

**STATE OF MAINE**  
**DEPARTMENT OF MARINE RESOURCES**  
Experimental Aquaculture Lease Application  
Suspended culture of blue mussels, Blue Hill Bay

**Terrell Gray**  
**Lease BHB HH1**  
Docket # 2011-14E  
April 5, 2012

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

Terrell Gray applied to the Department of Marine Resources (“DMR”) for a three-year experimental aquaculture lease on four acres located in the coastal waters of the State of Maine, in Blue Hill Bay, south of High Head on Newbury Neck in the Town of Surry in Hancock County, for the purpose of cultivating blue mussels (*Mytilus edulis*) using suspended culture techniques. The application was accepted as complete on May 11, 2011. The Friends of Blue Hill Bay and the Town of Surry intervened in this case. A public hearing on this application was held on October 18, 2011, in Surry.

### **1. THE PROCEEDINGS**

Because the Department was aware of public concern about the proposed lease, a hearing was scheduled, preceded by a 30-day public notice and comment period.<sup>1</sup> Notice of the comment period and hearing was published in the *Penobscot Bay Press* on Sept. 15 and Oct. 6, 2011 and in the *Commercial Fisheries News* October, 2011 edition.

Notice of the application, the DMR site report, the comment period, and the public hearing were sent to state and federal agencies which were requested to review the project, as well as to the riparian landowner, the Town of Surry and its Harbormaster, members of the Legislature, representatives of the press, aquaculture and environmental organizations, and others on the Department’s mailing list.

Sworn testimony was given at the hearing by: Terrell Gray; DMR Aquaculture Scientist Marcy Nelson; DMR Aquaculture Environmental Coordinator Jon Lewis; William Matlock for the intervenor the Town of Surry; and Donald Eley for the intervenor Friends of Blue Hill Bay. Mr. Gray described his proposed project (Exhibit 2). Ms Nelson described the site visit (Exhibit 3). Mr. Lewis testified about issues concerning Mr. Gray’s existing aquaculture lease, BHB LI2. Mr. Matlock read a letter from the Surry Board of Selectmen (Exhibit 4) and testified in opposition to the proposed lease. Mr. Eley showed a series of slides (Exhibit 15) and testified in opposition to the proposed lease. In addition, fourteen members of the public testified about the lease, all but one opposing it; a number of these witnesses also submitted written statements (Exhibits 5, 8, 9,

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<sup>1</sup> DMR rule Chapter 2.64 (4) (c) and (5).

12, 13, 14).<sup>2</sup> Each witness was subject to questioning by the Department, the applicant, the intervenors, and members of the public. The hearing was recorded by DMR. The Hearing Officer was Diantha Robinson.

The evidentiary record before the Department regarding this lease application includes 15 exhibits introduced at the hearing (see exhibit list below), and the record of testimony at the hearing itself. The evidence from all of these sources is summarized below.<sup>3</sup>

#### **LIST OF EXHIBITS<sup>4</sup>**

1. Case file, # 2011-14E
2. Application, signed and dated 4-21-11
3. DMR site report, dated 8-25-11
4. Document, letter to Diantha Robinson, DMR, dated 10-14-11, signed by William Matlock, Stephen Bemiss, and Dale Sprinkle, Surry Selectmen, 1 page.
5. Document, letter to Diantha Robinson, DMR, dated 10-18-11, signed by William Walsh, 1 page.
6. Document titled "Notes for Meeting 10/18-11 Surry Elementary School 6:00 pm", undated, unsigned, 2 pages.
7. Document, statement signed by Mary Astbury dated 10-18-11, 1 page.
8. Document, statement signed by Wayne Moon, Jean Moon, and Valerie Moon dated 10-18-11, 1 page.
9. Document, memorandum to Diantha Robinson and Sylvia Brann, undated and unsigned, with signature block for Jay and Suzy Lanigan, 2 pages.
10. Document, memorandum to Diantha Robinson and Sylvia Brann, undated and unsigned, with signature block for Ann Marie Bevan, 1 page.
11. Document, memorandum to Diantha Robinson and Sylvia Brann, undated and unsigned, with signature block for Ellie LeTourneau, 1 page.
12. Document, printed e-mail message to Diantha Robinson from Rob Salois, dated 10-17-11, not signed, 1 page.
13. Document, email to Diantha Robinson from Donna Doyen, dated 10-17-11, signed by Philip E. Doyen and Donna M. Doyen, 1 page.
14. Document, memorandum to Diantha Robinson and Sylvia Brann, undated, signed by Patricia Bartlett, 1 page.

