

STATE OF MAINE

DEPARTMENT OF MARINE RESOURCES

Standard Aquaculture Lease Application

Bottom Culture of Blue Mussels

Bean Island, Frenchman Bay, Sorrento, Maine

Acadia Aqua Farms, LLC
(Originally submitted by Aquaculture
Harvesters, LLC)

Docket # 2007-09

Lease FREN BI

Decision Date: January 13, 2009

FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION

On June 14, 2007, the Department of Marine Resources ("DMR") received an application from Aquaculture Harvesters, LLC, for a standard aquaculture lease on 32.49 acres [determined in the site report to be 32.33 acres] located in the coastal waters of the State of Maine, north of Bean Island in Frenchman Bay, in the Town of Sorrento in Hancock County, for the purpose of cultivating blue sea mussels (*Mytilus edulis*) using bottom culture techniques. The application was accepted as complete on November 6, 2007. A public hearing on this application was held on May 20, 2008, in Sorrento, Maine.

1. THE PROCEEDINGS

Notices of the hearing and copies of the application and DMR site report were sent to numerous state and federal agencies for their review, as well as to a number of educational institutions, aquaculture and environmental organizations, the Town of Sorrento and the Sorrento Harbormaster, members of the Legislature, representatives of the press, riparian landowners, and other private individuals. Notice of the hearing was published in the *Ellsworth American* on April 17 and May 8 and in the *Commercial Fisheries News* May edition.

Sworn testimony was given at the hearing by: the applicant, represented by Theo and Fiona de Koning; DMR's Aquaculture Environmental Coordinator, Jon Lewis; Harold Page, Selectman of Sorrento; and several members of the public: Francis Ballard, Harold Clark, Jack Crothers, Dick Davis, Lawrence de Milner, and James West. Mr. de Koning gave a slide presentation describing mussel life cycles and various kinds of mussel culture, including wild harvesting, longline culture, and bottom culture, and he described the proposed project. Mrs. de Koning testified about details of the project. Mr. Lewis presented his site report, including a video presentation showing the sea bottom on the site. The public witnesses described their use of the area and their concerns about the project. Each witness was subject to questioning by the Department, the applicant, and members of the public. The hearing was recorded by DMR. The Hearings Officer was Diantha Robinson.

The evidentiary record before the Department regarding this lease application includes five exhibits introduced at the hearing (see exhibit list below), the record of testimony at the hearing itself, and two written comments submitted by mail before the record closed, which are included in the record and accorded appropriate weight, given their status as unsworn statements not subject to questioning. The evidence from all of these sources is summarized below.¹

List of Exhibits

1. Case file, #2007-09.
2. Application signed and dated June 14, 2007.
3. DMR site report dated April 3, 2008.
4. Compact disc (CD) and paper copy of PowerPoint presentation.
5. Paper copy of narrative of PowerPoint presentation by Theo de Koning.

Change of Applicant to Acadia Aqua Farms, LLC

After the public hearing and the close of the record, changes in the corporate structure of Aquaculture Harvesters occurred which resulted in the application being assumed by a newly-formed corporation, Acadia Aqua Farms, LLC; the sole member of this corporation is Mattheus J. (Theo) de Koning. In all respects other than the corporate identity, this application remains the same. Theo and Fiona de Koning will operate the lease as described in the application and at the hearing.

2. DESCRIPTION OF THE PROJECT

A. Proposed Operations

The applicant proposes to grow blue mussels (*Mytilus edulis*) on the lease site. According to the application, activities at the site will begin with seeding the bottom over approximately 4 weeks, normally in the fall when the danger of crab predation is less. Seed mussels will be obtained from a DMR-designated conservation area along the coast and planted on the bottom in maximum stocking densities of 500 to 1,000 mussels per square meter. The mussels will be left undisturbed to grow to market size, typically in one to two years. They will be monitored from time to time for growth and predators, particularly starfish and eider ducks; starfish will be “mopped up” with a special mop or picked out by divers; no method for deterring eiders has been found, other than to watch for them and chase them away (Theo de Koning, direct; Exhibit 2, p. 4).

