

STATE OF MAINE
DEPARTMENT OF MARINE RESOURCES

Phoenix Salmon US, Inc.
Lease MACH CI2

Standard Aquaculture Lease Application
Cross Island, Machias Bay, Cutler, Maine
Net pen culture of finfish;
Suspended and bottom culture of shellfish

Docket #2009-14

Date: August 26, 2010

FINDINGS OF FACT, CONCLUSIONS OF LAW, AND DECISION

On September 1, 2009, the Department of Marine Resources (“DMR”) received an application from Phoenix Salmon US, Inc., a Maine corporation, for a standard aquaculture lease on 44.7 acres located in the coastal waters of the State of Maine, off the northwest side of Cross Island in Machias Bay, in the Town of Cutler in Washington County, for net pen culture of Atlantic salmon (*Salmo salar*), halibut (*Hippoglossus hippoglossus*), arctic char (*Salvelinus alpinus*), and Atlantic cod (*Gadus morhua*) and the suspended and bottom culture of blue mussels (*Mytilus edulis*).

The application was accepted as complete on October 29, 2009. There were no intervenors. A public hearing on this application was held on May 10, 2010, in Cutler, 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 Cutler and the Cutler Harbormaster, members of the Legislature, representatives of the press, riparian landowners, and other private individuals. They were also posted on DMR’s web site. Public notice of the hearing was advertised in the *Downeast Coastal Press* on April 6 and 20, 2010. By an oversight, no notice was advertised in a “trade, industry, professional or interest group publication which the Department deems effective in reaching persons who would be entitled to intervene”, as required by DMR rule Chapter 2.15 (3). To remedy this oversight, DMR extended the comment period to June 17 and published notice in the June, 2010 issue of *Commercial Fisheries News*.¹ A statement to this effect was read into the record at the hearing by the Hearing Officer. The record was held open until June 17, 2010, at 5 pm. No comments or requests for hearing were received during the extended comment period.

¹ The notice stated that “during this period, members of the public may submit comments on the application, request an additional public hearing, and apply for intervenor status.”

Sworn testimony was given at the hearing by the applicant, represented by David Miller and Jennifer Robinson, and by DMR's Aquaculture Environmental Coordinator, Jon Lewis. Mr. Miller described the proposed project. Mr. Lewis presented his site report, including a video presentation showing the sea bottom on the site. Each witness was available for questioning by the Department, the applicant, and members of the public. Two members of the public attended; neither testified, but State Representative David Burns questioned Mr. Miller and Mr. Lewis. The hearing was recorded by DMR. The applicant was represented by attorney Andrew Hamilton. The Hearing Officer was Diantha Robinson.

The evidentiary record before the Department regarding this lease application includes seven 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.²

LIST OF EXHIBITS

1. Case file, Docket # 2009-14 (cited below as "F").
2. Application signed by Jennifer Robinson and dated August 27, 2009 (cited below as "A" with page number).
3. DMR site report dated March 31, 2010 (cited below as "SR" with page number).
4. Document, printed outline of Phoenix Salmon's presentation, titled "Cross Island Extension – Lease Application Hearing" and labeled "Cooke Aquaculture" (cited below as "PS" with page number).
5. Letter from MER Assessment Corporation to Andy Hamilton, dated May 6, 2010, two pages.
6. Letter and two attachments from True North Salmon US to Maine Dept. of Inland Fisheries and Wildlife dated June 18, 2009 (three pages); emails between Jennifer Robinson and Steve Timpano, MDIF&W dated June 22 and July 16, 2009 (two pages; five pages total).
7. Document titled "Cultivation Plan Summary for Cross Island for Non-Traditional Species", one page.