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<sup>2</sup> Witnesses opposing the lease application were: Patricia Bartlett, Donna Doyen, Hans Huber, Laurel Huber, Jamie Kilbreth, Susie Lanigan, Valerie Moon, Robert Newman, Pamela Peters, Robert Salois, Tracy Thurston, John Vickery, and William Walsh. Evan Young testified in support of the application.

<sup>3</sup> In references to testimony, "Smith/Jones" means testimony of Smith, questioned by Jones.

<sup>4</sup> Cited as CF, App, SR, with page numbers or item numbers indicated. Other exhibits are cited by exhibit number.

15. Disc, CD-R labeled "Friends of Blue Hill Bay", containing PowerPoint slides shown at the hearing by Donald Eley.

## **2. DESCRIPTION OF THE PROJECT**

### **Proposed Operations**

Mr. Gray proposes to lease four acres south of Newbury Neck to raise blue mussels in suspended culture using up to three 40' x 40' mussel rafts. According to Mr. Gray, he would start the project with a single raft, but he wants the ability to add a maximum of two more, if the experiment succeeds.

The raft is built on three pontoons supporting five steel I-beams across which are arrayed 2' x 3' wooden timbers from which up to 400 grow-out lines are suspended. The raft will be moored with 180 ft. of rope and chain attached to two 1,100-pound plow anchors, one at each end of the raft or row of rafts. Multiple rafts will be arrayed in a single line, parallel to the shore and moored at the eastern and western ends. Predator nets will be attached on all four sides of the raft from October to April to prevent predation by eider ducks. Clearance between the bottom of the grow-out lines and the sea floor will be approximately 10 ft. at low tide and 20 ft. at high tide (App, item 7).

Mr. Gray testified that seed mussels will be attached to the grow-out lines for a growing period of 12 to 18 months. The mussels will be harvested by bringing the lines aboard either his 30-ft. lobster boat or a 32-ft. barge and taking them to Pretty Marsh harbor on nearby Mt. Desert Island for processing. Mussels will be harvested for periods of 2 to 3 hours at a time on 1 to 2 days per week; Mr. Gray testified that it would take approximately 2 to 2.5 months to harvest an entire raft of mussels. He will hire a crew and work with them to conduct the harvest and processing. During the growing period, Mr. Gray will inspect the raft at least once a month (Gray, testimony; Gray/Nelson; Gray/Eley).

According to Mr. Gray, no lights will be used when working at the lease site, except if necessary in an emergency.<sup>5</sup> No feed or other substances will be added to the water, as the mussels are natural filter-feeders. No noise makers will be used to deter predators. All gear will be contained within the boundaries of the lease. Mr. Gray testified that if mussels prove to grow well on the proposed site, he would ultimately deploy a maximum of three rafts there and would apply to the Department for a standard, 10-year lease (Gray, testimony).

Other details of the proposed operation are described in the sections below.

### **Site Characteristics**

Mr. Gray's site is located off the southeastern side of Newbury Neck in Blue Hill Bay in the town of Surry. It consists of a single rectangular tract, 310 ft. x 563 ft., the longer side lying

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<sup>5</sup>The U.S. Coast Guard prescribes navigational marking requirements for aquaculture leases and may require navigation lights on the mussel rafts.

parallel with the nearby shore, which is part of the promontory called High Head. According to the Department's site report:

The proposed lease is bounded to the north and west by undeveloped uplands and to the south and east by the open waters of northern Blue Hill Bay and the Union River (Figure 1). The adjacent uplands at Newbury Neck are comprised of steep rocky shoreline giving way to mature forest (Figure 3).

Based on the best available charting (NOAA Chart #13316) and the application, water depths within the proposed lease area range between 10 and 60 feet at mean low water (MLW); the western boundary runs parallel with the adjacent shore and the ~10 foot contour while the majority of the area occupies depths ranging from ~30 to 60 feet at MLW. Tidal range in the area is about 10 feet. The subtidal topography within the proposed lease area slopes from northwest to southeast, becoming more gradual with increasing water depths. Depending upon the tidal stage, currents run in a northeast/southwest direction.