Harvesting will be conducted by dragging, normally in late fall, winter, or early spring to avoid the busiest of the lobstering season. The applicant will use the F/V *Stewardship*, a 74-ft.

¹ NOTE: The reference (Smith/Jones) means testimony of Smith, being questioned by Jones. (Smith, direct) means the direct testimony of Smith, not given in response to questions.

fishing vessel. Mussels will be lifted, washed, and graded on the boat at the site, then bagged and taken to shore for processing (Theo de Koning, direct). Undersized mussels will be re-seeded back onto the site. Harvesting will occur over a 3-month period for two to three hours each day, gathering about 900 bushels per day until the mussel bed is emptied. The applicants estimate the harvest to be approximately 5,000 to 8,000 bushels per year (Exhibit 2, pp. 4, 16-18).

Mr. de Koning testified that he is confident that the site will support mussels, because those he has seeded there already have thrived (T. de Koning/Crothers). He said that the site would be re-seeded promptly after harvesting, preferably in the winter (T. de Koning/Robinson).

B. Site Characteristics

The proposed lease site is located at the northern end of Frenchman Bay, on the north side of Bean Island, which lies midway between and slightly north of Hancock Point in Hancock to the southwest and Bean Point, Sorrento, to the southeast. According to the site report, the southwest corner of the site lies at the edge of the intertidal zone north of Bean Island; the southeast corner lies 53 ft. north and seaward of the intertidal zone (Exhibit 3, p. 5). Water depth at the site is estimated to be 9.6 to 13.6 ft. at mean low water and 16 to 20 ft. at mean high water (Exhibit 3, p. 2).

Bean Island is a privately-owned, uninhabited island under a conservation easement to the National Park Service and overseen by Acadia National Park (Exhibit 1, e-mail to Mary Costigan from Collin Therrien, Sept. 25, 2006). According to the site report, it is used for recreation "as a beach and boating destination". The bottom of the proposed lease site is relatively flat and covered with several feet of extremely fine, soft sediments (Lewis, direct).

Currents at the site run north/south, depending on the stage of the tide. The depth of the sediments on the sea floor indicates that current velocity is low in the area and that currents deposit sediments there (Exhibit 3, p. 3). The site is not expected to ice over in winter, but pan ice could accumulate along the northern shore of Bean Island and might dislodge some of the mussels planted there, according to the site report (Exhibit 3, p. 6). Lawrence de Milner, a resident of Hancock, stated that in two of the last four or five years he had observed ice forming as far south as Crabtree Ledge, southwest of Bean Island (de Milner, direct).

According to DMR's Water Quality and PSP Monitoring programs, the water around the site is classified as open/approved for the harvest of shellfish, and toxic algae blooms in 2006 did not penetrate into this area of Frenchman Bay, where mussels have remained "below quarantine since 2005" (Exhibit 3, p. 6).

3. STATUTORY CRITERIA & FINDINGS OF FACT

Approval of standard aquaculture leases is governed by 12 M.R.S.A. §6072. This statute provides that a lease may be granted by the Commissioner of DMR if s/he determines 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 and 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; that the lease will not result in an unreasonable impact from noise or lights at the boundaries of the lease site; and that the lease will be in compliance with visual impact criteria adopted by the Commissioner relating to color, height, shape and mass.

A. Riparian Access

The site report notes that because the proposed lease site lies directly north of Bean Island in shallow water, any vessel transiting the site would probably be planning either to anchor within the site or to gain access to the beaches on the north side of the island; since the lease is for bottom culture only, neither of these activities would be impeded (Exhibit 3, p. 5). Access to the island appears to be primarily via the north side; there is no dock on the island.

According to the application, "There are no moorings in the proposed tract, but should an adjacent riparian landowner wish to set a mooring within the proposed tract, the applicant would work with that person to find a mutually acceptable site" (Exhibit 1, p. 7). The site report notes that because the island is used frequently for recreation, a mooring or moorings might well be proposed to be placed within the lease boundaries (Exhibit 3, p. 5). At the hearing, Mr. Crothers, husband of the owner of Bean Island, asked Mr. de Koning whether he would object to a mooring or moorings being set on the lease site; Mr. Lewis asked a similar question. Mr. de Koning stated that moorings would be acceptable, and he volunteered to set them himself for Mr. Crothers, so that he will know their location on the lease site and can avoid them when dragging (T. de Koning/Crothers, Lewis).

