

**STATE OF MAINE**  
**DEPARTMENT OF MARINE RESOURCES**  
Application for Experimental Aquaculture Lease  
Bottom culture of green sea urchins  
Jordan River, Trenton and Lamoine

**Ocean Resources, Inc.**  
**Lease JORD TLx**  
Docket # 2014-11-E  
  
April 7, 2016

## FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION

Ocean Resources, Inc., applied to the Department of Marine Resources (“DMR”) for a three-year experimental aquaculture lease on 4 acres<sup>1</sup> located in the coastal waters of the State of Maine, in a narrow section of the Jordan River between Lamoine and Trenton, Hancock County, for the purpose of raising green sea urchins (*Strongylocentrotus droebachiensis*) using bottom culture techniques (App 3). DMR accepted the application as complete on August 1, 2014. No one intervened in this case, and no public hearing was held on this application.

### 1. THE PROCEEDINGS

Notice of the application, the DMR site report, and the 30-day public comment period were provided to state and federal agencies which were requested to review the project, as well as to riparian landowners, the Towns of Lamoine and Trenton and their Harbormasters, members of the Legislature, representatives of the press, aquaculture and environmental organizations, and others on the Department’s mailing list. Notice of the application and comment period was published in the *Ellsworth American* on August 7, 2014. No comments or requests for a hearing were received by the Department.

The evidentiary record before the Department regarding this lease application includes the application and the Department’s site report dated July 17, 2015, as well as the case file, which includes the Harbormaster’s Report. The evidence from all of these sources is summarized below.<sup>2</sup>

### 2. DESCRIPTION OF THE PROJECT

#### Site Characteristics

On June 3, 2015, DMR biologists visited the proposed lease site and assessed it and the surrounding area in light of the criteria for granting an experimental aquaculture lease, as described in the site report.

The proposed site consists of a 3.95-acre rectangle in the center of the Jordan River (SR 2). The channel bottom is flat, sloping upward on both sides toward the river banks. The east shore falls steeply

<sup>1</sup> The DMR site report recommends reducing the size of the proposed lease site to 2.96 acres; see Section 3C, Fishing & Other Uses, below.

<sup>2</sup> These sources are cited below, with page references, as CF (case file), App (application), SR (site report).

to the Jordan River, and the river bank subsequently is steep. On the west side, the slope of the shore and river bank is more gradual (App 3). The substrate is sand and gravel with some scattered rocks and ledge (App 3). Depths range from four feet to ten feet at low tide (App 3). According to the application, current speeds in this portion of the Jordan River can reach three knots (App 3).

The proposed lease site lies slightly closer to the Lamoine shore on the east than to the Trenton shore on the west. Distances from the lease site to the nearest shore are as follows (SR 4):<sup>3</sup>

Reestablished NW Corner to Nearest Point (MLW)	~ 133 feet to the west
Reestablished NE Corner to Nearest Point (MLW)	~ 53 feet to the east
SE Corner to Nearest Point (MLW)	~ 30 feet to the east
SW Corner to Nearest Point (MLW)	~ 185 feet to the west

The proposed lease site is in an area currently classified by the Department of Marine Resources Water Quality Classification program as “open/approved for the harvest of shellfish” (SR 5). The applicant will not use private land for access to the lease site (App 2).

### **Proposed Operations**

The applicant proposes to grow green sea urchins (*Strongylocentrotus droebachiensis*) using bottom culture techniques. No bags, cages, nets, or other gear will be used. The purpose of the experimental lease is to study commercial strategies for seeding and growing green sea urchins to marketable size both for the seafood industry and for educational and research purposes.

The applicant intends to introduce up to 150,000 individuals (10 mm in size) in each of the three years of the experimental lease, for a total of 450,000 animals. The seed is to be “tagged” for enforcement purposes (App 2); this tagging consists of injecting the urchins with a harmless dye that will enable them to be identified as originating at the lease site.

Harvesting will be conducted by hand with a diver, using the applicant’s boat as the platform. The applicant does not plan to feed the urchins, relying on the naturally-occurring kelp beds at the site for their food (App 3).

### **3. STATUTORY CRITERIA & FINDINGS OF FACT**

Approval of experimental aquaculture leases is governed by 12 MRS §6072-A. This statute provides that a lease may be granted by the Commissioner of DMR upon determining that the project will not unreasonably interfere with the ingress and egress of riparian owners; with navigation; with fishing or other uses of the area, taking into consideration the number and density of aquaculture leases in an area; with the ability of the lease site and surrounding areas to support existing ecologically significant flora and fauna; or with the public use or enjoyment within 1,000 feet of beaches, parks, or docking facilities owned

---

<sup>3</sup> These distances reflect the 2.96-acre lease site described in Section 3C, below; the northeast and northwest corners have been moved south of those proposed in the application (SR 3).

by municipal, state, or federal governments. The Commissioner must also determine that the applicant has demonstrated that there is an available source of organisms to be cultured for the lease site.