The water quality is classified by the Department as "Conditionally Open" for the harvest of shellfish; this classification is dependent upon the proper functioning of the Ellsworth Waste Water Treatment Plant. Harvest of product from the proposed lease, if granted, will be subject to any changes in Water Quality Classification by the Department of Marine Resources Division of Public Health SR p. 2-3; 9).

Mr. Gray testified that he selected the site in the hope that it will prove to be free of some of the disadvantages he has discovered at his existing lease site, lease BHB LI2, located approximately 2.5 miles to the west of the proposed site along the northeast shore of Long Island. The existing lease site is exposed to major currents in the channel, experiences a heavy natural set of mussels and significant predation by starfish and eider ducks, and is more exposed to rough weather than Mr. Gray expects the Newbury Neck site to be. While mussels grow well at the Long Island site, Mr. Gray said, rough seas can cause them to drop off the lines on which they grow, depleting the crop. Exposed conditions can also make it more difficult to reach and work on the site (Gray, testimony).

By contrast, the proposed experimental lease site is sheltered on the north and west by the adjacent mainland of Newbury Neck. Bartlett Island to the southeast also provides some protection. The site is shallower than the existing lease site with slower currents. The experiment will help determine the amount of natural mussel seed set, the extent of predation by starfish, and the growth rates of mussels (Gray, testimony).

Mr. Gray noted that while ice could potentially be a problem for the rafts at the proposed lease site, ice floes in the past four years have been minimal, and he is willing to take the risk that ice might recur. Rafts at his existing lease site have twice been affected by ice flowing out of the Union River at the head of Blue Hill Bay. He said that he regularly fishes for scallops in the area of the proposed lease in winter, so he will check the site at least weekly and make extra trips to monitor the raft if a hard freeze and later thaw occur (Gray/M. Doyen).

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

Approval of experimental aquaculture leases is governed by 12 M.R.S.A. §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 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**

The site report describes the adjacent shore in the vicinity of the lease as follows:

According to the tax maps provided in the application, the surrounding uplands are owned by Mr. Hans Huber. On July 22, 2011 there were no nearby docks or moorings with which the proposed activities might interfere. Two residences are located at Burnt Point more than 2,200 feet to the southwest. A tidally exposed sand/mud bar extends from Newbury Neck to Goose Rock, limiting direct navigation between Burnt Point and the requested area (Figures 2 and 4-6). A pier and float are located on the western side of Burnt Point, ~2800 feet to the southwest (straight-line distance, Figure 2) and beyond the influence of the proposed lease. Additional homes are noted around the northern point of High Head and more than 1,000 feet from the proposed farm.

A private sand beach is located in the cove between Goose Rock and Burnt Point. A second, smaller beach is located ~650 feet to the southwest of the proposed lease (Figures 2 and 6). Vessels may anchor in the surrounding area to access this beach SR 4-7).

According to the tax map submitted as part of the application, Mr. Huber, the sole riparian landowner, owns the entire southern end of Newbury Neck, from a point north of High Head on the east side, around the southern end and north again to a corresponding point on the western side of the peninsula. His land from Burnt Point on the south shore, where two residences and a dock are located, east to High Head where the lease is proposed to be located, is undeveloped wooded uplands, as described above (App, tax map). The larger beach between Burnt Point and Goose Rock, the beach and bar at Goose Rock, and the smaller beach northwest of Goose Rock are all owned by Mr. Huber.

Mr. Huber opposed the lease, citing concerns that the lease would reduce his property value, impair the solitude of the area, detract from the enjoyment of people using the shore and the cove between High Head and Goose Rock, and destroy the beauty of the cove. He testified that people use his shore "by custom" and that he has not objected to this use (Exhibit 6; Huber/Robinson). His dock is located at least 2,800 ft. from, and out of sight of, the proposed lease site (SR 4-5).