The Sorrento Harbormaster, Mr. Louis Sutherland, returned a Harbormaster Questionnaire to DMR dated April 27, 2008, noting that the aquaculture operation will not interfere with navigation, moorings, storm anchorages, or riparian access (Exhibit 1, Harbormaster Questionnaire).

According to the application, the applicant does not need to use the intertidal zone around Bean Island (Exhibit 2, p. 18). Mr. de Koning confirmed this in his testimony (T. de Koning/Robinson).

Thus, it is clear from the evidence that the lease site will not interfere with access to Bean Island by its riparian owners or by other users. Moorings will be permitted within the lease site, to be set by the leaseholder in consultation with the mooring owner.

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

According to the site report, the lease operations will not impede boats coming in to anchor off the north shore of the island, and vessels traveling north and south around the island will not be impeded (Exhibit 3, p. 5). The Sorrento Harbormaster noted that the application would not interfere with navigation (Exhibit 1, Harbormaster Questionnaire).

At the hearing, however, several members of the public testified that they and others frequently use the waters north of Bean Island for recreational boating of various kinds and that such use is concentrated in July and August. Francis Ballard, a summer resident, stated that the area experiences boat traffic as heavy as any north of Bar Harbor and that he was concerned that any harvesting activities during July and August could conflict with the recreational uses of the waters to the north of Bean Island (Ballard, direct). Harold Page, a Sorrento selectman, testified that there is much recreational boating, including children's sailing classes, in the proposed lease area, and that the Town shares Mr. Ballard's concerns (Page, direct). Dick Davis, a Sorrento resident, also noted the high level of summer boat traffic.

Harold Clark, a summer resident, explained that the area of the proposed lease is protected from the open sea and hence quite desirable for small boaters. He said that when he is able to come to Sorrento in July and August, he uses the waters there a great deal and is on his boat as much as possible, and he did not want his limited sailing opportunities foreclosed by harvesting activities on the lease. Jack Crothers noted that the level of boating activity was certainly below that of Bar Harbor and Northeast Harbor and that he, as the husband of the island's owner, had no problem with the de Konings' intentions about operating the lease (Crothers, direct).

Mr. Clark asked whether any harvesting activity could be restricted to the hours before 11 am or after 5 pm, when sailing is less likely to occur in the area. Mr. de Milner said, however, that kayakers and other small boats often use the waters in the calmer early morning and evening hours. This also raised the issue that campers on Bean Island might be disturbed by harvesting activities in the early morning. Mrs. de Koning pointed out that lobster boats are typically out on the water very early in the day, and that the noise from the applicants' boat is comparable to that of a lobster boat (F. de Koning, direct). Mr. Lewis asked whether harvesting might be limited to times of bad weather when recreational boating would not occur.

Theo de Koning explained that the only potentially disruptive site activities that would take place in July and August would be dragging to harvest mussels, and that the applicants would

harvest in July and August only as a last resort, to preserve their market share in the event that access to their other sites was foreclosed, most likely by red tide. Should harvesting activities occur, he said, the vessels would operate on the site for five to six hours a day, twice a week, and this could be done early or late in the day (T. de Koning, direct). Both he and Fiona de Koning stated repeatedly that they have no intention of harvesting in summer, if they can possibly avoid it, and that they fully understand the nature of the public use of the waters north of Bean Island, as they have used it recreationally themselves (F. de Koning, direct).