2. DESCRIPTION OF THE PROJECT

A. Site History

The proposed lease site lies on the northwest side of Cross Island in Machias Bay, between the island and Northwest Head. Atlantic Salmon of Maine, LLC, a subsidiary of Phoenix Salmon, currently holds a 25-acre net-pen lease, MACH CI, at this location for the culture of Atlantic salmon which was originally granted in 1987. The proposed lease would

² [NOTE: The reference (Smith/Jones) means testimony of Smith, being questioned by Jones.]

expand the site by an additional 19.7 acres, for a total lease of 44.7 acres (see the site plan in Attachment 1b to Application).

While the existing lease is held by Atlantic Salmon of Maine, LLC, the proposed lease would be held by the applicant, Phoenix Salmon US Inc. Phoenix, Atlantic, and five other companies³ are all subsidiaries of True North Salmon US Inc., the U.S. affiliate of Cooke Aquaculture of Canada (PS6). Atlantic Salmon of Maine will terminate its existing lease upon the execution of a new lease to Phoenix Salmon for the expanded site.

The application proposes to expand the site by moving the existing footprint approximately 250 ft. farther seaward (northwest) and by extending the boundaries on the northeast (by 242 ft.), northwest (by 486 ft.), and southwest (by 237 ft.) sides (A - Attachment 1b; SR5). In addition to providing additional space to increase the number of fish pens from 24 to 30, the movement of the site farther seaward moves more of the lease site out of the area prohibited for use for net pens by the U. S. Army Corps of Engineers because of its proximity to the shore of Cross Island, a portion of which is a national wildlife refuge (Lewis, testimony; see also section 3D, below).

Mr. Miller testified that Cooke needs the additional growing area the expanded site would provide in order to provide a continuing supply of salmon sufficient to support the operation of its fish processing plant in Machiasport. He said that Cooke is “behind their production goals in two of the three years of their three-year production cycle” (Miller/Burns; PS20).

B. Proposed Operations⁴

The applicant plans to continue to raise Atlantic salmon (*Salmo salar*) at the site using net pen culture and to add halibut (*Hippoglossus hippoglossus*), arctic char (*Salvelinus alpinus*), and Atlantic cod (*Gadus morhua*) as alternate species for net pen culture. Phoenix also proposes to culture blue mussels (*Mytilus edulis*), using suspended and bottom culture. Mr. Miller testified that the pens will be 100-meter circular floating pens, set in a grid of 5 pens by 6 pens and served by a “centralized feeding system housed in a floating barge” (PS12).

Phoenix plans to raise a maximum of approximately 750,000 harvest-sized fish (6 kg.), with a target maximum density of 25 kg/m³ and single year class stocking at this site, i.e., all fish on the site will be the same age. Fish will be raised from smolts to market size over 18 to 36 months (A sec. 3.a.1). Underwater cameras will be used to monitor feeding (PS19). Underwater lights will be used to prevent maturation of fish (PS15).

According to the application, Phoenix and its affiliates “have been raising fish in Machias Bay for more than 19 years”. The 100 meter cages are “have been used throughout the industry”,

³ The other subsidiaries are: Cobscook Bay Salmon, Island Aquaculture Company, Treat’s Island Fisheries, Maine Coast Nordic, and L.R. Enterprises, Inc.

⁴ This description of the proposed operations summarizes information contained in the application and presented at the hearing. DMR relies on this information as indicative of how the applicant intends to operate the project on the lease site.

and “All gear and equipment is at or above industry standard and will undergo routine maintenance” (A sec. 3.a.4).

According to the application and Mr. Miller’s testimony, the work crew of 6 to 8 employees will travel daily to the site from the pier in Machiasport which is used by Phoenix and its related companies as a base of operations for their Machias Bay leases. The feeding crew and the maintenance and feed delivery vessel will travel to the site daily, divers will travel to the site twice a week, and the harvest vessel will make daily trips during harvest periods (PS 18-19). Nets will be changed two to three times during the production cycle. “Approximately 60 harvest days per production cycle are expected at this site” (PS19).