The northern boundary of the proposed lease site lies approximately 80 ft. south of the shore of High Head, which is wooded above steep rock ledges (SR 2). Assuming that the 40-ft.-square rafts are centered within the 310' x 563' lease boundaries as shown on the plan in the application, Mr. Lewis testified that 215 ft. of open water would lie between the rafts and the shore to the north (Lewis, testimony). There is ample room for boats to navigate in this area and for the riparian landowner to gain access to his shore in the vicinity of the lease. The proposed lease site is located approximately 650 ft. from the nearest of the beaches on Mr. Huber's property and will not interfere with access to that beach or the rest of Mr. Huber's shoreline.

**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 notes:

The proposed lease area is tucked between Goose Rock and High Head, outside of the primary navigation corridor (Figure 1). More than 1.5 miles of traversable waters lie to the south and east. According to Steve Bemiss, Harbormaster for the town of Surry, the proposed activities will not interfere with navigation in designated channels (Harbormaster Questionnaire, June 13, 2011) (SR 7).<sup>6</sup>

Several members of the public testified that their boating activities in the waters south of High Head would be affected by the location of the proposed mussel rafts. This testimony focused on recreational boating in and around the cove between Goose Rock and High Head. Types of boats mentioned included kayaks, sailboats, canoes, rowboats, and outboards. Concerns expressed dealt mainly with the existence of the rafts as something new in the cove that boaters would need to navigate around.

Boaters navigating in Maine coastal waters must be prepared to deal with moored boats, rafts, and other objects; moving vessels of all types and sizes; lobster buoys and other fishing gear; swimmers and divers; and rocks, currents, wildlife, wind, and fog. It is clear that the addition of one to three 40-ft-square mussel rafts to the waters south of High Head would create obstacles which boaters would need to avoid. The issue for the Department to determine is whether this amounts to unreasonable interference with navigation.

The main channel to the east and south of High Head is approximately a mile and a half wide. Mr. Gray proposes to site the rafts just south of High Head, well out of this channel; as the site report says, the lease is "tucked up" near the shore. As described above, there is adequate room to navigate in the approximately 215 ft. of open water between the rafts and the adjacent

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<sup>6</sup> Although the site report refers to the Surry Harbormaster as Steve Bemiss (who was listed as the harbormaster when DMR mailed the questionnaire to the town), the completed questionnaire was actually signed by Dale Sprinkle, one of the Surry Selectmen.

shore to the north of the proposed lease site. East and south of the rafts, there is virtually unlimited navigable water in all directions.

To the west of the rafts, there is at least 650 ft. of open water between the west corner of the lease site and the smaller beach to the west (SR p. 7). Southwest of the rafts, there is at least 890 ft. of open water between the south corner of the lease and Goose Rock to the southwest (SR p. 7). These distances are measured from the lease boundaries; with the raft(s) centered in the lease site, the amount of navigable open water will be greater, as Mr. Lewis testified.

Even with three rafts in place, there would be ample open water for navigation in the waters surrounding the proposed lease site. Although in some cases vessels will need to navigate around the mussel rafts, this is a common occurrence in boating and does not constitute unreasonable interference with navigation. As noted above, the U.S. Coast Guard will prescribe navigation marking requirements for the lease site.

**Therefore, I find** that the aquaculture activities proposed for this site will not unreasonably interfere with navigation. The lease site must be marked in accordance with U.S. Coast Guard requirements.

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

**Fishing.** The site report describes fishing activity in the vicinity of the proposed lease as follows:

On July 22, 2011 a single vessel was observed hauling lobster traps to the east of High Head. Several trap buoys were observed scattered throughout the area, along the 60 foot contour and deeper (see Figure 2 for the nearest observed buoy). Additional commercial fishing for lobster, crab or scallops may occur in the general vicinity. The harbormaster for the town of Surry, Mr. Steve Bemiss, indicated the presence of lobster, scallop and ground fishing within the area (Harbormaster Questionnaire, June 13, 2011).

Recreational hook and line fishing may also occur in the near shore areas adjacent to the proposed lease (SR 8).

At the public hearing, Mr. Gray said he fishes for scallops in the area and that it is "rare" to see another boat scallop fishing there. He said that lobster gear is usually located south of the proposed lease site, nearer Goose Rock, where there is a "significant amount" of lobster fishing. In the proposed lease area to the north and east of Goose Rock, however, he said there is little lobster gear, even when lobstering is "tight" in the spring (Gray, testimony).