Mr. Ballard agreed with Theo de Koning that routine monitoring and predator control activities would not interfere with navigation at the site, and that seeding would not be conducted in July and August, so that the focus of concern is harvesting (Ballard, direct). He testified that he and Mr. Davis had begun talks with the de Konings on the day of the hearing, and that he expected to reach an agreement to limit their use of the site for harvesting activities during July and August. Fiona de Koning confirmed this and stated her preference for creating such an agreement separately from the lease itself. She testified that in her experience, such an arrangement is more flexible than lease restrictions, and that it is much easier to work cooperatively and directly with others living in the area to resolve problems as they arise, rather than to rely on fixed conditions in a DMR lease decision (F. de Koning, direct).

Mr. Ballard stated that he was amenable to a private agreement, in deference to the de Konings' preference (Ballard/Robinson), although Mr. Page testified that he would prefer to have DMR place any conditions in the lease itself (Page/direct). Mr. Ballard testified that such an agreement would be negotiated between the de Konings and residents of Sorrento, although he stated that at the time of the hearing, the town government was not involved in the negotiations. Mr. Ballard stated that his group and the de Konings had already reached "a basic understanding" (Ballard/Robinson). Mr. Clark suggested that citizens of Hancock, to the west of the site, also be included in the discussions, as they make use of the same waters as the Sorrento citizens (Clark, direct).

A letter from Jane Disney, Ph.D., submitted to DMR in advance of the hearing, reflected experience with a private agreement between the de Konings and concerned citizens with respect to another bottom mussel lease off Hadley Point on Mt. Desert Island (lease EAST HP). Dr. Disney stated that she could attest to "the willingness of Theo and Fiona de Koning to work collaboratively with the DMR and neighbors". She wrote that there had been no decline in the quality or clarity of the water at Hadley Point since that lease was granted (water quality was an issue addressed by the agreement). She said that the de Konings responded quickly to complaints about noise from their operations, and wrote "They have gained a reputation in Bar Harbor of being a caring, environmentally sensitive, and community-minded family" (Exhibit 1, letter of Jane Disney, received April 29, 2008).

Both Mrs. de Koning and Mr. Ballard stated that an agreement was unlikely to be reached before July or even August, and Mrs. de Koning testified that she and her husband did not want to

postpone the lease that long, as they were anticipating harvesting activities at the site in the fall (de Koning/Robinson). The Hearings Officer took under advisement the question whether to place restrictions in the lease itself or allow the parties to negotiate a private agreement.

The evidence is clear that for ten months of the year the proposed lease operations will not impede navigation in the area, even during harvesting, because vessel traffic is quite limited. For two months of the year, interference is possible, but in a very limited context: (1) if the applicants drag the site for mussels, which they intend not to do, short of a business emergency; and (2) if people are on or near the site in boats at the time of dragging and the dragging interferes with navigation. Because the circumstances in which interference might occur are quite limited and may, in fact, never arise, the evidence does not support a finding of unreasonable interference with navigation and other uses.

None of the public witnesses opposed the lease as such; rather, they advocated restricting harvesting activities to avoid interference with other vessels using the area in July and August. Nor did the applicants oppose some degree of restriction; rather, they advocated creating and enforcing those restrictions within the framework of a private agreement between themselves and other users of the area, rather than within the DMR decision and lease. Mr. Page, a Sorrento selectman, testified that he preferred to have DMR place conditions on the lease, but the other public witnesses and the applicants were content to negotiate a private agreement to allow for working out any conflicts between them. The evidence also shows that such an agreement with these applicants has worked well in connection with another lease site.

Given the substantial agreement among most of the public witnesses and the applicants that they wish to negotiate a private agreement, and given the apparent past success of such an agreement with these leaseholders at another site, it is reasonable to allow such an agreement to govern the lease activities at this site in July and August. A private agreement is not part of the lease and is not enforceable by the Department.

The lease site must be marked in accordance with the United State's Coast Guard's Private Aids to Navigation (PATON) standards and requirements.

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

C. Fishing & Other Uses

DMR biologists observed no fishing activity at the time of the site visit and found fewer than ten lobster burrows during their dive video survey. Although some lobstering may occur on the lease site in the summer, the site report concluded that the shallow water and soft substrate make any lobstering effort "likely very light". The report also notes that "No other commercially

exploitable volumes of shellfish were observed on the proposed lease site” (Exhibit 3, p. 4). The Sorrento Harbormaster stated that lobster and crab fishing take place within the area of the proposed lease (Exhibit 1, Harbormaster Questionnaire). No testimony was given at the public hearing relative to other kinds of fishing activity on the site.