Vessels serving the site include a 40-ft. lobster-style dive boat, a 50-ft. barge-style feeding boat, and a 60-ft. barge-style feed delivery boat (A sec. 3.a.1). Market-size fish will be harvested by boat at the site and taken to shore for processing. Divers will maintain the lease area, collecting mortalities, repairing gear, and monitoring the site. Phoenix “has Maine Department of Environmental Protection approval to stock the site at a level that anticipates the expansion”, and according to Mr. Miller’s testimony, “An application for an individual MPDES permit for the site expansion will be filed” (PS17). Phoenix has been granted a permit for the expanded site of 30 cages plus support equipment from the U. S. Army Corps of Engineers (PS17).

Further details of the proposed operation are contained in the application.

Culture of alternate species. Mr. Miller presented Exhibit 7, the culture plan for non-traditional species (halibut, arctic char, Atlantic cod, and blue mussels), which was missing from the application (Miller, testimony). Culture techniques specified for the three additional finfish species are similar to those used for salmon (although some cod may be harvested for the live market), and therefore these species are acceptable for culture on the expanded site.

Mr. Miller testified that Phoenix would grow mussels at the site using suspended culture or bottom planting if the site is suitable (Miller/Robinson). Mr. Lewis testified to his concern that bottom-planted mussels on the soft sediments below the fish pens could create a matrix that would trap uneaten fish feed and fecal material, causing a buildup that could result in anoxic conditions that would be difficult to disperse, given the density and structure of the mussel bed (Lewis, testimony).

Such a development could place the applicant in violation of its MPDES permit from the Maine Dept. of Environmental Protection. The mussels themselves could also become contaminated by the potential accumulation of therapeutants contained in the fish feed.

Culture of mussels on the bottom is problematic, therefore, because of:

1. Uncertainties about how the benthic conditions on the site might affect the development of a matrix of mussels on the bottom;
2. The potential for accumulation of therapeutants from the fish feed in the mussels;

3. The possibility that retention of organic matter from fish feed and feces in a mussel matrix could produce anoxic conditions that would be difficult to remedy; and

4. The potential for anoxic conditions to jeopardize the applicant's MPDES permit.

Taken together, these issues weigh against the advisability of allowing bottom culture of blue mussels on the proposed lease site.

While culture of mussels using suspended gear does not pose the same difficulties as bottom culture, it is of concern to the Department's Public Health Division. The water quality at Cross Island is classified as "approved" for shellfish harvesting, but mussels grown in proximity to the finfish pens may be exposed to other substances that could render them inadvisable for consumption. DMR's Public Health Division recommends that Phoenix be required to notify the Public Health Division six months before it plans its first harvest of mussels from this site and to obtain a harvest permit from the Division. Subsequent harvests would need to be conducted in accordance with rules adopted by the Department. The notice requirement is intended to allow the Division time to review the public health implications of growing mussels on a finfish site and develop appropriate safeguards. With this condition, suspended mussel culture is acceptable at the proposed lease site.

Mr. Miller also testified that, if a currently ongoing experiment on a different lease site testing the use of marine worms for bioremediation of finfish aquaculture sites is successful, Phoenix may request to use worms as an alternate species on this lease site. Conditions on the bottom at this site would have to be "adequate", he said, and "other agencies" would have to approve (Miller/Lewis). The applicant has not requested permission at this time for bottom culture of marine worms at this site.

Although the Department will not authorize the bottom culture of mussels on this lease site for the reasons listed above, this does not constitute a finding that bottom culture *per se* would interfere unreasonably with other uses of the bottom at the proposed site. The applicant is free to request a species amendment in future for bottom culture of other species at this lease site. In considering any such request, the Department will review the record of this lease application, as well as the facts and circumstances existing at the time of the request.

Therefore, I find that bottom culture of mussels is not suitable at this site and that suspended culture of mussels is appropriate provided such mussels are harvested only with six months' notice to, and a harvest permit from, the Department's Public Health Division.

