

Department of Marine Resources
Site Review #2015-24

Trundy Point, LLC.
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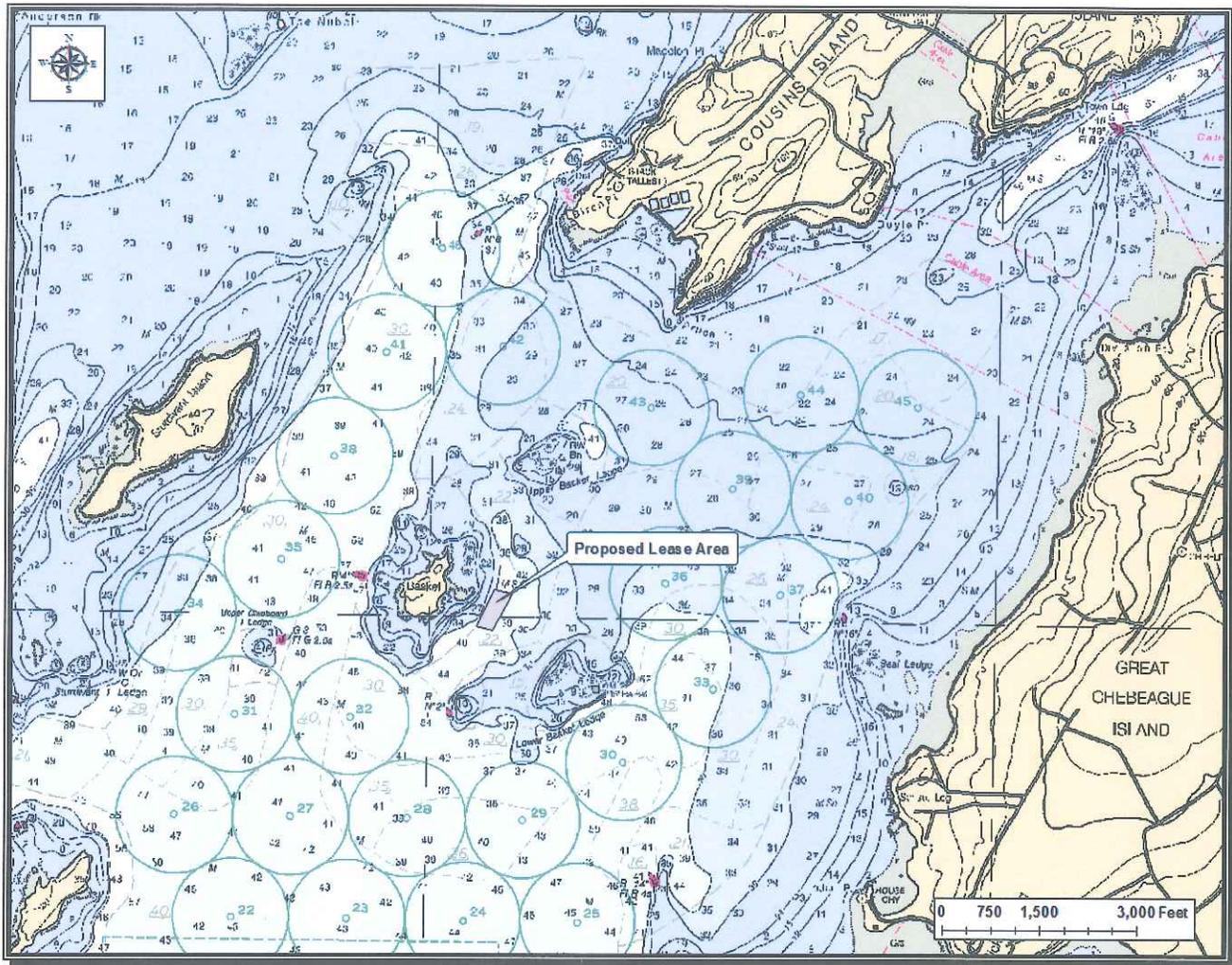


Figure 1*

Location: East of Basket Island, Casco Bay, Cumberland, Cumberland County, Maine

Purpose: Suspended culture of blue mussels (*Mytilus edulis*), American oysters (*Crassostrea virginica*), and sea scallops (*Placopecten magellanicus*).