The applicants have requested exclusive use of the lease site for mussel cultivation. While the application notes that “uses such as recreational fishing, lobstering, crabbing, etc. should have no impact on Aquaculture Harvesters LLC activities and should not be limited” (Exhibit 2, p. 6), they do request that dragging by anyone other than the applicants be prohibited (T. de Koning, direct). Mr. de Koning testified in response to questions that the buoys marking the lease site boundaries are closer to shore than his boats will actually go, in order to keep wild harvesters out of the lease site. He said he has no objections to people hand-harvesting mussels near the beach on Bean Island (T. de Koning/Crothers).

James West, a Sorrento resident, fisherman, and aquaculture leaseholder (FREN PI2), testified that while he does not oppose the lease itself, he has concerns with seed-gathering and dragging techniques used by the applicants. Although he described these techniques as legal, he is concerned that they may deplete wild mussel populations on which he depends as a harvester (West, direct). Fiona de Koning testified that mussel aquaculturists in Maine are currently working with DMR on issues involving seed-gathering and dragging. She said that recent studies in the Netherlands, where Theo de Koning acquired his mussel aquaculture experience, showed minimal impacts from dragging equipment such as the de Konings use (F. de Koning, direct). Theo de Koning stated that the Netherlands prohibited wild mussel harvesting in 1825 as unsustainable, and that bottom culture of the type proposed in this application is a sustainable way to manage the bottom-grown mussel fishery (T. de Koning, direct).

As noted above (in 2 (B), Site Characteristics, and 3 (A), Riparian Access), Bean Island is used for picnicking, swimming, and camping and is reached only by boat. The application refers to this, noting that the applicants themselves have spent time there “with sailing boats and kayaks”. The site report notes that:

The proposed activities are unlikely to interfere with access to this property. Given the incredibly soft-bottom conditions within the area, however, dragging activities occurring at times when the beach is occupied are likely to create plumes of mud that negatively impact swimming. The applicants have indicated they also use this beach and have agreed to limit their dragging activities when the beach is in use (Exhibit 3, p. 5).

The application also states “We would try to keep the activity [on the lease site] to a minimum during the busiest time” (Exhibit 2, p. 18). Mr. Crothers testified that the ocean current at the site would disperse any sediment plume.

Five aquaculture sites exist in the vicinity of the proposed site, three for suspended culture and one for bottom culture of mussels, and one for pen culture of codfish. The nearest site is three-quarters of a mile to the south of the proposed lease. According to the site report, “The proposed

activities are unlikely to negatively impact existing aquaculture operations in the area” (Exhibit 3, p. 7).

There does not appear to be a significant level of fishing on the site, and existing lobster or crab fishing and recreational fishing are compatible with the lease activities in any event and will not be limited. The applicants have requested the exclusive right to drag on the site and that will be granted, to effectuate the purpose of the lease. Since no commercially useable amounts of shellfish were observed on the site according to the site report, it does not appear that this prohibition will displace wild harvesters. The concerns about seed acquisition and dragging technology and techniques are beyond the scope of this proceeding and will not be addressed here. The applicants will minimize activity on the site when people are swimming from the beach at Bean Island. Other aquaculture leases in the area are sufficiently far away to be unlikely to be affected by a bottom mussel lease in this location.

The lease must be marked in accordance with DMR Rule 2.80.²

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

The site visit, during which DMR biologists conducted SCUBA dives and videotaped the bottom of the proposed site, took place on March 31, 2008, earlier in the season than such dives are normally conducted, according to Mr. Lewis. Species found in abundance included: brown filamentous algae, bent mysid shrimp, amphipods, mussels, and polychaete worm egg masses.

²**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 State’s Coast Guard’s Aids to Private Navigation standards and requirements.