Several witnesses testified that recreational fishing occurs in the vicinity of the proposed lease, in particular mackerel fishing, although no specific information was provided (testimony of

Tracy Thurston, Robert Salois, Donald Eley, William Matlock).<sup>7</sup> Robert Salois testified that for six of the past eight years he has fished five lobster traps under a recreational lobster license. Although he has not set traps for the past two years, he said that when he used to do this, he would place three traps in the area of the lease and two more at High Head. He said he was concerned that if, in the future, he set his traps in the 215 ft. of water between the raft and the shore, his boat might drift into the raft when he is hauling the three traps.

**Other uses.** Witnesses testified that other activities occur in the vicinity of the proposed lease, including sailing, kayaking, canoeing, motor boating, tubing, water skiing, wakeboarding, picnicking on the beaches, camping on the shore, overnighting aboard boats, swimming, and using paddleboards (testimony of Valerie Moon, Susie Lanigan, Tracy Thurston, Laurel Huber).

William Walsh testified that he and his family use the area “every day” between April and November, with ten kayaks, two sailboats, three outboard boats, and two paddleboards. He said that Goose Rock shelters the cove from the wind and currents. He and Susie Lanigan expressed concern that children using boats, particularly for water skiing or tubing, or boaters in fog without radar would be at risk for collision with the rafts. Patricia Bartlett testified that the area has been “a safe place for kids for fifty years.” Again, other than Mr. Walsh’s count of boats, no specific numbers of users, dates, times, or frequencies were provided, although witnesses conveyed the impression that the beaches, shore, and cove are frequently used for many recreational activities, especially in summer.

Some of the concerns described by witnesses focused on the possibility of noise from devices used to deter predators on the lease site; on the possibility of lights being used at the proposed site; and on the possibility that cormorants might roost on the rafts and create an unpleasant odor, which has apparently occurred at Mr. Gray’s existing lease site off Long Island and on ledges in the wild where cormorants perch.

Mr. Gray testified that no lights would be used on the site except in case of an emergency. (Lighted navigational markers may be required by the U.S. Coast Guard.) He said that he would not use noisemakers to deter predators, and Mr. Lewis indicated that the Department would not allow noisemakers to be used on lease sites. Mr. Gray also testified that if an odor problem from cormorants developed on the rafts, he would address it (Gray/Thurston). Mr. Young testified that cormorants are attracted to windy areas where they can dry their wings and that the sheltered nature of the proposed lease site would probably deter them from using the rafts there. If activity in the area is as extensive as the testimony indicated, Mr. Young said, the cormorants would be deterred, in any event (Young, testimony).<sup>8</sup>

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<sup>7</sup> DMR Rule Chapter 2.37(1)(A)(3) requires the Commissioner to examine “such factors as the number of individuals that participate in recreational or commercial fishing, the amount and type of fishing gear utilized, the number of actual fishing days, and the amount of fisheries resources harvested from the area.”

<sup>8</sup> Should odor problems develop at the site from cormorants using the rafts to roost on, Ms Nelson noted that DMR rules [Chapter 2.75] prohibit the creation of a public nuisance on a lease site, and that the Department can require the lessee to

Additional activities described by witnesses included observing wildlife and enjoying what they described as the “solitude” and “remoteness” of the area. Mr. Huber expressed his fear that if the experiment succeeded and a ten-year lease were granted to Mr. Gray, the lease site might expand enough that he could see it from his house on Burnt Head, which he said would disturb him and his wife, who enjoy their property for its remoteness, solitude, and aesthetics, for which they pay high property taxes. Exhibits 6, 10, 11, 13 contain similar statements by others at the hearing.

Mr. Matlock testified on behalf of the Town of Surry that the town opposes the lease because it will interfere with traditional recreational uses of the area, and there is no corresponding benefit to the town from the operation of the lease. He did not supply details on the nature and amount of use of the area, but he said that “significant” numbers of people kayak to the beaches in the summer and that people live in Surry “for the water” (Matlock/Nelson; Matlock/L. Vickery).