Site Review by: Jon Lewis and Marcy Nelson, DMR

Report Preparation by: Jon Lewis and Marcy Nelson, DMR

May 27, 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, staff from The Maine Department of Marine Resources (MDMR) visited the site proposed for the suspended culture of blue mussels (*Mytilus edulis*), American oysters (*Crassostrea virginica*), and sea scallops (*Placopecten magellanicus*) located east of Basket Island, in the town of Cumberland, Maine

General Characteristics

Bottom Topography and Currents

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 a mixture of soft mud and sand. Water depth increases slowly from west to east and south to north. Currents run along the axis of the proposed lease site from SW to NE.



Figure 2*

The proposed aquaculture lease site is located approximately 270 feet to the east of Basket Island in approximately 40 feet of water at low tide (Figures 1 and 2).

The application states 4.5 acres as the total acreage requested. The application (page 2, Site Location, Plan View, 7) states the longitude of all corners as 07 degrees west longitude. Assuming the

applicant meant 70 degrees west longitude, and by calculating the distances and bearings between proposed lease corners an area of **4.01 acres** is described. (See below: Position and Distances to Shore, Application Corner Coordinates).

Proposed gear to be used at the site includes up to 15 mussel rafts, 14 – 600 foot longlines, 200 shellfish grow-out cages, 250 wire shellfish cages, 500 Japanese lantern nets, 500 scallop or oyster grow-out bags or 250 plastic containers; or some combination of each.

Depth

Water depth at the proposed lease site on April 13, 2016 ranged between 35 and 40 feet with the deeper water being found in the eastern and northern portions of the proposed lease site. Low tide on April 13 was predicted to occur at 10:55 am and at a -0.4 foot tide height. DMR staff were on the site and collected depth measurements between 11:00 am and 12 noon.

Correcting for tidal range would derive water depths approximately 9.5-10 feet higher at full high tide (45’-50’). This is deep enough to accommodate the proposed activities. If the lease is granted, the applicant will want to ensure that dropper ropes and predator nets are adjusted with sufficient clearance of the bottom to ensure sea stars and crabs are unable to climb these vertical structures.

Ice

Due to water depths and wind, the area is not expected to ice over during winter months. Structures such as rafts, lines, and buoys will accumulate freezing spray however.

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 Garmin MapSource 4.12, NOAA Chart #13318, and the application coordinates.

The acreage described in the application is **4.01 acres**.

Application Corner Coordinates (Datum WGS84)

<u>Corner</u>	<u>Latitude</u>	<u>Longitude</u>	
NW	43° 44’ 04.19”N	70° 09’ 46.26”W	<i>thence 275.2 feet at 103.8° True to</i>
NE	43° 44’ 03.54”N	70° 09’ 42.62”W	<i>thence 651.7 feet at 206.5° True to</i>
SE	43° 43’ 57.78”N	70° 09’ 46.58”W	<i>thence 275.8 feet at 284.9° True to</i>
SW	43° 43’ 58.48”N	70° 09’ 50.21”W	<i>thence 646.8 feet at 026.6° True to NW.</i>

Distances to shore (Figures 1 and 2):

The proposed lease is located approximately 270 feet to the east of Basket Island. The below distances to shore are estimates based on the currently available aerial photography (Google Earth, May 2010), MapSource Charting software and observations made during the site assessment.