Commonly-observed species included common sea stars, burrowing anemones, brushy red-weed, sea cucumbers, and kelp. Occasional wry-mouth eel burrows, periwinkles, and sea lettuce were also observed, according to the site report (Exhibit 3, p. 3). Mr. de Koning testified that horseshoe crabs were not a problem on the site (T. de Koning/Crothers).

The bottom of the site is relatively flat and covered with several feet of extremely fine sediments which, at the time of the site visit, were in turn covered with brown algae, which were determined to be long-chain diatoms (Lewis, direct). Mr. Lewis testified that he consulted with Dr. Robert Anderson of the Bigelow Laboratory for Ocean Sciences, "a world leader in the study of algae and phytoplankton", who confirmed the identification and indicated that the algae were a mixture of one hundred common diatoms, ubiquitous in Maine, which happened to be undergoing their spring bloom at the time of the site visit. Mr. Lewis said these diatoms are similar to "pond scum" algae, appearing in a low-energy environment where currents are slow (Lewis, direct). The algae/diatoms contained an "abundance of mysid shrimp and amphipods", according to the site report, serving as a shelter for these creatures (Exhibit 3, p. 3; Lewis, direct).

Another unusual finding on the site, Mr. Lewis explained, was the presence of numerous small, green, grape-like balls, which were identified as egg cases of a common polychaete worm, *Phyllodoce maculata*, which is found along the Maine coast. According to Mr. Lewis, the egg cases, like the algae, are not unusual in themselves, nor in this environment; it was simply unusual for DMR divers to be on the site so early in the season (Lewis, direct).

The bottom of the site, Mr. Lewis testified, was of such soft mud that he expressed some concern about whether mussels would be able to keep from sinking into the mud and suffocating. He observed that where they had been seeded, the mussels were "floating" on the soft mud with interwoven byssal threads. He said the site would likely be viable as a mussel bed if it were seeded with a sufficient density of mussels to build up a firm substrate. Starfish noted at the site will be predators on the mussels, Mr. Lewis said; he observed no lobsters and no lobster burrows (Lewis, direct).

As to the effects of dragging to harvest mussels on the site, Mr. Lewis noted that dragging will remove the diatoms and disturb the mud. The mussels will gradually harden up the bottom, and the algae mats will not be present. The shelter that they provided to various species, however, will in turn be provided by the mussels themselves, so that this function will continue, albeit in a different form. Mr. Lewis stressed that there would be no net loss of habitat and no loss of ecologically significant flora or fauna as a result of granting this proposed lease.

A bald eagle's nest is located on the eastern point of Bean I., within one-quarter mile of the proposed lease, according to the Maine Department of Inland Fisheries and Wildlife (site BE-035D). This means that the lease site is within the protected area of an Essential Wildlife Habitat. In response to DMR's Request for a Project Evaluation of the proposed lease, Mr. Kenneth Elowe, Director of the MDIF&W Bureau of Resource Management, stated in a letter to the Hearings Officer dated November 1, 2007, that "the proposed activities will not significantly alter this

essential habitat or violate the protection guidelines adopted by this department". He further stated that this letter "constitutes our approval for you to issue the lease for the aquaculture operations specifically described in the Request." Mr. Elowe noted that should "substantial changes in cultural techniques or increased levels of activity due to changes in operations" occur, his department should be consulted to "determine status of nesting activities at that time" (Exhibit 2, p. 15). Mr. de Koning testified that such a condition in the lease is acceptable to him (Theo de Koning, direct).

It appears from the evidence that cultivating a mussel bed on the bottom of this site, while it will displace some commonly-occurring species, will replace one type of habitat with another, with no net loss overall. No "ecologically significant" species will be lost, and the bald eagle nesting site will be protected by the requirement for the applicants to consult MDIF&W if their operations change.

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, provided the leaseholder consults MDIF&W if the operations change as described above.

E. Public Use & Enjoyment

Since, according to the report of the Sorrento Harbormaster, there are no government-owned beaches, parks, or docking facilities located within 1,000 ft. of the proposed lease site (Exhibit 1, Harbormaster Questionnaire), the proposed lease activities will not interfere with them.