C. Site Characteristics

The expanded site lies in the outer portion of Northwest Harbor on Cross Island and projects into Machias Bay. Mr. Miller testified that the expansion of the site would "take advantage of deep water and increased tidal flows available further from shore" (PS20). Mr. Lewis noted that the new, expanded portion of the site to the westward has firmer bottom

sediments than he expected; he said this is indicative of a higher current velocity than that at the existing site (Lewis, testimony).

According to the site report, the bottom of the site is flat, sloping gradually to the west and deeper water. Depths at mean low water on the site are between 37.6 and 49.6 ft., with a minimum of 14.5 feet of water remaining below the bottom of the predator nets hanging from the pens at mean low water. The bottom is mostly “soft to moderately firm clay and silt”, with moderate to weak mid-depth currents averaging 6.5 cm/second and running mainly northeast-southwest, depending on the state of the tide (SR 1-2).

Water quality at the site, in particular the concentration of dissolved oxygen, has been monitored by the Department for the past ten years and has continually been found to be acceptable. Ice-over in winter is not expected, given the currents and distance from shore, although the area has frozen in recent years, according to the site report (SR7). Mr. Miller testified that both the Cross Island and Cross Island North sites have experienced superchill, “but the risk is lower than 99% of the Maine coast” (Miller/Lewis).

Mr. Lewis testified that environmental conditions at the existing Cross Island site are “far improved” from those when he first inspected it a decade ago, at which time “it was not a poster child for good environmental performance” (Lewis, testimony).

Water quality at the site is classified by DMR as Open/Approved for shellfish harvesting. Other information about the site and the proposed expansion is discussed below.

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 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, docking facilities, or conserved lands 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

According to the site report, “Except for 3 parcels on the northeastern side (Cross Island Narrows), the adjacent Cross Island is managed by the U.S. Fish and Wildlife Service as a

National Wildlife Refuge. There are no private shorefront properties or docks nearby. Access to shorefront property and moorings will not be impacted” (SR5). The report also noted that there were no moorings within the lease boundaries at the time of the site visit, and that the Department “is very familiar with the activities in the area surrounding the proposal” (SR5).

Although the Department sent a Harbormaster Questionnaire to the Town of Cutler, it was not returned, so there is no information available in this record from the local harbormaster. Mr. Miller testified that the Wildlife Refuge does not have a beach or a dock. All owners of property on Cross Island were notified of the application and the public hearing; none of them submitted comments or attended the hearing.

From this evidence, it appears that the shore and neighboring waters in the area of the proposed lease are not used to any significant degree for access to and from the island. In addition, the proposed lease site would be located even farther from the shore of Cross Island than the current site is. It does not appear that the expanded site will interfere with riparian access.

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,

There is ample navigable water to the west of the proposed expansion; two miles of open water remains between the proposed western corner and the nearest hazard at Seashore Ledge (identified by Green Can “5”). The proposed site is tucked in close to Cross Island and sheltered by the “Northwestern Head” (Figure 2). Vessels traveling to the north or south likely would naturally give this area a wide berth to avoid this peninsula that creates the western extent of Cross Island. Most vessels are expected to travel to the west (or outside) of the proposed lease site. Vessels that are targeting the area around Cross Island and Northwestern Head (i.e. fishing activities, island access) would have a minimum of 380 feet of navigable waters to the south and 100 feet to the east of the expanded farm (SR5-6).

This evidence shows that the proposed operations at this site will not interfere with navigation in the vicinity. The mandatory application for marking requirements will ensure that the site is marked as the Coast Guard sees fit to warn mariners of its location.

Therefore, I find that the aquaculture activities proposed for this site will not unreasonably interfere with navigation. The applicant is required to consult the U.S. Coast Guard, Boston, Office of Private Aids to Navigation, for marking requirements.