Mr. Eley testified on behalf of the Friends of Blue Hill Bay. He noted the natural beauty of the area and said that locating a mussel farm there “would affect how people feel about it”. He agreed that the site is “a great place for Terry” but argued that mussel rafts “will forever change the nature of High Head – it won’t be the same place for our kids.” He said that the lease would interfere with recreational fishing for mackerel in the area, saying that he “would not want to fish there because of the change in character” caused by the presence of the mussel rafts (Eley/Robinson). He noted the popularity of the beach and the cove as an area for recreational activities. He questioned whether the current would be as high as Mr. Gray estimated, and he argued that three mussel rafts is too many for an experimental lease. Mr. Eley said that DMR is too inclined to encourage aquaculture and that he is not “seeing a balanced approach” from the Department. He argued that the Department should deny the lease because it interferes unreasonably with recreational fishing, other water-related uses, and marine habitat (Eley, testimony).

While some testimony emphasized the intensity and variety of recreational use of the cove, other testimony focused on the area’s remoteness, solitude, and wildlife. Mr. Lewis noted that it is difficult to reconcile statements about large numbers of people with boats and recreational gear making intense use of the area with other statements valuing its “pristine”, remote, unspoiled nature and expressing concern that the mussel farm might disturb wildlife (Lewis, testimony).

**Discussion.** While it appears that commercial fishing for lobster, crab, and scallops and possibly recreational fishing for mackerel occur in the area, there is no evidence that the mussel rafts would interfere with such fishing to any significant degree. Fishing would be allowed in the

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wash the raft or otherwise mitigate the odor problem. She testified that the Department has not received complaints about an odor at Mr. Gray’s Long Island raft site and that the Department’s law enforcement division, Maine Marine Patrol, has inspected the site but has not reported problems with odors there (Nelson, testimony).

open areas of the lease site, which includes most of the four-acre site other than the rafts and moorings (see Exclusivity, below). Activities on the lease site would be similar to other commercial fishing activity in the area. Nothing in the operation of the mussel farm other than the location of the rafts themselves would physically hamper any commercial or recreational fishing activities.

The location of three 40-ft.-square rafts in the waters off High Head will not obstruct access to the shore. Some 215 ft. of open, navigable water will lie between the rafts and the adjacent shore, adequate space for boats engaged in fishing activities of the type that occur in the area. The lease boundaries are approximately 650 ft. from the smaller, northerly beach and 890 ft. from Goose Rock. Even with the rafts in place, the actual amount of open water will be greater than those distances indicate, since the rafts occupy only a small portion of the proposed lease site, as Mr. Lewis pointed out. Access to the privately-owned shore, including the beaches and Goose Rock, will be unhindered, and ample space remains in the cove between High Head and Goose Rock for recreational activities to continue there.

The rafts will be located in the outer portion of the cove, away from the beaches that are apparently a main focus of activity. Nevertheless, they will be an additional item in the water for recreational and other users of the water to avoid, just as they must avoid lobster buoys, fishing boats, recreational boats, and all the other users of the waters. While this may require some additional caution, it does not constitute an unreasonable interference with other uses of the waters.

It is apparent from the testimony of most of the witnesses opposing the proposed lease that, in addition to concerns about possible physical interference of the mussel rafts with their recreational activities, they believe that the presence of the rafts will change the "character" of the cove, and they do not want this to happen.

The Department must judge lease applications in accordance with the legal criteria. Issues of changes in "character", "aesthetics", "property values", and the like are not included in those criteria. If a beach, park, or docking facility within 1,000 ft. of the proposed lease site were owned in fee by the federal, state, or municipal government, the effect of the proposed lease on the "public use and enjoyment" of that beach, park or docking facility would be properly considered under 12 MRSA §6072 (7-A) (F).<sup>9</sup>

**Exclusivity.** Mr. Gray requested in his application only that no one disturb the growing mussels or discharge pollutants in the water near the raft, both of which would be illegal in any event. The application states that "Commercial and recreational fishing is allowed around the raft, but not from the raft"; using the raft for any purpose without Mr. Gray's permission would

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<sup>9</sup> 12 MRSA § 6072 (7-A) (F) requires, in part, that a proposed lease "not unreasonably interfere with public use or enjoyment within 1,000 feet of a beach, park or docking facility owned by the Federal Government, the State Government or a municipal governmental agency"; only this portion of criterion (F) applies to an experimental lease (12 MRSA §6072-A (8); DMR rules Chapter 2.64 (7)(A)).

likewise be illegal. Fishing and boating will therefore be permitted in open areas of the proposed lease site. If Mr. Gray marks only the occupied area of the lease site, the moorings and mooring lines must be included within the marked area. The lease must be marked in accordance with DMR Rule 2.80.<sup>10</sup>

**Other aquaculture leases.** There are a number of other aquaculture leases in Blue Hill Bay and nearby waters; distances from the proposed lease site range from 1.7 to 5.4 miles. According to the site report, “The proposed activities are unlikely to interfere with existing aquaculture operations in the region” (SR 8).

