Department of Marine Resources
Site Review #2011-03
(Johns River)

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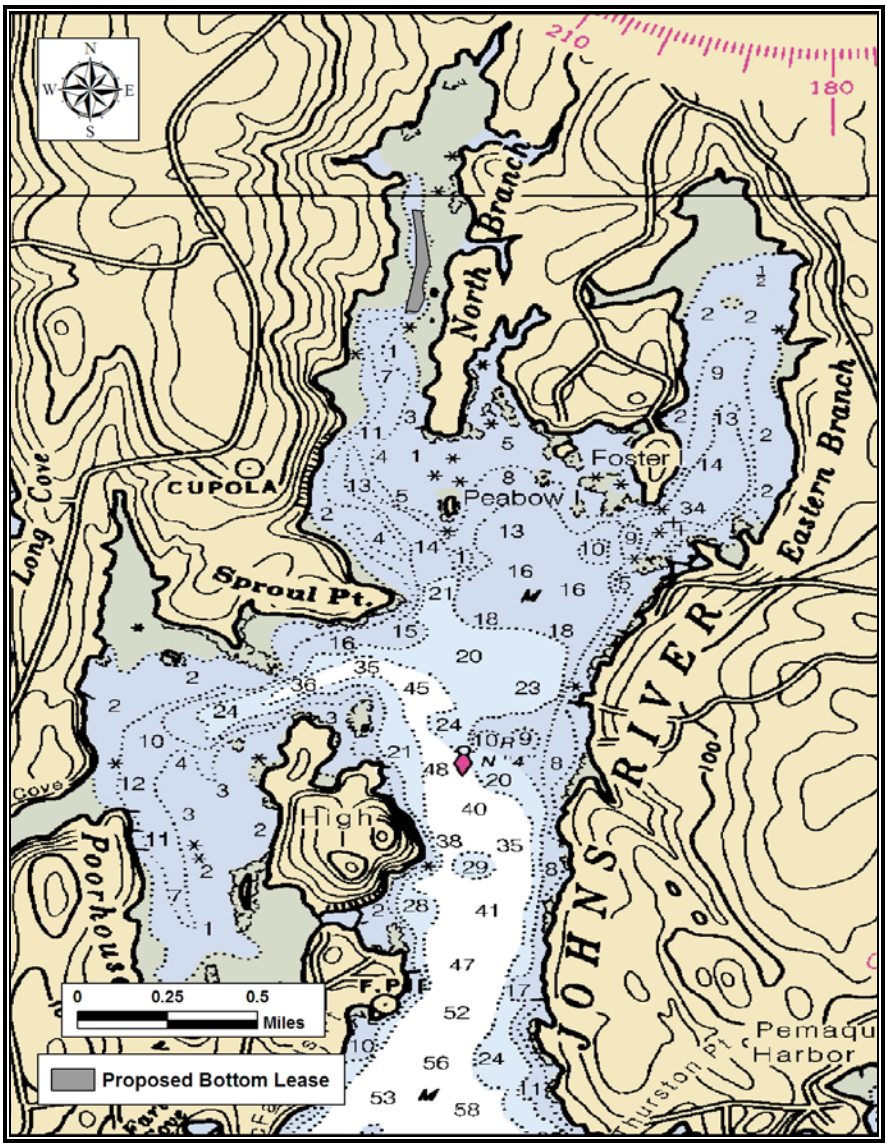

Figure 1*

Location: North Branch, Johns, South Bristol, Maine

Purpose: Bottom culture of American oysters (*Crassostrea virginica*), hard clams (*Mercenaria mercenaria*), and European oysters (*Ostrea edulis*)

Site Review: Jon Lewis and Marcy Nelson, MDMR

Report Preparation: Jon Lewis and Marcy Nelson, MDMR July 26, 2011

* *All figures in this report were created in ArcMap version 9.3 using digitized NOAA Nautical Charts or geo-referenced aerial photographs taken at low tide (2004) and provided by The Maine Office of GIS.*

On June 28, 2011, staff from The Maine Department of Marine Resources (DMR) visited the site proposed for the bottom culture of shellfish (see above) in the North Branch of the Johns River, in the town of South Bristol, Maine. The applicant is requesting to enlarge an existing limited purpose (experimental) bottom lease site (JOHN NB) of 1.85 acres to a standard lease site of 4.2 acres (Figure 2).