C. Fishing & Other Uses

The site report notes, and Mr. Lewis testified, that the part of Machias Bay where the proposed lease is located “is not rich in commercially exploitable species” other than crabs and

lobsters (Lewis, testimony). The site report states that “Lobster fishing has been observed in the areas surrounding the operational farm during past years” but notes that “The fine sediments associated with this area are generally inhospitable” to scallops, mussels, and sea urchins (SR4). Mr. Miller testified that “There is only limited lobster fishing, both seasonally and year round, at the existing lease site, and within the proposed lease extension, relative to other fishing areas within Machias Bay” (PS25).

No fishing was observed within the proposed lease boundaries at the time of the site visit, although this took place in advance of the normal fishing season (SR4). No report was submitted by the Cutler Harbormaster. No comments were received on this lease proposal, and no fishermen attended the public hearing.

The evidence in the record supports the conclusion that the proposed aquaculture lease will not interfere unreasonably with fishing activity in the area.

Exclusivity. The applicant has requested that dragging be prohibited on the site, to avoid entanglement with the moorings. According to Mr. Miller, “Phoenix works closely with lobster fishermen in Machias Bay and other locations”. He testified that although “fishermen historically are allowed to lobster fish within the lease boundaries”, they “must stay outside of the shadow of the grid” (PS26). He testified that Phoenix will mark the corners of the lease with 24-inch yellow “no-drag” mooring balls to alert draggers to stay 300 ft. outside the site in accordance with 12 MRSA §6957.

The restriction on dragging and on lobstering within the grid shadow are clearly necessary “to carry out the lease purpose”, in the words of 12 MRSA §6072 (7-B). These restrictions will be granted as conditions on the lease.

Other aquaculture leases. The other aquaculture lease sites in the vicinity of Cross Island are all finfish farms owned by subsidiaries of Cooke Aquaculture. There are five such sites in Machias Bay; four of them are a mile or more distant from the proposed expanded site (SR7). The fifth, however, MACH CIN, is also located to the north of Cross Island, near and to the northeast of the existing MACH CI site. If the existing site is expanded as this application proposes, it will lie “within 155 feet of the applicant’s other lease site at Cross Island (MACH CIN)” (SR8). The site report continues:

Taking into account mooring systems for the net-pen configurations at each site, it is estimated there will be a 500 foot minimum operational separation between the 2 pen systems. Rough calculations based on the average current velocity (6.5 cms/s) submitted in the 2007 baseline report for site MACH CI suggest water from the proposed expansion will travel 4606 feet per 6 hour tidal cycle. Given the predicted water exchange between the two lease sites, *the Department expects to see* overlap of organic loading in the form of dissolved nutrients and *an increased potential for disease transmission between the two sites*. Because of the low current velocities in the area, organic loading in the form of uneaten feed is not expected to be carried between the two farms and instead would settle underneath individual net pens (SR8) (emphasis added).

Mr. Miller testified that he does not believe that proximity of the expanded CI site to CIN will have a negative effect on fish health (Miller, testimony). Mr. Lewis asked him if the applicant will stock fish on both sites on the same cycle. Mr. Miller replied that they will try “when conditions allow”, but that various factors beyond the company’s control “may make it impossible”. A common fallow period is possible, he said, but not likely. Phoenix will monitor for infectious salmon anemia (ISA), and if it is found at one site, they will increase monitoring at the other. They have also treated fish at MACH CI for sea lice and if the numbers indicate it to be advisable, they would try to treat the whole bay [i.e., all their lease sites in Machias Bay] at once (Miller/Lewis).

Mr. Lewis testified that the CI and CIN sites are close to each other now and will be closer if this lease is granted. He stated that, because of this proximity, DMR will ask the Fish Health Technical Committee⁵ (now re-named the Aquatic Animal Health Technical Committee) to review the applicant’s request for a stocking permit to place fish on these sites. Mr. Lewis testified that the Committee may require single year class stocking at both sites and may require that they be managed as a single farm with a common fallow period to break the life cycle of the ISA pathogen. If the sites are “clean”, he said, the Committee may allow separate stocking cycles for the two sites.