NW Corner to nearest Basket Island ledges	~270 feet @ 260°T
W Boundary to nearest Basket Island upland	~690 feet @ 290°T
S Boundary to Red Nun "2"	~1,505 feet @ 196°T
SE Corner to ledges to east	~1,145 feet @ 128°T
SE Corner to 30' depth contour to east	~880 feet @ 146°T
NE Corner to Sturdevant Island	~4,750 feet @ 297°T

Harbormaster

The town of Cumberland was mailed a Harbormaster Questionnaire on January 4, 2016. A response was received from Lt. Milton Calder on February 3, 2016. In his response, Lt. Calder indicated the proposed lease had been "moved" 100 feet to the east to "allow more free movement for boats coming and going from Falmouth to the area around Cousins Island" (see section 2, Page 5, Navigation), and that the site would not interfere with moorings, traditional storm anchorages, riparian access, commercial or recreational fishing, or publically owned facilities within 1,000 feet of the proposed lease. He also indicated that he felt the moorings proposed were adequate and appropriate.

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

Basket Island is owned by the Chebeague and Cumberland Land Trust, P.O. Box 25, Chebeague Island, ME 04107. They are the only riparian owner within 1,000 feet of the proposed lease site. Ingress and egress to and from Basket Island would be unimpeded by this proposed lease. No docks, floats or improved access points exist on Basket Island.

(2) Navigation

The main navigational channel around Basket Island is to the west of the island as defined by buoys 2 and 4. This channel is approximately 1,500 feet to the south of the proposed lease boundary.

There is an unmarked channel between Basket Island and Lower Basket Ledges and to the south of Upper Basket Ledges. The proposed lease would encroach approximately 300 feet into this channel,

however approximately 800 feet of water with depths of 30 feet or greater would remain to the east of the proposed lease site.

In response to the question of whether this application interferes with navigation in designated channels, Lt. Milton Calder, Harbormaster for the Town of Cumberland, replied in a Harbormaster Questionnaire: "We have discussed the original location and have moved the project 100 feet to the east to allow more free movement for boats coming and going from Falmouth to the area around Cousin's Island".

Plotting the existing lease location and the proposed lease location does not indicate that the project has been "moved" 100 feet to the east but instead has expanded approximately 60 feet eastward, 100 feet northward and the southern boundary has been moved 30 feet northward.

The remaining 800 feet of water to the east of the proposed lease that is 30 feet or more deep should be more than adequate to accommodate transit through this area.

(3) Fishing

During the site visit on April 13, 2016 no commercial or recreational fishing was observed in the vicinity of the lease site. This is not surprising considering the season. Lobstering may occur later in the year around the lease, as water temperatures increase during the summer months. According to the Harbormaster some recreational fishing for mackerel takes place to the north of the proposed lease.

No urchins, scallops, or other commercially harvested species were observed in commercially exploitable quantities on the bottom of the proposed lease during the SCUBA survey.

(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. The applicant currently has a 2.71 acre experimental aquaculture lease for the culture of blue mussels (CAS BASK) within the proposed location. See Figure 3 for a graphic representation of surrounding aquaculture activities.

Mark Green, Basket Island, LPA for the suspended culture of shellfish (**GRE310**): ~ 588 feet to the west.

Mark Green, Basket Island, LPA for the suspended culture of shellfish (**GRE105**): ~ 673 feet to the southwest.

Ocean Approved, LLC., west of Indian Point, Chebeague Island, long-line culture of seaweed (**CAS CHEB**): ~1.10 miles to the southeast.

Henry Whetham, Little Chebeague Island, LPA for the suspended culture of American oysters (**WHET1 14**): ~1.45 miles to the southeast.

Ocean Approved, LLC., Little Chebeague Island, long-line culture of seaweed (**CAS LCI2**): ~1.67 miles to the south southeast.

Trundy Point, LLC., south of Little Chebeague Island, suspended culture of blue mussels (CAS LONG): ~1.70 miles to the south southeast.

Wild Ocean Aquaculture, LLC., Clapboard Island, suspended culture of blue mussels (CAS CF2): ~1.82 miles to the southwest.

