

Figure 1*

Location: West southwest of Great Chebeague Island, Casco Bay, Chebeague Island, Cumberland County, Maine

Purpose: Suspended culture of sugar kelp (*Saccharina latissima*), horsetail kelp (*Laminaria digitate*), and winged kelp (*Alaria esculenta*)

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* 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 staff from The Maine Department of Marine Resources (MDMR) visited the site proposed for the suspended culture of seaweeds located southwest of Chebeague Island, in the town of Chebeague Island, Maine.

The applicant is requesting 3.03 acres (120 feet by 1,100 feet) for the culture of three species of indigenous seaweed. Structures would consist of up to nine 1,050 foot long-lines strung parallel to one another across the length of the lease area (see application for details). Presently, the applicant operates an experimental aquaculture lease for the cultivation of seaweeds within the same footprint as the proposal (CAS CHEB). According to the application the type and amount of gear proposed is identical to that which is currently in use at site CAS CHEB.

General Characteristics

The proposed lease is bounded to the southeast by Little Chebeague Island and to the northeast by Great Chebeague Island. To the east lies a sand bar connecting the two islands at low water. To the west is the main navigational channel as defined by USCG navigational aids.

Bottom Topography

DMR staff inspected the location of the proposed lease and collected underwater video using a digital video camera contained within an underwater housing. The bottom is comprised of soft mud with little topographic variation.

Depth

Water depths within the proposed lease area were collected by dive computers on April 13, 2016. Depths were collected between 1:14 pm and 1:28 pm. An average depth of 31 feet was measured throughout the dive survey. The maximum depth attained was 35 feet. Correcting to mean low water (0.0'), would result in depths roughly 4 feet less than what was observed on April 13, 2016. Ocean Approved, LLC is requesting to place long-lines for kelp culture at a controlled depth of 7'. The location provides adequate depth for the proposed activities.

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>

Position and Distances to Shore

WAAS (Wide Area Augmentation System) GPS was used to navigate to each corner of the proposed lease site. POSAID Positioning Software was later used to verify the metes and bounds. 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 (WGS84) – 3.03 acres (Figure 2)

<u>Corner</u>	<u>Latitude</u>	<u>Longitude</u>	
NW	43° 43' 21.829"N	70° 08' 47.588"W	<i>then 120 feet at 128° True to</i>
NE	43° 43' 21.100"N	70° 08' 46.300"W	<i>then 1100 feet at 218° True to</i>
SE	43° 43' 12.539"N	70° 08' 55.522"W	<i>then 120 feet at 308° True to</i>
SW	43° 43' 13.269"N	70° 08' 56.810"W	<i>then 1100 feet at 038° True to NW.</i>

Distances to Shore (Figures 1 and 2)

NE Corner to nearest MLW – Indian Point	~1,312 feet @ 102°T
NE Corner to dock at Indian Point	~1,330 feet @ 098°T
SE Corner to nearest sandbar (N end Little Chebeague Is.)	~1,495 feet @ 173°T
SE Corner to 12' depth contour (MLW)	~710 feet @ 180°T
SW Corner to Nun "14"	~1,167 feet @ 308°T



Figure 2*

Harbormaster

The Town of Chebeague Island was mailed a Harbormaster Questionnaire on September 11, 2015. A response was received from Genaro Balzano on September 16, 2015. In his response, Harbormaster Balzano indicated the proposed lease site, if approved, would not interfere with navigation, moorings, traditional storm anchorages, or riparian access. He further stated he has seen “very little [fishing] activity” and no gear in the proposed lease area for the last few years.

The criteria MDMR uses to determine the suitability of an aquaculture operation to a particular area (DMR Regulations Chapter 2.37(1) (A)) are discussed, with respect to the application, below:

1. Riparian Owners Ingress and Egress

On April 13, 2016 there were no nearby docks or moorings with which the proposed activities might interfere. Access to the Indian Point dock, located on Great Chebeague Island and more than 1,300 feet from the proposed lease, would not be restricted. There is more than adequate room to approach the dock from the north and the south.

Little Chebeague Island is an uninhabited island owned by the Maine Bureau of Parks and Lands. Access occurs on foot via the sand bar connecting to Great Chebeague Island or by directly landing vessels on one of the beaches. The proposed activities will not preclude vessel access to Little Chebeague Island.