DMR staff arrived on site at approximately 9:30 a.m.

General Characteristics

Using SCUBA and an underwater video camera, DMR staff documented the epibenthic ecology of the area. Two divers entered the water at the northern end of the proposed lease site and swam meandering, independent courses to the southern end of the proposed lease; following a general direction of 195° magnetic (Figure 2). One diver carried an underwater video camera; visibility was approximately 4-6 feet.

Bottom Topography and Currents

The proposed aquaculture lease site is located within the northern half of the North Branch of the Johns River. It occupies the main, deep-water channel and is bordered by rocky shorelines and sand, silt intertidal areas.

The northern half of the proposed lease is a mixture of mud and sand and is softer than the southern end of the proposed lease site. A gradual shift to rocky outcrops and a sand/shell-hash mixture occurs from north to south.

Depth

East Boothbay, Damariscotta River, Maine
http://tbone.biol.sc.edu/tide

43.8650° N, 69.5833° W

2011-06-28	03:36 EDT	0.97 feet	Low Tide
2011-06-28	09:43 EDT	7.86 feet	High Tide
2011-06-28	15:32 EDT	1.62 feet	Low Tide
2011-06-28	21:47 EDT	9.37 feet	High Tide

Water depths, during the Department's assessment, ranged between 9 and 18 feet. Depths were measured at each proposed corner using a transom mounted depth sounder and within the channel using a dive computer. Depths are shallower to the north. Sounder recordings were obtained between 09:32 and 09:45; within 16 minutes of high water (see above). Correcting for tidal range would derive water depths roughly 8 feet lower at mean low water (MLW).

Ice

The area of the proposed lease is expected to ice over in some winters. Drift ice from the upper reaches of the river is expected to flow through the lease site. During winter months, buoys may be moved offsite by ice and may have to be reset in the spring.

Position and Distances to Shore

At the time of the Department's visit, the applicant's proposed lease was marked by thirteen corner buoys. The two northernmost and two southernmost buoys were reportedly anchored with helix moorings and the remaining nine were anchored with concrete blocks. Buoys essentially defined the deepwater channel. Latitude and longitude for each of these 13 buoys were collected using a WASS enabled Global Positioning System receiver. ArcGIS version 9.3 was used to verify the location of the proposal.

Garmin MapSource 4.12 Positioning Software was used to determine the metes and bounds for the coordinates. Distances to shore were determined using the measuring tool in Garmin MapSource 4.12, NOAA Chart #13293, and the application coordinates listed below.

Marker Buoy Coordinates (Datum WGS84) – 4.2 acres

Corner	Latitude	Longitude	
NW	43° 54' 58.0"N	69° 32' 43.1"W	thence 092 feet at 104° True to:
NE	43° 54' 57.8"N	69° 32' 41.9"W	thence 414 feet at 172° True to:
East –North	43° 54' 53.7"N	69° 32' 41.1"W	thence 194 feet at 173° True to:
East – North 1	43° 54' 51.8"N	69° 32' 40.8"W	thence 176 feet at 174° True to:
East-North 2	43° 54' 50.1"N	69° 32' 40.5"W	thence 179 feet at 196° True to:
East –South 2	43° 54' 48.4"N	69° 32' 41.2"W	thence 158 feet at 190° True to:
East –South 1	43° 54' 46.9"N	69° 32' 41.6"W	thence 184 feet at 173° True to:
East –South	43° 54' 45.1"N	69° 32' 41.3"W	thence 205 feet at 200° True to:
SE	43° 54' 43.2"N	69° 32' 42.3"W	thence 135 feet at 275° True to:
SW	43° 54' 43.3"N	69° 32' 44.1"W	thence 380 feet at 010° True to:
West-South	43° 54' 47.0N	69° 32' 43.2"W	thence 331 feet at 008° True to:
West-Middle	43° 54' 50.2"N	69° 32' 42.6"W	thence 356 feet at 000° True to:
West –North NW.	43° 54' 53.7"N	69° 32' 42.6"W	thence 436 feet at 355° True to

