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**GOVERNOR'S TASK FORCE
ON THE PLANNING AND DEVELOPMENT
OF MARINE AQUACULTURE IN MAINE**

Executive Summary

January 30, 2004

**Governor's Task Force
on the Planning and Development
of Marine Aquaculture in Maine**

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The report would not have been possible without the extensive input and support that the Task Force received throughout the six month process. As a group of volunteers without in-depth knowledge of aquaculture, we depended on staff, SAP members, experts and members of the public for input and insight. The Task Force would like to thank the members of public who offered written and oral testimony and to the experts who served on panels or offered written comments on specific topics. Special gratitude goes to the members of the SAP who watched our marathon discussions; offered critique, clarifications and advice; and, despite contradictory opinions, were able to work together to prepare a cohesive response to our draft port. The input from the SAP was a critical part of the Task Force process. Finally, but my no means the least, acknowledgement and thanks goes to the outstanding staff of the Department of Marine Resources and the State Planning Office/Maine Coastal Program and Bruce Stedman of Resolve, Inc., who prepared agendas, organized panels, summarized complex issues, kept us focused on the topic at hand, forced us to meet our deadlines, took copious and detailed notes, and drafted both the Task Force and SAP report. Without their assistance, this report would not have been possible.

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Additional copies of the full report and the Executive Summary are available by calling Deirdre Gilbert of the Maine Department of Marine Resources at 207-624-6550. A complete record of Task Force proceedings, background papers, etc. is available from at: <http://www.maine.gov/dmr/aquaculture/aqtaskforce/aqtfhomepage.htm>

I. EXECUTIVE SUMMARY

In August 2003, the Task Force on the Planning and Development of Marine Aquaculture in Maine began its fact finding and deliberations to determine how to balance the range of potential uses of state waters and plan for the growth of marine aquaculture while considering all applicable scientific data and all reasonable constraints and opportunities. Over the course of the next six months, the Task Force and its associated Stakeholder Advisory Panel held several meetings and conference calls to gather information from experts and the public to be used in developing a set of recommendations. The recommendations in this report are directed to the Joint Standing Committee on Marine Resources and include changes to Maine law, regulatory language, and various policies of the Department of Marine Resources (DMR). The Task Force put considerable effort into developing a Vision for Marine Aquaculture with the intention that this vision be embraced by both the legislative and executive branches of Maine state government. This vision statement, once adopted, can provide a foundation on which the public, government agencies, and the industry can base future decisions about the development of marine aquaculture in Maine.

The full report of the Task Force provides a vision for marine aquaculture in Maine and proposes a series of guiding principles to be considered in the development of aquaculture in the future. Sections of the report provide background information on the history and current status of aquaculture in Maine, along with a summary of the state and federal regulatory structures currently in place. Recommendations from the Task Force are sorted into five themes: Bay Management; Leasing Process; Impacts of Aquaculture on Other Uses; Ecological Health; and Information, Research, and Industry Promotion. A total of 95 individual recommendations are included in the report, some of which will require further vetting and input through the legislative and regulatory review processes.

In its discussions of Bay Management, the Task Force determined that the concept of bay management may have broad applicability for managing multiple uses of the Maine coast in discrete areas, but that the implementation of bay management solely to aquaculture is not appropriate at this time. Instead, the Task Force is recommending the initiation of an effort to define the concept of bay management and assess its potential utility to the state of Maine for managing a broad range of activities along the coast.

The Task Force made numerous, detailed recommendations to improve the leasing process and reaffirmed the decision-making authority within the DMR. While agreeing that the commissioner of the DMR should retain final decision-making authority on the granting of leases, the Task Force recommends that there be more consideration given to the concerns of the local community, and it has developed recommendations to assure that members of the local community and other users of the coast have an opportunity to convey their concerns to the DMR prior to the final decision.

Recognizing that there is potential conflict between aquaculture and many of the other users of the coastal waterways, the Task Force reviewed and made recommendations to improve the leasing criteria and best management practices for aquaculture facilities to

minimize noise and visual impacts. The Task Force also took steps to assure that the DMR will consider the impact to wildlife and the scenic value of many of Maine's conserved lands.