Mr. Lewis is not a member of the Aquatic Animal Health Technical Committee, but he said that he wanted to alert the applicant to the Department’s plans for addressing the distance issue (Lewis, testimony). The applicant’s attorney, Mr. Hamilton, responded that Mr. Lewis’s comments constituted “fair and constructive notice” of how Cooke’s operations need to coordinate with the stocking permit process.

The decision on how the applicant will be required to stock and manage the expanded site will be made by the Department in another context each time the applicant requests permission to stock the site. The decision to be reached here is whether the proposed lease meets the criteria and can be granted. The evidence regarding the proximity of the two sites and its potential effect on fish health is being set forth in this decision as a record of the testimony at the hearing, where the issue of managing the two sites was discussed and the applicant was put on notice of how the Department intends to approach the issue.

The lease must be marked in accordance with DMR Rule 2.80.⁶

⁵ The Aquatic Animal Health Technical Committee, established by DMR Rule Chapter 24.04, is composed of fish pathologists, veterinarians and fish health experts from state and federal agencies, academia, a private fish health laboratory, and the aquaculture industry. It advises the Departments of Marine Resources and Inland Fisheries & Wildlife on fish and shellfish health issues.

⁶ **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.

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 report notes that few marine fauna were observed during the site visit, likely because of the time of year and the very fine sediments at the site. Based on 22 years of video monitoring of the existing lease site, however, the report lists a number of species “typically associated with the farm during operation”, including “mud shrimp and mysid shrimp (*Crangon septemspinosa* and *Praunus flexuosus*), crabs (*Cancer sp.*) and the occasional lobster (*Homarus americanus*), hermit crab (*Pagurus sp.*) and anemone (*Metridium senile*)” (SR4). Marine flora observed at the site included a brown benthic-diatom algal mat, several types of unattached drift algae (*Ulva*, *Laminaria*, *Fucus*, and *Ascophyllum* species) and an unidentified seaweed. No eel grass was observed (SR4).

According to the site report, the Maine Department of Inland Fisheries and Wildlife (MDIF&W) “recognizes the intertidal area between Cross Island proper and the Northwest head as a “moderate to high value wading bird and tidal waterfowl habitat”. The report notes that the “proposed expansion would move the farm 250 feet further away from the intertidal and managed habitat” and that MDIF&W has not responded to DMR’s request for review of this application (SR4). Jennifer Robinson of Cooke Aquaculture also testified that she had requested that MDIF&W review the lease proposal, but that she did not receive a response (J. Robinson, testimony).

As noted in the site report, the U.S. Fish and Wildlife Service (USFWS) owns much of the land at Cross Island and operates it as part of the Maine Coastal Islands National Wildlife Refuge with the goal of managing colonies of nesting seabirds (SR4). The USFWS will review this application as part of the U.S. Army Corps of Engineers review and permitting process. It did not submit comments to the Department regarding the proposed lease.

There are no Essential Habitats located within one-quarter mile of the proposed lease site.

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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.

A salmon aquaculture site has been operated in this location for the past 23 years, with regular monitoring of the effects of the site on the surrounding area. No evidence has been presented to show that the operation of that aquaculture facility has interfered or will interfere with existing flora and fauna, in the waters or on the land nearby.

As discussed above, the proposal for bottom culture of mussels on the site creates a possibility of retention of organic matter from fish feed and feces in the mussel matrix that could produce anoxic conditions that would be difficult to remedy. Accordingly, except for the bottom culture of mussels, the evidence supports a finding that the flora or fauna on the site or in its vicinity will not be adversely affected to any significant degree by the proposed aquaculture operation.

Therefore, I find that, except for the bottom culture of mussels, 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 Mr. Miller, there are no government-owned beaches, parks, or docking facilities within 1,000 feet of the proposed lease site. The Maine Coastal Islands National Wildlife Refuge, which owns much of the land on Cross Island, including land within 1,000 feet of the existing and proposed lease sites, is a federally-owned facility; however, Mr. Miller testified that it has neither a beach nor a dock (Miller, testimony; PS31).