2. Navigation

The east side of the main navigational channel between Lower Basket Island and Great Chebeague and Little Chebeague Islands is defined by Red Nuns “12”, “14”, and “16”. The southwestern corner of the proposed lease is located approximately 1,100 feet from this channel. Navigation in the vicinity of the proposed lease would likely consist of vessels travelling to the Indian Point dock, to the sandbar between the islands, and nearshore recreational boaters. Adequate room exists on all sides of the proposed lease to accommodate these activities.

3. Fishing

On April 13, 2016, no fishing activities were observed within the boundaries of the proposed lease site. No epibenthic fauna, in commercially exploitable quantities, was observed during the MDMR SCUBA assessment (see section 5. Existing System Support). The benthic assessment further confirmed that the proposed lease area has a bottom composition of soft mud. Divers were able to insert the entire length of their arms into the sediments without meeting resistance. It is likely that lobsters would move over this bottom at certain times of year, however, little structure is present that would tend to “hold” lobsters in this area.

Recreational hook and line fishing may also occur in the areas adjacent to the proposed lease.

The applicant has been culturing marine algae in this location, under an experimental aquaculture lease, since 2012. No changes in the type or amount of gear are proposed. According to the application the site would be empty of gear during the months of July and August, when recreational fishing and the commercial harvesting of lobster and crabs are likely most prevalent in the area.

4. Other Aquaculture Uses

The names and distances to the MDMR leases and Limited Purpose Aquaculture (LPA) licenses nearest the proposal are listed below. Distances were measured, straight-line, in ArcMap 10.2. The applicant currently has a 3.03 acre experimental aquaculture lease for the long-line culture of seaweeds (CAS CHEB) within the same footprint as the proposal. See Figure 3 for a graphic representation of surrounding aquaculture activities.

Henry Whetham, Little Chebeague Island, LPA for the suspended culture of American oysters (**WHET1 14**): ~1,793 feet to the south.

Ocean Approved, LLC., Little Chebeague Island, long-line culture of seaweed (**CAS LCI2**): ~4,214 feet to the south.

David Whiston, Great Chebeague Island, LPA for the suspended culture of shellfish (**WHIS416**): ~4,761 feet to the east.

Trundy Point, LLC., south of Little Chebeague Island, suspended culture of blue mussels (**CAS LONG**): ~4,812 feet to the southwest.

David Whiston, Great Chebeague Island, LPA for the suspended culture of shellfish (**WHIS213**): ~4,914 feet to the east.

David Whiston, Great Chebeague Island, LPA for the suspended culture of shellfish (**WHIS112**): ~1.10 miles to the east.

Trundy Point, LLC., Basket Island, suspended culture of shellfish (**CAS BASK**): ~1.10 miles to the northwest.

David Whiston, Great Chebeague Island, LPA for the suspended culture of shellfish (**WHIS314**): ~1.11 miles to the east.

Mark Green, Basket Island, LPA for the suspended culture of shellfish (**GRE105**): ~ 1.20 miles to the northwest.

Mark Green, Basket Island, LPA for the suspended culture of shellfish (**GRE310**): ~ 1.27 miles to the northwest.

The proposed activities are unlikely to impact existing aquaculture operations in the area.