#### **A. Riparian Access**

DMR personnel did not observe docks or moorings within the proposed lease site, although stairways from the uplands to the intertidal zone were observed adjacent to the northwest and northeast corners of the proposed lease site. One dock was located along the shore nearest the southwest corner (SR 4).

The Trenton Harbormaster indicated that the proposed lease would not interfere with access by riparian landowners to and from their shores (CF, Harbormaster Questionnaire).

Because Ocean Resources, Inc. has requested a bottom lease with no structures, no interference with riparian access would be anticipated if the lease were granted (SR 4).

**Therefore, I find** that the aquaculture activities proposed for this site will not unreasonably interfere with the ingress and egress of any riparian owner.

#### **B. Navigation**

The site report describes navigation in the vicinity of the proposed lease site as follows:

Other than corner marker buoys, the proposed lease for the bottom culture of green sea urchins would use no structures at the surface (or on the bottom) that might impede navigation in or around the lease site. The applicant proposes to dive harvest urchins. Any divers should be appropriately tended and as required by law, a dive flag should be displayed anytime harvesting is occurring to warn approaching vessels (SR 5).

The application states that the lease area currently is used for navigation (App 2). According to the Trenton Harbormaster, the proposed lease will not interfere with navigation in designated channels (CF, Harbormaster Questionnaire).

Based on this evidence, it appears that the proposed lease will not hamper navigation in the area. The lease site must be marked in accordance with U.S. Coast Guard requirements.

**Therefore, I find** that the aquaculture activities proposed for this site will not unreasonably interfere with navigation.

#### **C. Fishing & Other Uses**

According to the applicant, the area proposed to be leased is currently used for lobstering and recreational fishing (App 2).

During the site visit, DMR scientists did not observe any fishing activity within or around the proposed lease site; however, the site report states that some recreational fishing and lobstering likely occurs there (SR 5). As the report notes, because the application is for bottom culture only, such fishing activities would not be restricted if the lease were granted (SR 5).

The Trenton Harbormaster indicated that fishing is limited to clamming and mussel dragging; he stated that a local mussel dragger advised the Harbormaster that "he has no objection" to the lease (CF, Harbormaster Questionnaire).

According to the site report, the northern end of the proposed lease site lies within the Jordan River Mussel Seed Conservation Area established by the Department of Marine Resources (DMR Rules Chapter 12). Mussel seed conservation areas are closed to normal wild mussel harvesting but are open to the harvest of seed mussels with a DMR permit. Seed mussels are used for grow-out on aquaculture lease sites or at other locations. Since seed mussels would likely be harvested by dragging, this would pose a danger to sea urchins cultured on the bottom, should the lease site encroach on the conservation area.

The site report states:

The applicant requests that no dragging on the proposed lease site be permitted. This is in direct conflict with the designated usage of the seed conservation area. (See Figure 2).

If the proposed lease were to remain entirely outside the seed conservation area, the lease acreage would be reduced by 43,109 square feet or 0.99 acres. To accomplish this, the northern coordinates would be moved southward and reestablished as follows.

New NW corner: 44° 28.131'N 68° 21.370'W  
New NE corner: 44° 28.131'N 68° 21.296'W (SR 3)

With this boundary adjustment, the site report indicates that the lease site would cover 2.96 acres, rather than the 3.95 acres described in the application (SR 3).<sup>4</sup>

Clearly, a conflict exists between a portion of the proposed lease site, where the applicant requests that dragging be prohibited to protect the cultured sea urchins, and the pre-existing mussel seed conservation area, where dragging would need to be conducted in order to harvest mussel seed. Granting a lease and prohibiting dragging within the boundaries of the mussel conservation area would not be consistent with Department's management of the mussel seed resource. Thus, it is clear that the 0.99-acre area lying within the Jordan River Mussel Seed Conservation Area is not available for this proposed lease. The remainder of the proposed lease site measures 2.96 acres as calculated in the site report and will be considered as the entire proposed lease site for purposes of this decision (SR 3).

**Other Aquaculture Leases.** According to the site report, three leases for the bottom culture of blue mussels are located between 1.2 and 2.3 miles to the southeast of the proposed lease; no interference between the proposed lease and the existing operations is anticipated (SR 5).