The Wildlife Refuge meets the definition of “conserved lands” in the statute.⁷ As noted above, it manages the land for the purpose of managing colonies of nesting seabirds (SR4). No evidence was presented to show that the aquaculture activities have interfered or will interfere with this purpose.

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 stock for this proposed lease site are as follows: Atlantic salmon (*Salmo salar*) stock will come from company-owned hatcheries. Halibut (*Hippoglossus hippoglossus*) and Atlantic cod (*Gadus morhua*) will come from “certified” sources such as the University of Maine or GreatBay Aquaculture. Arctic char eggs

⁷ 12 MRSA § 6072 (7-A) (F) provides: “Conserved lands means land in which fee ownership has been acquired by the state, federal or municipal government in order to protect the important ecological, recreational, scenic, cultural or historic attributes of that property. Leases may not unreasonably interfere with public use or enjoyment of such beaches, parks, docking facilities, or conserved lands. In determining interference with the public use or enjoyment of conserved lands, the Commissioner shall consider the purpose(s) for which the land has been acquired.”

“would be obtained from an approved source (such as Pisciculture Des Alleguanyes of Quebec).” Mussel spat will be collected locally from the wild.

Therefore, I find that the applicant has demonstrated that there is an available source of stock to be cultured for the lease site.

G. Light

The application states that “100, 400 watt submerged lights might possibly be used to control maturation” and that lights would otherwise not be used at the site except in “unusual circumstances such as storm events and possible harvesting” (A, Section 3.b.4, 5). Mr. Miller testified that underwater lights will be used to prevent early maturation of the salmon (Miller, testimony; PS 15).

The site report notes the following:

Lights: The applicant has proposed that normal work at the site would not occur beyond daylight hours therefore exterior work lighting is not anticipated other than for emergencies. The applicant has proposed the possible use of husbandry lighting to extend the photoperiod during winter months. The lights are suspended underwater and are projected into the cages to prevent grilising (early maturation) of salmon. These lights would not be projected above the surface and therefore visibility from surrounding areas would be minimal. The U.S. Coast Guard may require navigational lighting on the lease site, however these would be navigational aids not illuminating devices (SR6).

DMR Rule 2.37 (1) (A) (8) requires applicant to demonstrate that all reasonable measures will be taken to mitigate light impacts from the lease activities. Any lighting required for navigation by the U.S. Coast Guard will clearly be a reasonable use of light. Underwater husbandry lights, if used at this site, would have minimal impact on the surrounding area.

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-producing equipment proposed for use at the lease site includes: small boats with outboard motors, a diesel feed barge, work barges, a net roller barge, a portable welder/generator, a generator for submerged lights, and a pressure washer. According to the application, the equipment is equipped with mufflers (A, section 3.b).

The site report notes that:

Each of these noise-producing devices would be equipped with a muffler and noise levels would be comparable to other commercial fishing activities in the area. Noise levels at the proposed lease site would be similar to noise levels that have been experienced during the operation of the previously existing lease site (SR6).

DMR Rule 2.37 (1) (A) (9) requires applicant 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.”

The equipment will be muffled and maintained as such and will be used during daylight hours only. The nearest land, Cross Island, is undeveloped. A salmon farm has operated at this location using similar equipment since 1987. 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

The application states that, while “colors are subject to change”, the gear colors are: cages are black, nets are red, bird cover is black, and the feeding system barge is almond or gray. The low profile of the pens, as well as their dark color, reduces their visual impact. The barge used for storing feed and feeding the fish measures 23 ft. long by 33 ft. wide by 41 ft. high. The application shows the feed barge as having 2.5 m of freeboard (8.2 ft.) when loaded, and 4.24 m. of freeboard (13.9 ft.) when empty (A, attachment 2.e.1); this is the effective height of the top of the barge above the waterline, which is well below the 20-ft. limitation in the visual impact rule.