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

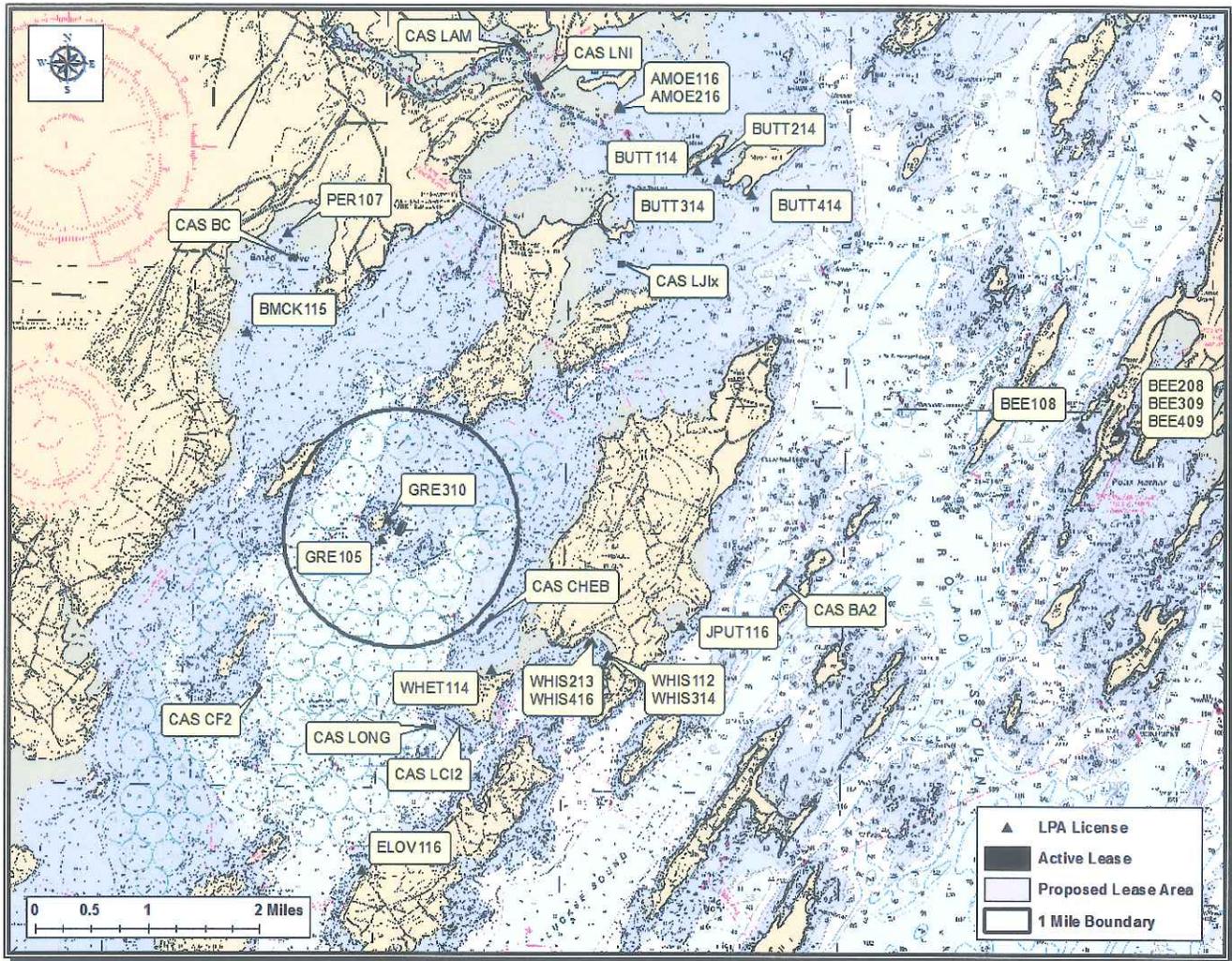


Figure 3*

(5) Existing System Support

Flora and fauna from underwater video observations

On April 13, 2016, Maine Department of Marine Resources (MDMR) staff documented the benthic ecology in the proposed lease area with a digital video camera contained in an underwater housing.