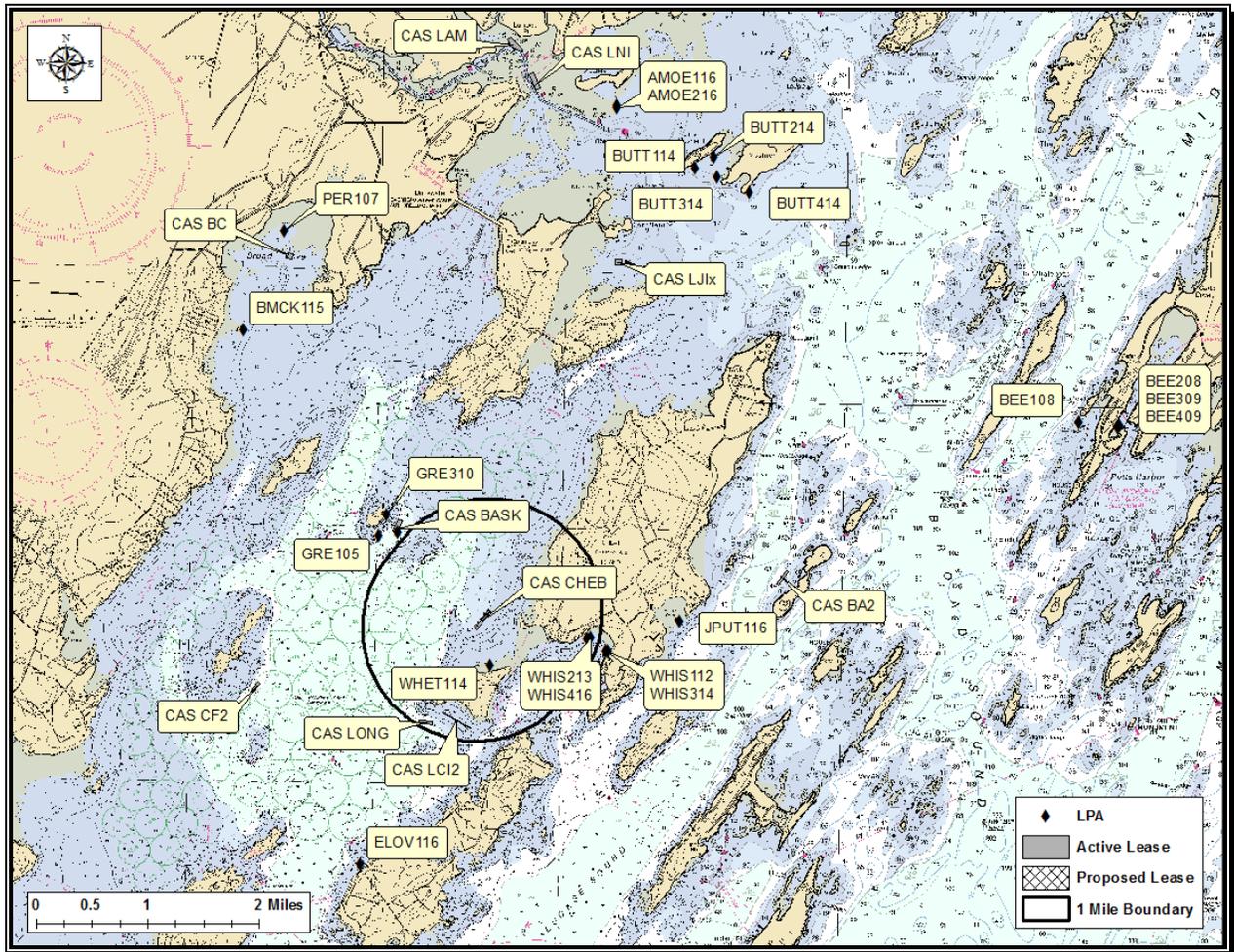


Figure 3*

5. Existing System Support

Flora and fauna from underwater video observations

On April 13, 2016, MDMR staff used a digital video camera contained within an underwater housing to document the benthic ecology of the proposed lease area. With the exception of the occasional burrowing anemone (*Edwardsia sp.*) and lobster (*Homarus americanus*) or crab burrow, the benthos consisted of relatively featureless soft mud covered in benthic diatoms.