**Exclusivity.** The applicant requests that bottom dragging and harvest of sea urchins be restricted from the lease site (App 3). These restrictions are reasonable in order to enable the aquaculture

<sup>4</sup> The site report lists the revised lease boundaries as follows for the 2.96-acre site (SR 3):

NW	44° 28.131'N	68° 21.370'W	thence 322.0 feet at 090.0 degrees True to:
NE	44° 28.131'N	68° 21.296'W	thence 391.3 feet at 173.6 degrees True to:
SE	44° 28.067'N	68° 21.286'W	thence 314.2 feet at 265.6 degrees True to:
SW	44° 28.063'N	68° 21.358'W	thence 416.5 feet at 352.4 degrees True to NW

project to be carried out on the proposed lease site in its smaller 2.96-acre configuration, while encouraging the greatest number of compatible uses of the area, as provided in 12 MRS §6072-A (15).

Based on this evidence, it appears that the proposed lease will not unreasonably interfere with fishing or other uses of the area. The lease must be marked in accordance with DMR Rule 2.80.<sup>5</sup>

**Therefore, considering the number and density of aquaculture leases in the area, I find** that the aquaculture activities proposed for this site will not unreasonably interfere with fishing or other uses of the area.

#### **D. Flora & Fauna**

**Site Observations.** According to the site report, eelgrass has existed on the lease site:

Historical records of eelgrass (*Zostera marina*) distribution (Figure 3) indicate a presence within the boundaries of the proposed lease. Eelgrass has declined sharply throughout many areas of the state and today eelgrass is reportedly greatly diminished in the area with small patches existing along the shorelines and within the proposed lease boundaries (Jane Disney, Mt. Desert Island Biological Laboratory, pers. comm.) (SR 5)

Correspondence in the case file quotes Jane Disney as stating that although there was eelgrass on the lease site in 2008, it had disappeared by 2010 (CF, e-mail Jon Lewis, 6/16/2015.)

The U.S. Army Corps of Engineers has issued permits to Mt. Desert Island Biological Laboratory (MDIBL) to conduct eelgrass restoration projects in the vicinity of the proposed lease site. Correspondence in the case file indicates that the both the applicant and DMR's Jon Lewis asked Jane Disney at MDIBL whether the proposed lease would conflict with the Army Corps-funded eelgrass restoration project. Both the applicant and Mr. Lewis reported that, according to Dr. Disney, the lease location does not overlap with the eelgrass restoration plots (CF, e-mail Kipp Quinby, 9/2/2014; e-mail Jon Lewis, 6/16/2015).

---

#### <sup>5</sup> **2.80 Marking Procedures for Aquaculture Leases**

1. When required by the Commissioner in the lease, aquaculture leases shall be marked with a floating device, such as a buoy, which displays the lease identifier assigned by the Department and the words SEA FARM in letters of at least 2 inches in height in colors contrasting to the background color of the device. The marked floating device shall be readily distinguishable from interior buoys and aquaculture gear.
2. The marked floating devices shall be displayed at each corner of the lease area that is occupied or at the outermost corners. In cases where the boundary line exceeds 100 yards, additional devices shall be displayed so as to clearly show the boundary line of the lease. In situations where the topography or distance of the lease boundary interrupts the line of sight from one marker to the next, additional marked floating devices shall be displayed so as to maintain a continuous line of sight.
3. When such marking requirements are unnecessary or impractical in certain lease locations, such as upwellers located within marina slips, the Commissioner may set forth alternative marking requirements in an individual lease.
4. Lease sites must be marked in accordance with the United States Coast Guard's Aids to Private Navigation standards and requirements.

**Fisheries and Wildlife.** According to the site report, data from the Maine Department of Inland Fisheries and Wildlife (MDIF&W) indicate that there are no Significant or Essential Habitats, Shorebird Nesting Habitats, or Tidal Wading Bird and Waterfowl Habitats in the vicinity of the proposed lease (SR5).

DMR sent a copy of this lease application to MDIF&W for their review and comment. MDIF&W responded, requesting assurance that the project poses no risk to the “continued presence or perpetuation of eelgrass in the lease and adjoining areas.” The site report indicates that eelgrass is “greatly diminished” (SR 5) and Jane Disney reported that the eelgrass had disappeared in the lease area by 2010. Given this situation, it is clear that use of the site for culturing sea urchins will not harm eelgrass.

Based on this evidence, it appears that the experimental lease as proposed for this site will not interfere with the ecology of the area.

**Therefore, I find** that the aquaculture activities proposed for this site will not unreasonably interfere with the ability of the lease site and surrounding areas to support existing ecologically significant flora and fauna.

#### **E. Public Use & Enjoyment**

According to the Trenton Harbormaster, there are no beaches, parks, or docking facilities within 1,000 feet of the proposed lease (CF, Harbormaster Questionnaire). The site report also states that there are no public docking facilities or beaches within 1,000 feet of the proposed lease (SR 5).