The relative abundance of epibenthic macroflora and fauna observed throughout the video transects is described below.

No rooted submerged aquatic vegetation such as eel grass (*Zostera marina*) was observed within the boundaries of the proposed lease area. Data collected by Seth Barker for the Casco Bay Estuary Project in 2013 confirm the presence of eelgrass in the shallow subtidal waters surrounding Basket Island (Figure 4).

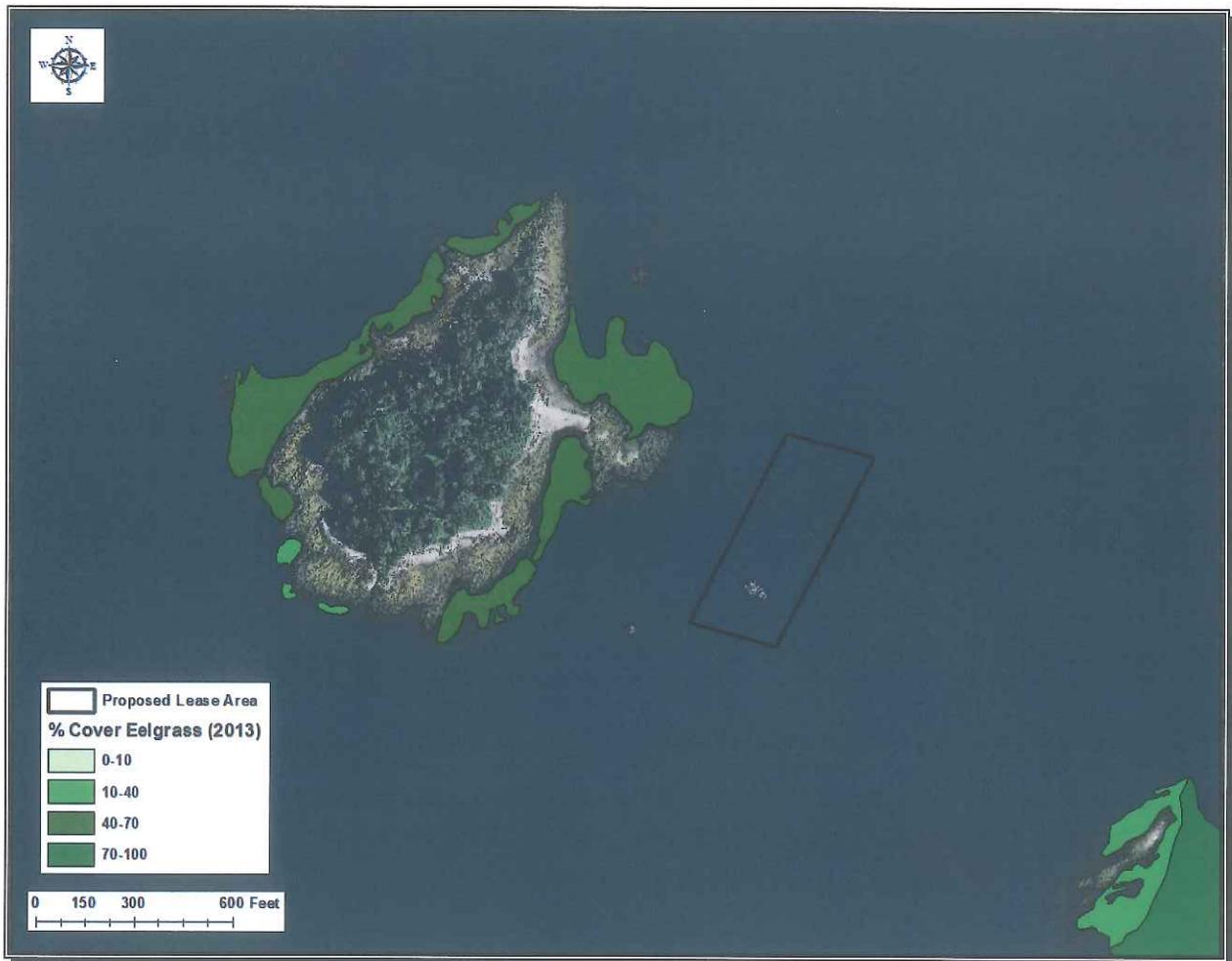


Figure 4: Density and distribution of eelgrass (*Zostera marina*) in relation to the proposal.

The most common faunal species observed were sea stars (*Asterias spp.*), burrowing anemones (*Edwardsia sp.*), blue mussels (*Mytilus edulis*), and nudibranchs (unknown species).

Other species observed include ubiquitous benthic diatoms on the surface of the mud,

Sand Shrimp (*Crangon septemspinosa*) – common

Mysid Shrimp (*Praunus flexuosus*) – common

Rock crab (*Cancer sp.*) – occasional

Sea scallop – (*Placopecten magellanicus*) –rare

Boring sponge (*Cliona celata*) - rare

Unidentified juvenile fishes around un-rooted seaweed patches - occasional

Nudibranch egg cases -rare

It is possible that in summer months lobsters and crabs may be present in the area in greater numbers.

Fisheries and Wildlife

The eastern shoreline of Basket Island is classified as Tidal Waterfowl/Wading bird habitat by the Maine Department of Inland Fisheries and Wildlife (see Figure 5). The proposed lease site would be located approximately 250' east of this Significant Wildlife Habitat. The application and a request for comments were sent to the IF&W on January 4, 2016. John, MacLaine, Habitat Outreach Biologist replied on January 12, 2016 that there are no resources in the project area under MDIF&W jurisdiction that would be affected by the project, so they had no comments related to the project.

During the DMR site visit on April 13, 2016, no waterfowl or wading birds were observed within this habitat. Birds may occupy this habitat later in the season.