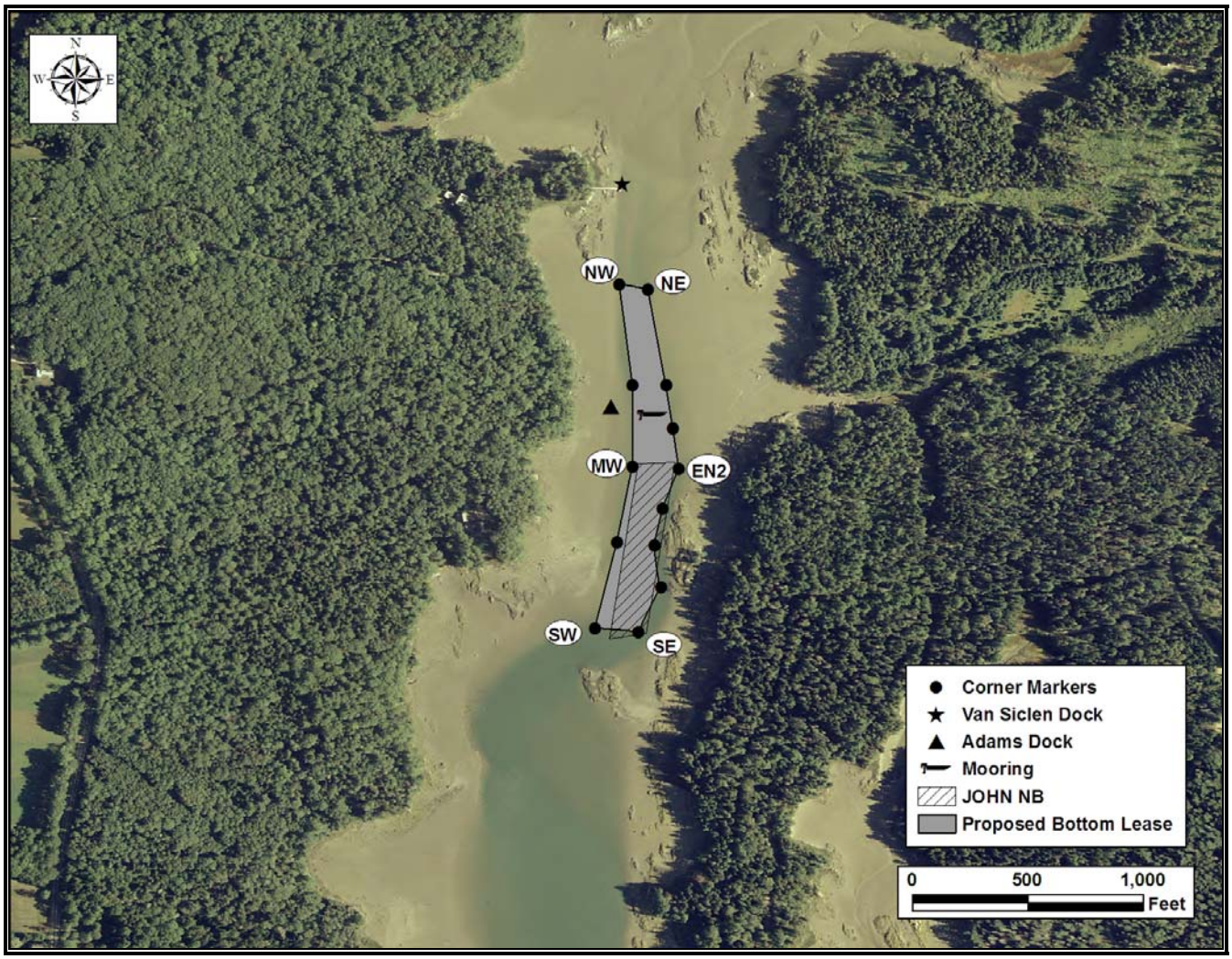

Figure 2*

Distances to shore (Figures 1& 3):

The proposed lease site is located in the deep water channel. The sides of this channel slope gradually upward to mudflats to the east and west. The proposed lease is approximately 150 feet from the mudflats to the northeast and as close as 50 feet in other areas.

Harbormaster

A "Harbormaster Questionnaire" was mailed to Mr. Cecil Burnham, Harbormaster for the town of South Bristol, on January 31, 2011. Mr. Burnham returned the questionnaire with comments that in his opinion the proposed lease would not interfere with navigation, traditional storm anchorages, riparian owner access, or publically owned lands or facilities. He did mention some lobstering, striper fishing, and mackerel fishing in the area. He also mentioned three moorings in the area; the Robinson mooring (unregistered) 1,000 feet away, the Adams mooring (registered), and to the north of the site a small mooring for Samuel Kaymen.

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:

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1) **Riparian Owners Ingress and Egress**

As there will be no structures on this proposed lease other than corner markers that are very similar to lobster trap buoys, there should be no restriction of shorefront property owner access.

See Section **2) Navigation** for a discussion of navigation / riparian access during periods of proposed harvest using SCUBA or a small drag.

2) **Navigation**

No gear other than corner makers would be placed in the water to restrict navigation.

During harvesting, particularly at low water when available space for navigation is at a minimum, the potential for interaction with transiting vessels exists. Harvesting with SCUBA in shallow water carries an intrinsic risk of vessel interaction. The flying of an Alpha (blue and white) dive flag would be required by law. Technically, this flag identifies a tending vessel as "restricted in its ability