As noted above, Bean Island is a privately-owned, uninhabited island under a conservation easement to the National Park Service and overseen by Acadia National Park (Exhibit 1, e-mail to Mary Costigan from Collin Therrien, Sept. 25, 2006). Because the island itself is not owned in fee by the municipal, state, or federal government, it does not constitute "certain conserved lands" within the meaning of 12 MRSA §6072 (7-A) (A) (7), and we cannot consider whether the lease activities would interfere unreasonably with public use or enjoyment of the island itself. The discussion of "navigation" under Part 3 (B) and of "other uses" under Part 3 (C), however, covers most of the public activities that appear to take place on or in the waters adjacent to Bean Island.

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 or certain conserved lands owned by municipal, state, or federal governments.

F. Source of Organisms

The application indicates that the sources of seed stock for this proposed lease site are wild beds of blue sea mussels (*Mytilus edulis*) in Hancock and Washington Counties.

Although Mr. West objected to the collection of seed from wild mussel stocks in general, such collection is legal if done within the requirements of DMR laws and rules. The purpose of the requirement that a lease applicant demonstrate that there is an available source of organisms is to ensure that the aquaculture project is adequately planned. Despite disagreements among witnesses at the hearing over where, whether, and how best to collect mussel seed, it is clear that the applicants know where and how to obtain seed legally and are fully prepared to do so. The disagreements are being addressed through other channels within this department and do not affect the criteria for granting an aquaculture lease.

Therefore, I find that the applicants have demonstrated that there is an available source of blue sea mussels (*Mytilus edulis*) to be cultured for the lease site.

G. Light

The application indicates that no lights will be used at the proposed lease site and none will be kept on the site, as “operations will occur during the daylight hours except on rare occasions during the winter months” (Exhibit 2, p. 5).

DMR Rule 2.37 (1) (A) (8) requires applicants to demonstrate that all reasonable measures will be taken to mitigate light impacts from the lease activities. If vessel lighting is needed for emergency operations, the rule provides:

When harvest schedules, feed schedules, or other similar circumstances result in the need to work beyond daylight hours, spotlights or floodlights may be used to ensure safe working conditions and safe vessel operation. Such lighting shall be directed only at the work area to be illuminated and must be the minimum needed for safe operations....No provision in these rules is intended to restrict vessel lighting levels below what is necessary for safety or as is otherwise required by state or federal law.

The evidence shows that lights will not be used at the site, except possibly on rare occasions in winter, when lights may be required to complete harvesting when days are short. On those occasions, the applicants must comply with the provisions of the rule cited above. That being the case, any light generated by operations on the site is unlikely to have a significant effect at the boundaries of the lease.

Therefore, I find that the aquaculture activities proposed for these sites will not result in an unreasonable impact from light at the boundaries of the lease site.

H. Noise

Noise at the site is likely to occur sporadically, whenever vessels are on site for seeding or harvesting activities, and to a lesser extent during monitoring. Drag-harvesting operations will be the major activity at the site, occurring over varying three-month periods in fall, winter, and spring. Harvesting at the site will last for two to three hours each day during the harvest period. Motorized equipment includes the vessel engines and a hydraulic winch; the engine “is water-cooled to reduce exhaust noise” (Exhibit 2, p. 5).

The site report notes that “The vessel (the *F/V Stewardship*) has wet exhaust and is muffled which minimizes the amount of noise produced. Generally this vessel produces noise similar to many lobster boats which are ubiquitous in the area” (Exhibit 3, p. 5). Fiona de Koning also testified that the vessels are fitted with water-cooled silencers and are not noisier than lobster boats (F. de Koning, direct). Further, as the evidence with respect to navigation shows (see section 3 (B) above), the applicants plan not to conduct harvesting activities at the site in the summer months, particularly July and August, unless necessitated by emergency conditions.

DMR Rule 2.37 (1) (A) (9) requires applicants to “demonstrate that all reasonable measures will be taken to mitigate noise impacts from the lease activities.” It provides that “All motorized equipment used during routine operation at an aquaculture facility must be designed or mitigated to reduce the sound level produced to the maximum extent practical.”