During the site visit of April 13, 2016, DMR staff observed approximately 100 harbor seals (*Phoca vitulina*) hauled out on the intertidal ledges of Basket Island. With farm employees on site and the 43' lobster boat tied to the western side of the existing mussel rafts the seals appeared completely undisturbed.



Figure 5: Tidal Waterfowl/Wading Bird Habitat to east of Basket Island (delineated by green shading).

(6) Interference with Public Facilities

There are no publically owned facilities within 1,000 feet of the proposed lease.

(7) Lighting

The applicant indicates that “generally” no lighting would be used at the proposed lease site other than 1-5 watt, red, LED lights to deter ducks from the mussel rafts. No further description of these LED lights is provided in the application.

(8) Noise

The applicant has proposed using a diesel powered lobster boat (ubiquitous in the area), hydraulics, wash down hoses, conveyors, a seeding machine, mussel declumper, a star wheel (similar to a lobster hauling block), and power washing equipment. The power source for this equipment is below deck of

the lobster boat and therefore should produce little external noise. Anticipated noise levels from lease activities would be similar or less than other waterborne activities in the area.

(9) Visual Impact

Mussel rafts proposed for this lease site are the standard in the mussel raft industry. Rafts would extend approximately three feet above the water when unseeded and 1-2 feet above the water when full. The rafts are a mixture of steel gray beams, natural wood cross-members and black floats. Predator nets are blue green and light red according to the application and would mostly be below the water's surface.

Oyster and scallop cages are black or green and also would be suspended below the water's surface.

No building is planned as part of this proposal.

(10) Water Quality Classification

The proposed lease is in an area currently classified by the Department of Marine Resources Water Quality Classification program as "open/approved for the harvest of shellfish".