to maneuver". There is no minimal separation or "do not approach" distance required for approaching vessels; however they should keep "safe distance" from the flag. A safe distance is difficult to estimate when an approaching vessel does not know exactly where the diver is located in relation to the flag. For this reason, any diver harvesting should be accompanied by a dive tender able to communicate a route of safe passage to approaching vessels. A tender should remain close to the diver in the water and should use the tender vessel to create a physical obstruction between the diver and any approaching vessel. An alternative would be for the diver to attach themselves to the flag so they remain within a fixed distance of this signaling device.

Drag harvesting is also proposed. Typically a small drag 3-4 feet in width is towed behind a boat. This restricts the ability of the harvesting vessel to maneuver and would require other vessels to give right-of way. With a small navigational corridor this could become problematic if the harvesting vessel does not communicate its intent to provide a safe corridor for passage to an approaching (burdened) vessel in a reasonable amount of time.

3) **Fishing**

During the site visit on June 28, 2011 approximately 50 lobster trap buoys were observed in the vicinity of the proposed lease. The majority of the lobster fishing activity was in the southern half of the proposed lease where rocky outcrops, firmer bottom substrate, and as observed during our SCUBA survey, the most lobsters were located.

It is likely that recreational anglers may fish the surrounding flats and the deeper waters of the proposed lease site for striped bass and bluefish.

The harvest of soft-shell clams (*Mya arenaria*) is common in the intertidal areas to the east and west. Razor clams are also reported to reside in the subtidal sediments to the west. The proposed lease activities will not preclude the continued harvest of intertidal species of shellfish.