**Therefore, I find** that the aquaculture activities proposed for this site will not unreasonably interfere with the public use or enjoyment within 1,000 feet of beaches, parks, or docking facilities owned by municipal, state, or federal governments.

#### **F. Source of Organisms**

According to the application, seed stock for this proposed lease site will be obtained from the University of Maine’s Center for Cooperative Aquaculture Research (CCAR) in Franklin, Maine.

**Therefore, I find** that the applicant has demonstrated that there is an available source of green sea urchins (*Strongylocentrotus droebachiensis*) to be cultured for the lease site.

### **4. CONCLUSIONS OF LAW**

Based on the above findings, I conclude that:

1. The aquaculture activities proposed for this site will not unreasonably interfere with the ingress and egress of any riparian owner.
2. The aquaculture activities proposed for this site will not unreasonably interfere with navigation.
3. The aquaculture activities proposed for this site will not unreasonably interfere with fishing or other uses of the area, taking into consideration the number and density of aquaculture leases in the area.

4. The aquaculture activities proposed for this site will not unreasonably interfere with the ability of the lease site and surrounding areas to support existing ecologically significant flora and fauna.

5. The aquaculture activities proposed for this site will not unreasonably interfere with the public use or enjoyment within 1,000 feet of beaches, parks, or docking facilities owned by municipal, state, or federal governments.

6. The applicant has demonstrated that there is an available source of green sea urchins (*Strongylocentrotus droebachiensis*) to be cultured for the lease site.

Accordingly, the evidence in the record supports the conclusion that the proposed aquaculture activities meet the requirements for the granting of an aquaculture lease set forth in 12 M.R.S.A. §6072-A.

## 5. DECISION

Based on the foregoing, the Commissioner grants the requested experimental lease of 2.96 acres to Ocean Resources, Inc. for three years, the term of the lease to begin within twelve months of the date of this decision, on a date chosen by the applicant<sup>6</sup>; however, no aquaculture rights shall accrue in the lease area until the lease is fully executed.

This lease is granted to the applicant for the purpose of cultivating green sea urchins (*Strongylocentrotus droebachiensis*) using bottom culture techniques. The applicant shall pay the State of Maine rent in the amount of \$100.00 per acre per year. Since this is an experimental lease with no structures, no bond or escrow account is required.

## 6. CONDITIONS TO BE IMPOSED ON LEASE

The Commissioner may establish conditions that govern the use of the lease area and impose limitations on aquaculture activities, pursuant to 12 MRSA §6072-A (15)<sup>7</sup>. Conditions are designed to encourage the greatest multiple compatible uses of the lease area, while preserving the exclusive rights of the lessee to the extent necessary to carry out the purposes of the lease.

The following conditions shall be incorporated into the lease:

1. The lease site must be marked in accordance with both U.S. Coast Guard requirements and DMR Rule 2.80.
2. Dragging and green sea urchin harvesting, except by the leaseholder or its authorized agents, are prohibited on the lease site.

---

<sup>6</sup> DMR Rule 2.64 (14) provides:

“The term of the lease shall begin within 12 months of the Commissioner’s decision, on a date chosen by the applicant. No aquaculture rights shall accrue in the lease area until the lease term begins and the lease is signed.”

<sup>7</sup> 12 MRSA §6072-A (15) provides that:

“The commissioner may establish conditions that govern the use of the leased area and limitations on the aquaculture activities. These conditions must encourage the greatest multiple, compatible uses of the leased area, but must also address the ability of the lease site and surrounding area to support ecologically significant flora and fauna and preserve the exclusive rights of the lessee to the extent necessary to carry out the lease purpose. The commissioner may grant the lease on a conditional basis until the lessee has acquired all the necessary federal, state and local permits.”

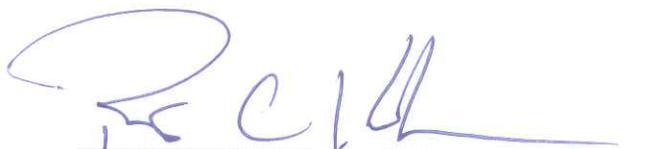
3. Other public uses that are not inconsistent with the purposes of the lease are permitted within the lease boundaries.

**7. REVOCATION OF EXPERIMENTAL LEASE**

The Commissioner may commence revocation procedures upon determining pursuant to 12 MRSA §6072-A (22) and DMR Rule Chapter 2.64 (13) that no substantial research has been conducted on the site within the preceding year, that research has been conducted in a manner injurious to the environment or to marine organisms, or that any conditions of the lease or any applicable laws or regulations have been violated.

Dated: \_\_\_\_\_

4/7/2016



Patrick C. Keliher, Commissioner,  
Department of Marine Resources