It appears from the evidence that the vessels have been muffled to reduce exhaust noise. No evidence was presented either to dispute this fact or to show that further noise reduction measures were necessary or practical. The applicants appear to have reduced the sound level from their equipment to the maximum practical extent. Any remaining noise generated by operations on the site is unlikely to have a significant effect at the boundaries of the lease.

Therefore, I find that the aquaculture activities proposed for this site will not result in an unreasonable impact from noise at the boundaries of the lease.

I. Visual Impact

As the application, site report, and testimony make clear, this application is for bottom culture only. No structures will be placed in the water, and no gear will be deployed, other than buoys required by DMR to mark the boundaries of the site and any navigational markers required by the U.S. Coast Guard. The lease operations will create no visual impact within the meaning of DMR Rule 2.37 (1) (A) (10).

Therefore, I find that the proposed lease will comply with the visual impact criteria contained in DMR Regulation 3.37 (1) (A) (10).

4. CONCLUSIONS OF LAW

Based on the above findings, I conclude that:

1. Riparian Access. The aquaculture activities proposed for this site will not unreasonably interfere with the ingress and egress of any riparian owner. Moorings are permitted within the lease site, to be set by the leaseholder in consultation with the mooring owner.

2. Navigation. The aquaculture activities proposed for this site will not unreasonably interfere with navigation. The lease site shall be marked in accordance with U. S. Coast Guard requirements.

3. Fishing and Other Uses. 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. The lease boundaries must be marked in accordance with the requirements of DMR Rule 2.80. Dragging on the site is prohibited by anyone other than the leaseholders. Recreational fishing and commercial fishing other than dragging are permitted on the site.

4. Flora and Fauna. 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. Should substantial changes in cultural techniques or increased levels of activity due to changes in operations occur on the lease site, the lessee must notify and consult in advance with the Maine Department of Inland Fisheries & Wildlife to determine the status of eagle nesting activities on site BE-035D at the eastern point of Bean Island.

5. Public Use & Enjoyment. 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. Source of Stock. The applicant has demonstrated that there is an available source of blue sea mussels (*Mytilus edulis*) to be cultured for the lease site.

7. Light. The aquaculture activities proposed for this site will not result in an unreasonable impact from light at the boundaries of the lease site.

8. Noise. The aquaculture activities proposed for this site will not result in an unreasonable impact from noise at the boundaries of the lease site.

9. Visual Impact. The aquaculture activities proposed for this site will comply with the visual impact criteria contained in DMR Regulation 2.37(1)(A)(10).

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 lease of 32.33 acres to Acadia Aqua Farms, LLC, for ten years for the purpose of cultivating blue sea mussels (*Mytilus edulis*), using bottom culture techniques. The applicant shall pay the State of Maine rent in the amount of \$100.00 per acre per year. The applicant shall post a bond or establish an escrow account pursuant to DMR Rule 2.40 (2) (A) in the amount of \$500.00, conditioned upon its 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 (7-B).³ 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. Moorings are permitted within the lease site, to be set by the leaseholder in consultation with the mooring owner.

2. The lease site must be marked in accordance with both U.S. Coast Guard requirements and DMR Rule 2.80.

³ 12 MRSA §6072 (7-B) states: "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."

3. Dragging on the site is prohibited by anyone other than the leaseholder. Boating, recreational fishing, and commercial fishing other than dragging are permitted on the site.

4. Should substantial changes in cultural techniques or increased levels of activity due to changes in operations occur on the lease site, the lessee must notify and consult in advance with the Maine Department of Inland Fisheries & Wildlife to determine the status of eagle nesting activities on site BE-035D at the eastern point of Bean Island.

7. REVOCATION OF LEASE

The Commissioner may commence revocation procedures if he determines that substantial aquaculture has not been conducted within the preceding year or that the lease activities are substantially injurious to marine organisms. If any of the conditions or requirements imposed in this decision, in the lease, or in the law is not being observed, the Commissioner may revoke the aquaculture lease.

Dated: 13 January 2009



George D. Lapointe (Commissioner)
Department of Marine Resources