4) Other Aquaculture Uses

Aquaculture activities in the Johns River are currently limited to those conducted by the applicant. Mr. Cheney has a 1.85 acre bottom (no gear) aquaculture lease for the cultivation of American and European oysters in the North Branch of the Johns River (JOHN NB, Figure 2). The current proposal, if awarded, would replace lease JOHN NB. Mr. Cheney, in addition, operates two Limited-Purpose License sites (LPAs) for the deployment of surface gear, and with an allowable area of 400 square feet each, in the Eastern Branch of the Johns River.

For more information on aquaculture activities in Maine please visit http://www.maine.gov/dmr/aquaculture/leaseinventory/index.htm.

5) Existing System Support

Flora and fauna from underwater video observations

On June 28, 2011, Maine Department of Marine Resources (MDMR) staff documented the relative abundance of epibenthic macroflora and fauna observed using SCUBA and underwater video.

Two divers entered the water at the north end of the proposed lease site and swam meandering, independent courses to the southern end of the proposed lease; following a general direction of 200° magnetic. One carried an underwater video camera. Underwater visibility was approximately 4-6 feet. The dive started at 10:46 a.m. and ended at 11:32 a.m.

Bottom sediments are a mixture of mud and silt over firm sand at the northern end of the site and transition quickly to shell-hash over sand with occasional rocky outcrops at the southern end.

No eel grass (*Zostera marina*) or other attached or rooted vegetation was observed.

Fauna observed and relative abundance is as follows:

Finger Sponge (*Haliclona oculata*) - rare
Blue Mussel (*Mytilus edulis*) - rare
American oyster (*Crassostrea virginica*) – common; abundant in southern half
American Lobster (*Homarus americanus*) – common; increasing toward south
Hermit crab (*Pagurus spp*) - rare
Green crab (*Carcinus maenus*) - rare
Rock crab (*Cancer irroratus*) – rare – increasing toward south
Sand (mud) shrimp (*Crangon septemspinosa*) – common – most abundant to north

Wildlife

Upland characteristics are that of a wooded, relatively undeveloped shoreline. Few houses were visible from the water. An osprey (*Pandion haliaetus*) nest was noted to the northeast of the proposed lease. The North Branch is recognized as a feeding ground for numerous avian species. The applicant is proposing to freely plant oysters in subtidal waters and dive or drag harvest once they have reached a marketable size. The potential to negatively impact the nearby nest or shorebirds will be no greater than the current uses of the river and surrounding shore – clam digging, fishing and recreation.

According to a letter provided to the applicant by Maine Department of Inland Fisheries and Wildlife (MDIF&W) Regional Biologist Keel Kemper and dated December 20, 2010, no Essential or Significant Wildlife Habitats are within the area of the proposed lease. MDIF&W was mailed a copy of the application and a "Request for Review and Comment" on February 1, 2011. At the time of this report the Department had received no feedback.

On March 23, 2007, during MDMR's hearing on Mr. Cheney's smaller experimental lease in the same location, Mr. Kemper provided testimony regarding the potential impacts of the proposed activities on wildlife, particularly waterfowl, in the area. At that time Mr. Kemper felt the proposal "will have minimal impact on waterfowl and wading birds".

6) Interference with Public Facilities

No public facilities are located within 1,000 feet of the proposed lease.

7) Lighting

The applicant indicates that no lighting would be used at the proposed lease site.

8) Noise

The applicant owns a 37' lobster boat and a 15' Corson (with a 50 hp outboard motor) with which he would tend the site, if granted. Both vessels are typical of commercial and recreational activities along the coast of Maine. Mr. Cheney has indicated a desire to pressure wash oysters during harvest operations. The pressure washer is built into the lobster boat and operates off the muffled engine of that vessel.

9) Visual Impact

There will be no structures placed in the water other than buoys marking the perimeter of the proposed lease site. These buoys would be very similar to lobster buoys that are frequently seen in the surrounding area.

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".