**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. Fishing and boating will be permitted in open areas of the lease site. The lease site must be marked in accordance with DMR Rule 2.80.

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

DMR aquaculture scientist Marcy Nelson described her findings as a result of the site visit she made on July 22, 2011. She explained that the Department also uses information provided by the local harbormaster in response to the Harbormaster Questionnaire, by the applicant in the application, and by other agencies as a result of their review of the application. The Department does not normally conduct SCUBA dives on experimental lease sites, as it does on all proposed standard (10-year) lease sites. In this case, however, Mr. Gray dove on the proposed site and listed his findings in his application (App, item 6).<sup>11</sup> The site report states:

According to records available at MDMR, there are no documented eelgrass (*Zostera marina*) beds within the proposed area. The western portion of the proposed lease exhibits a rocky subtidal area with steep gradient that is more conducive to various algal species (i.e. kelps). Water depths and subsequent light attenuation in the flat portions of the lease site (45 to 60 feet) likely prevent the proliferation of eelgrass in the area.

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#### **<sup>10</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.

<sup>11</sup> Species observed by Mr. Gray included brown algae, scallops, kelp, one crab, and three starfish (App, item 6).

See the application for a description of flora and fauna observed during a SCUBA dive conducted by the applicant in March 2011. With the exception of some migration by lobsters (*Homarus americanus*) to warmer offshore waters during the winter months, little seasonal variation in the ecology of the area is expected (SR 8-9).

The site report notes that a harbor seal haul-out and a seal pupping area are located some distance from the proposed lease site to the northwest and east, respectively, and that activities at the proposed lease site “are unlikely to interfere with resting and pupping activities occurring at either of these locations” (SR 8-9).

Although witnesses described seeing eagles, ospreys, porpoises, and seals in the vicinity of High Head, there is no evidence in the record that the lease activities will conflict with these or other wildlife resources in the area. The Department sent a copy of the application and a request to review it to the Maine Department of Inland Fisheries and Wildlife, which normally responds when it has concerns about potential interference with wildlife resources. Ms Nelson testified that no response was received from MDIF&W. The site report notes that data from MDIF&W available to DMR indicates that “the area under consideration is not located within a designated “Essential Wildlife Habitat” or “Significant Wildlife Habitat” (SR 8-9). Bald eagles are no longer listed as an endangered species by the federal government. Oversight of eagles is now conducted primarily by the U.S. Fish & Wildlife Service, which will participate in the federal agencies’ review of the lease application conducted by the U.S. Army Corps of Engineers.

Ms Nelson testified that she and Mr. Lewis had studied the effects of mussel rafts on the benthic (sea bottom) environment.<sup>12</sup> The sites studied included Mr. Gray’s existing lease site, BHB LI2, which they described as “showing the greatest impact we had observed to date”, including a four-to-five-inch layer of dropped mussel shells and areas of heavy *Beggiatoa* growth.<sup>13</sup> Mr. Gray testified that the mussel shells accumulated when harvested mussels were also processed on the lease site and shells were dropped to the bottom, a practice he said he has discontinued. He also said that a heavy overgrowth of wild mussels on his dropper lines at the site resulted in more mussels dropping off the over-weighted lines and accumulating on the bottom (Gray, testimony).<sup>14</sup>

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<sup>12</sup> Lewis, J. and M. Nelson. 2008. Investigation of Benthic Conditions under Mussel-Raft Farms. Maine Department of Marine Resources, Boothbay Harbor, ME, 2008. 20 pp. Cited as “Mussel Raft Study.” This study was referred to in the course of the public hearing by Ms. Nelson and Mr. Eley. The Department hereby takes official notice of the study as a matter within the Department’s specialized knowledge according to DMR Rule Chapter 2.31 (2).

<sup>13</sup>Ibid, p. 2. *Beggiatoa* is a bacterium present in areas where accumulation and decomposition of organic matter temporarily depletes the oxygen in sediments. Anoxic sediments are inhospitable to most forms of benthic marine life.