The site report notes that the only change from the equipment currently used at the existing lease site will be the addition of six more black net pens. The other gear at the site already meets the standards of the visual impact rule (DMR Rule Chapter 2.37 (1) (A) (10)) (SR6).

The visual impact rule requires that equipment colors blend in with the surrounding area and that buoy colors do not compromise safe navigation or conflict with U.S. Coast Guard requirements. A salmon farm has operated at this location using similar equipment since 1987. The six additional black pens and nets will blend with the surroundings. Navigation markings will be reviewed by the Coast Guard. The lease operations as proposed will meet the requirements of the visual impact criteria in DMR Rule 2.37 (1) (A) (10), provided the colors of the equipment continue to blend with the surroundings. Marking buoys required by DMR and any navigation lighting required by the U.S. Coast Guard should be visible by their nature.

Therefore, I find that the proposed lease will comply with the visual impact criteria contained in DMR Regulation 2.37 (1) (A) (10).

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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 shall 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. The lease boundaries must be marked in accordance with the requirements of DMR Rule 2.80. The degree of exclusivity requested by the applicant is reasonable. Dragging will be prohibited on the lease site. Lobstering will be permitted on the site outside the mooring grid.
4. The aquaculture activities proposed for this site, with the exception of the bottom culture of mussels, 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, docking facilities, or conserved lands owned by municipal, state, or federal governments.
6. The applicant has demonstrated that there is an available source of Atlantic salmon (*Salmo salar*), halibut (*Hippoglossus hippoglossus*), arctic char (*Salvelinus alpinus*), Atlantic cod (*Gadus morhua*), and blue mussels (*Mytilus edulis*) to be cultured for the lease site.
7. The aquaculture activities proposed for this site will not result in an unreasonable impact from light at the boundaries of the lease site.
8. The aquaculture activities proposed for this site will not result in an unreasonable impact from noise at the boundaries of the lease site.
9. The aquaculture activities proposed for this site will comply with the visual impact criteria contained in DMR Regulation 2.37(1)(A)(10).

10. The applicant's request to grow blue mussels by bottom culture is denied for the reasons discussed under section 2B above, without foreclosing the ability of the applicant to request a lease amendment in the future for the bottom culture of other species.

11. The applicant's request to grow blue mussels by suspended culture is granted, with the condition that Phoenix is required to notify the Public Health Division of the Department of Marine Resources six months before it plans its first harvest of mussels from this site and to obtain a harvest permit from the Division. Subsequent harvests must be conducted in accordance with rules adopted by the Department.

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.

5. DECISION

Based on the foregoing, the Commissioner grants the requested lease of 44.7 acres to Phoenix Salmon US Inc. for ten years for the purpose of cultivating Atlantic salmon (*Salmo salar*), halibut (*Hippoglossus hippoglossus*), arctic char (*Salvelinus alpinus*), Atlantic cod (*Gadus morhua*), and blue mussels (*Mytilus edulis*), using net pen and suspended 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 \$ 25,000.00, conditioned upon its performance of the obligations contained in the aquaculture lease documents and all applicable statutes and regulations. Once the new lease is executed, Maine Coast Nordic will apply to DMR to terminate their existing 10-acre lease.

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)⁸ 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.

⁸ 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."


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 is prohibited on the lease site. Lobstering is permitted on the lease site, outside the mooring grid.
3. Phoenix is required to notify the Public Health Division of the Department of Marine Resources six months before it plans its first harvest of mussels from this site and to obtain a harvest permit from the Division. Subsequent harvests must be conducted in accordance with rules adopted by the Department.

7. REVOCATION OF LEASE

The Commissioner may commence revocation procedures if s/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: 26 August 2010


George D. Lapointe (Commissioner)
Department of Marine Resources