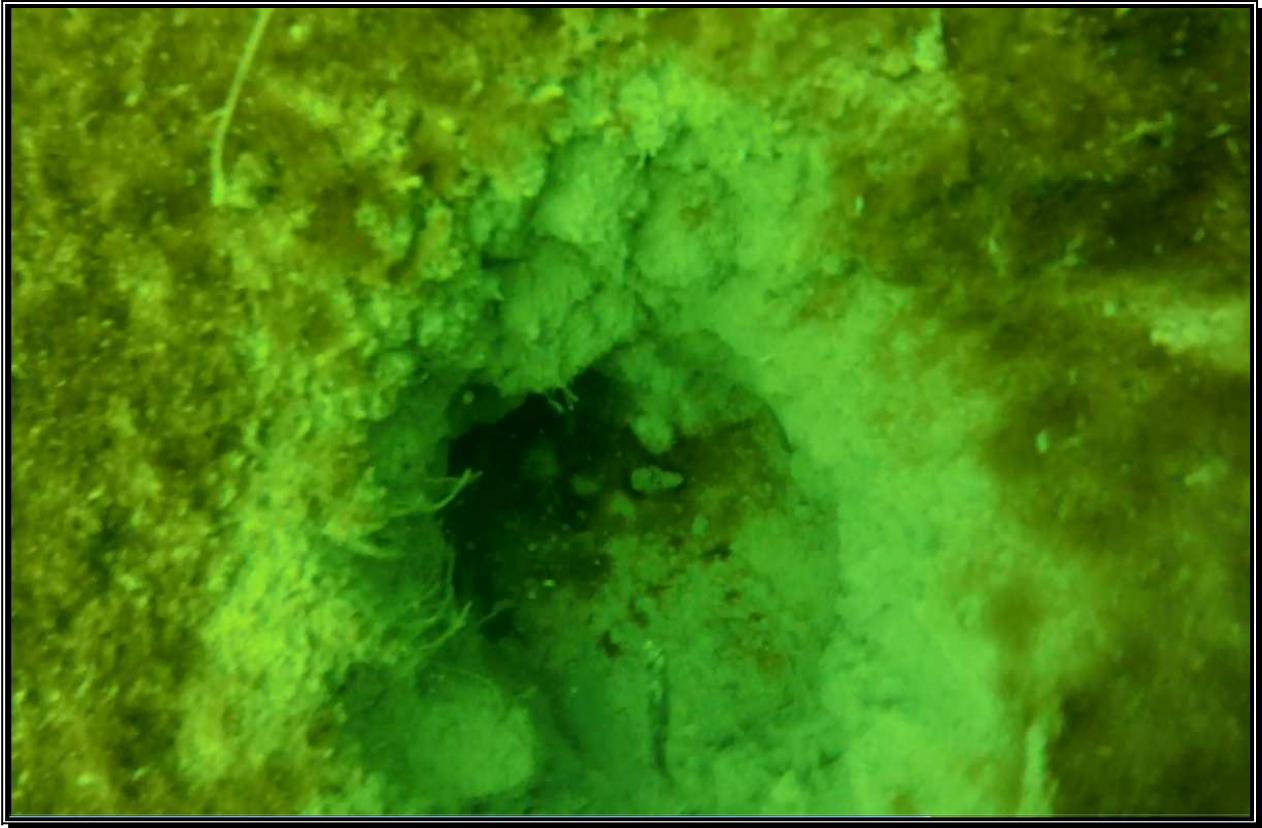


Figure 4: Lobster/crab burrow in soft sediments, April 13, 2016.

