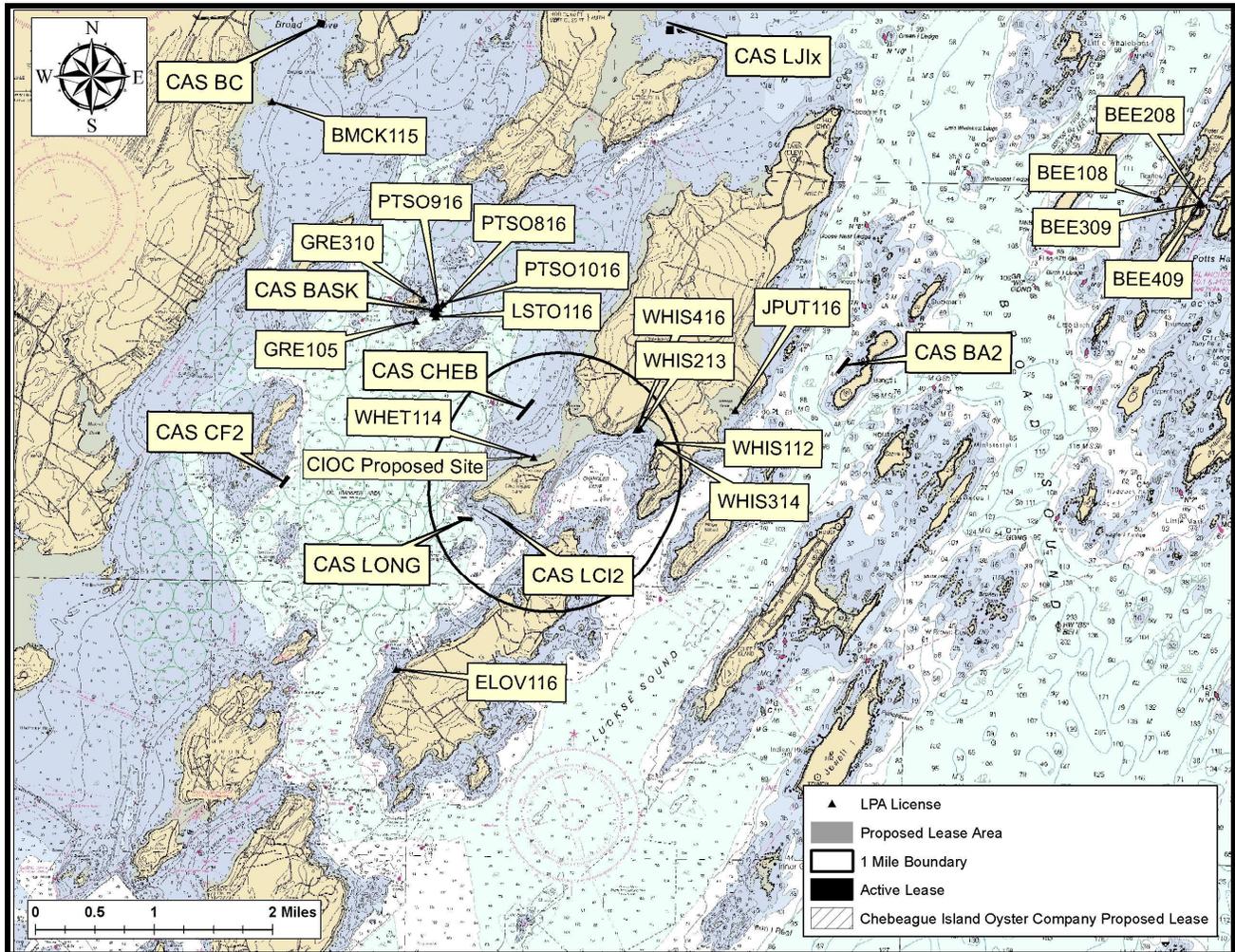


Figure 3*

(5) Existing System Support

Little Chebeague Island is a small, undeveloped island connected to Great Chebeague Island via a sandbar exposed at low water. The shoreline adjacent to the proposed lease can be characterized as sand beach leading to upland dominated by dense shrub and mixed forest.

A SCUBA survey of the epibenthic flora and fauna was not conducted as part of this experimental lease application. According to the application the sea bottom within the proposed lease area consists primarily of mud and sand. This would be consistent with diver observations made the same day and at similar water depths off the northwestern shore of Little Chebeague Island (Docket #2015-16).

Eelgrass (*Zostera marina*)

According to data collected by the Casco Bay Estuary Project (2013) eelgrass is present, in varying levels of coverage, around Little Chebeague Island. The proposed lease site is located more than 80 feet to the east of these documented meadows (Figure 4).



Figure 4*

Wildlife

According to comments received from John Maclaine (Habitat Outreach Biologist at the Maine Department of Inland Fisheries and Wildlife) on March 8, 2016, “there are no apparent direct impacts to resources under MDIFW jurisdiction”. The shallows surrounding Little Chebeague Island are designated as Tidal Wading Bird and Waterfowl Habitat, in part due to the historic and current presence of eelgrass (Figure 4). The proposed lease area is located outside the boundaries of this significant habitat.

(6) Interference with Public Facilities

Little Chebeague Island is owned by The State of Maine, Bureau of Parks and Lands. It is accessible by foot from Great Chebeague Island via a sandbar exposed at low tide. Recreational boaters, kayakers, and beachgoers regularly use the island. There are, however, no public docking facilities within 1000 feet of the proposed lease. Access to the island, via the water, would require anchoring in the shallows offshore or landing vessels directly on one of the beaches.

(7) Water Quality

The area of the proposed lease site is currently classified as open/approved for the harvest of shellfish.