<sup>14</sup> The DMR study also noted that nets and ropes were observed on the bottom of the Long Island site and that they “act as a trap for organic sedimentation” (Mussel Raft Study, p. 7). At the hearing, Mr. Gray testified that he had removed the ropes, but that the predator net had become entangled with errant lobster gear and had proved too difficult to remove. Mr. Lewis testified that the Department believed that the net had been removed and was surprised to learn that this was not the case. He apologized for the Department’s oversight. Mr. Gray apologized for the delay in removing the net and

Ms Nelson testified, and the mussel raft study indicates, that any benthic impacts were limited to the immediate footprint on the bottom below each raft, that they are not permanent, and that they are easily reversed by moving the raft as little as ten feet away so that natural processes can complete the decomposition of the accumulated material. The study notes that the sea bottom in the vicinity of the various mussel rafts reviewed in the study is consistently sparse in terms of marine life and concludes that "it appears that siting of these mussel rafts is appropriate, in that they have not been located over sensitive or naturally rich environments" (Mussel Raft Study, p. 7).

Mr. Eley argued that the proposed lease application should be denied because of the possibility that mussel shells might accumulate beneath the rafts and create anoxic conditions, as the study shows they did at the Long Island site (Eley, testimony). Mr. Gray testified that mussels will not be processed at the proposed lease site and that part of the experiment is to determine whether, as he hopes, the natural mussel set will be lower there than at the Long Island site, with less chance of over-weighting the dropper lines with an overgrowth of mussels and consequent increased drop-off (Gray, testimony). Thus, the conditions that caused the accumulation of mussels below his Long Island site are unlikely to be replicated at the proposed lease site.

Nevertheless, Ms Nelson testified that it is possible that there could be some drop-off of mussels at the proposed lease site during the term of the experiment. Any effects on the benthos would be limited to the area within the footprint of the raft, an area that, like the surrounding bottom at the proposed lease site, is already "depopulated", Ms Nelson said (Nelson, testimony). Therefore, even if mussels accumulate beneath the rafts faster than natural processes can decompose them, and if anoxic conditions occur, there is little, if any, benthic marine life on the bottom of the site that will be harmed. Should Mr. Gray apply for a standard (ten-year) lease to succeed the experimental lease, DMR biologists will conduct a SCUBA dive on the site. If benthic impacts are found, they will be addressed by moving the raft; there is room within the lease site to do this, Ms Nelson said (Nelson, testimony).

**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 site report, "There are no public docking facilities or beaches within 1000 feet of the proposed lease" (SR 9).

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promised to attend to it promptly. Subsequent to the hearing, Mr. Gray advised the Department that the net had been removed from the bottom of the Long Island site.

**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, the source of blue mussel seed for the proposed lease site is Tight Rope Mussel Farm in Hancock, Maine, and possibly a natural set of mussels at the site (App, cover page and item 3 (B)).

**Therefore, I find** that the applicant has demonstrated that there is an available source of blue mussels (*Mytilus edulis*) 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. The lease site must be marked in accordance with U. S. Coast Guard requirements.
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. Fishing and boating will be permitted in open areas of the lease site. The lease site must be marked in accordance with DMR Rule 2.80.
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 blue mussels (*Mytilus edulis*) 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 four acres to Terrell Gray 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>15</sup>; however, no aquaculture rights shall accrue in the lease area until the lease is fully executed. This limited-purpose (experimental) lease is granted to the applicant for the purpose of cultivating blue mussels (*Mytilus edulis*) using suspended culture techniques. The applicant shall pay the State of Maine rent in the amount of \$100.00 per acre per year. As this is an experimental lease with structures in excess of 400 square feet but no discharge, the applicant shall post a bond or establish an escrow account pursuant to DMR Rule 2.40 (2) (A) in the amount of \$5,000.00, conditioned upon his performance of the obligations contained in the aquaculture lease documents and all applicable statutes and regulations.

## **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>16</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. Fishing and boating are permitted in open areas of the lease site.

## **7. REVOCATION OF 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.

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<sup>15</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>16</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.”

Dated: April 5, 2012



**Patrick C. Keliher, Commissioner  
Department of Marine Resources**