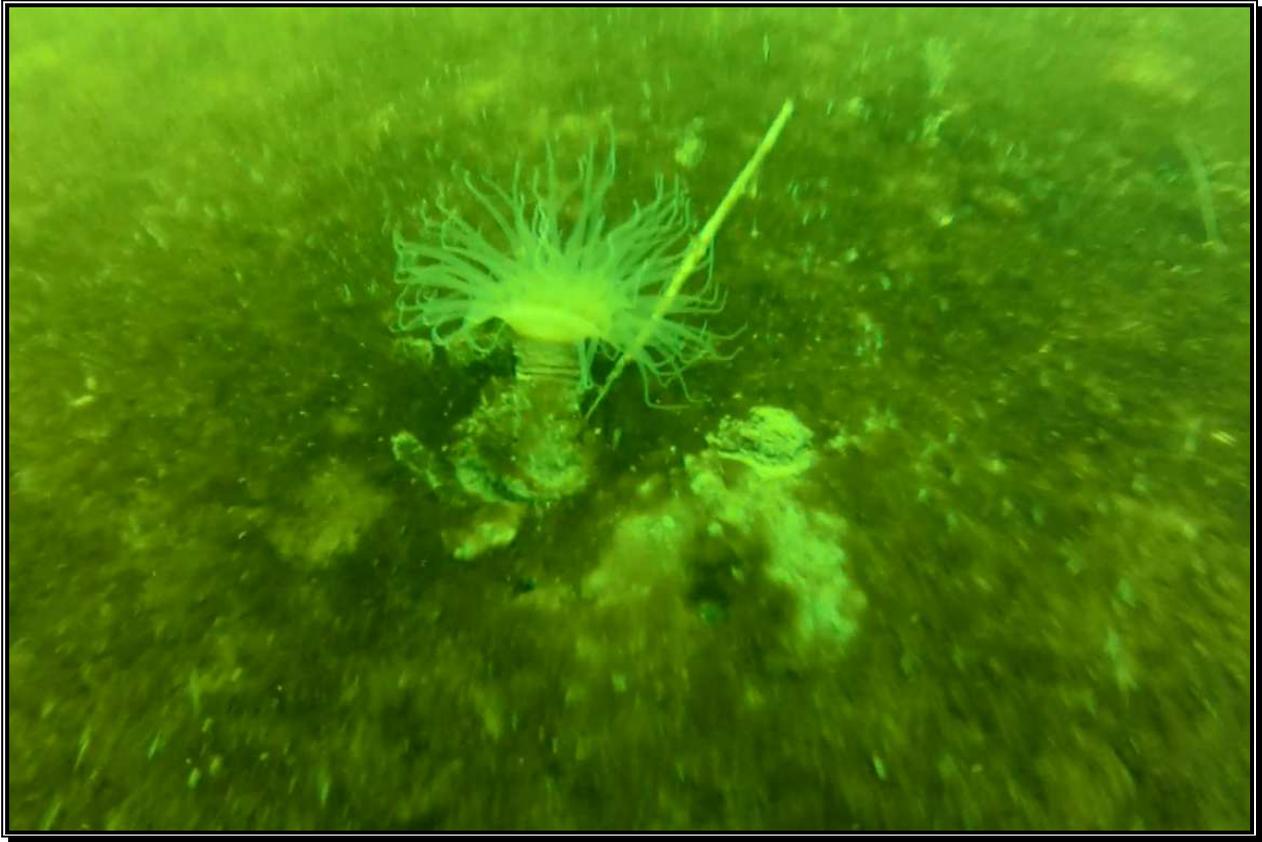


Figure 5: Burrowing anemone observed on April 13, 2016.

No attached or rooted submerged aquatic vegetation such as eel grass (*Zostera marina*) was observed within the boundaries of the proposed lease area. Data collected for the Casco Bay Estuary Project in 2013 confirm the presence of eelgrass in the shallow subtidal waters surrounding Great Chebeague and Little Chebeague Islands (Figure 6). The proposed lease area is greater than 700 feet to the west of the nearest documented eelgrass.



Figure 6: Density and distribution of eelgrass (*Zostera marina*) in relation to the proposal.

Fisheries and Wildlife

The western shorelines of Great Chebeague and Little Chebeague Islands are classified as Tidal Waterfowl/Wading Bird Habitat by the Maine Department of Inland Fisheries and Wildlife (MDIF&W). The proposed lease site would be located greater than 700 feet to the west of this Significant Wildlife Habitat. The application and a request for comments were sent to the MDIF&W on September 11, 2015. At the time of this report a response had not been received.

6. Interference with Public Facilities

There are no publically owned facilities within 1,000 feet of the proposed lease. The docking facility at Indian Point, Great Chebeague Island is located more than 1,300 feet to the east.

Little Chebeague Island is owned by The State of Maine, Bureau of Parks and Land. It is accessible by foot from Great Chebeague Island via a sandbar exposed at low tide. Access to the island, via the water, requires anchoring in the shallows offshore or landing vessels directly on one of the beaches. Recreational boaters, kayakers, and beachgoers regularly use the island. At mean low water the proposed lease is more than 1,500 feet from the island.

7. Lighting

No lighting is proposed for use at the site. The application states there are no plans to work the lease, if granted, beyond daylight hours.

8. Noise

The applicant has proposed using an 18 foot skiff with a 50 hp four stroke outboard motor for routine site activities such as seeding, monitoring, maintenance, and harvesting. Four stroke outboard engines are some of the quietest on the market. A non-motorized 24' harvest barge will also be employed for the purposes of harvesting and gear removal at the conclusion of each production cycle.

9. Visual Impact

All proposed long-lines will be submerged 7 feet below the surface of the water. Mooring balls (x27) and depth control buoys (X54) will be the only visible gear at the surface.

No building is planned as part of this proposal.

The 24' pontoon barge will be moored in Falmouth, ME or removed from the water when not in use at the site.

10. Water Quality Classification

The proposed lease is in an area currently classified by the Department of Marine Resources Public Health Division as "Open" for the harvest of shellfish. This classification, however would not affect the harvest of algae from the proposed lease site. Likewise, biotoxin, or PSP closures, would not affect the proposed lease activities.