The issues relating to the ecological impacts of aquaculture are numerous and complex. The Task Force reaffirmed that there is the potential for negative impact on the environment, and that there needs to be a robust and efficient monitoring program to ensure that these impacts are limited and reversible. There has been significant recent work by the Board of Environmental Protection to develop a discharge permit for finfish aquaculture facilities, and the Task Force has recommended that the DMR and the Maine Department of Environmental Protection coordinate their efforts to implement and review the criteria put forth in this new permitting process. The Task Force believes that the careful application of this permit, along with industry participation and agency oversight, will result in a satisfactory system of check and balances to eliminate the possibility of long-term adverse impacts on the environment.

Finally, the Task Force recognized the conflicting nature of the DMR roles as both regulator and promoter of the aquaculture sector and, while retaining the regulatory oversight of the aquaculture industry within the DMR, the Task Force recommends moving the product promotion and industry promotion functions to the Department of Agriculture and the Department of Economic and Community Development. Not only will this help address public perception issues related to the decision-making for leases, but it is likely to enhance the ecological and economic sustainability of the industry. In addition, the Task Force is recommending new efforts in scientific research and public education related to aquaculture.

The attached report of the Task Force on the Planning and Development of Marine Aquaculture in Maine contains detailed information on each of these issues, including background information, a description of how each issue was studied, a listing of findings for each theme, and the final recommendations. Those interested in aquaculture are urged to read this report in its entirety. The Task Force acknowledges that this review and the set of resulting recommendations is one step in the process of improving the governance and implementation of aquaculture. Many of these recommendations will require legislative action and others will be reviewed through the Administrative Procedures Act policies, both of which provide for public input. The Task Force urges members of the public to participate in these processes, in hopes that this report helps to inform the discussions that will ultimately result in sound and reasonable policies for marine aquaculture in Maine.

Recommendations:

IV. Maine's Aquaculture Industry: Characteristics and Trends

IV.1. In addition to the recommendations found elsewhere in this report, which are all at least in part based on the above findings, the Task Force recommends the adoption by the state of the following vision and value statements to help guide its future relationship with the aquaculture industry:(language for proposed statutory change is provided in Appendix A.1, section 3)

Maine's Vision for Marine Aquaculture

Marine aquaculture is an important and compatible element in Maine's diverse coastal economy. Aquaculture contributes to satisfying global market demands and benefits local communities and the public interest by producing high quality products, providing economic opportunities, and operating in an environmentally sustainable fashion. Maine's planning and regulatory process is adaptive, inclusive and fair, and supports the growth of the industry in an economically competitive and environmentally sustainable way.

Principles for Marine Aquaculture

- 1. A working waterfront is critical to Maine's coastal future. Marine aquaculture will be part of Maine's working waterfront.**
- 2. Aquaculture will be one of many uses of Maine's coastal environment that can be accomplished so as to be compatible with other activities such as commercial fishing and in harmony with natural resources.**
- 3. Marine aquaculture will be practiced in an environmentally sustainable fashion and will not cause permanent ecological damage.**
- 4. Maine's aquaculture leasing program will model integrity in all aspects of its operation.**
- 5. The State of Maine will encourage local participation in aquaculture permitting decisions.**
- 6. Maine's aquaculture laws and regulations will provide flexibility to address change while recognizing both the need for regulatory stability, and for stability in the use of the public resource.**
- 7. Maine's aquaculture leasing process will provide for open communication amongst stakeholders.**
- 8. Maine's aquaculture monitoring program will feature state-of-the-art environmental monitoring.**
- 9. Marine aquaculture can only flourish with high water quality.**
- 10. Marine aquaculture offers the potential to bring substantial economic value and diversity to the state and its communities.**
- 11. The State of Maine will create a welcoming environment for a range of investments in marine aquaculture.**

12. The State of Maine will encourage the development of locally-owned and Maine-based operations.
13. The State of Maine will provide and encourage incentives for innovation in marine aquaculture.

VI. Bay Management

VI.1. After extensive public input and considerable deliberations, the Task Force was divided on the issue of bay management. Due to the enormous complexity of and disagreement about the nature, scale, process and detail of bay management the recommendation of the Task Force is to not proceed with implementing bay management specifically for aquaculture at this time.

VI.2. The Legislature should charge DMR to convene a group specifically to study bay management. That group should utilize the values and information collected, discussed, and debated by the Task Force. There are two topics the group should investigate: 1) how best to define bay management, and 2) whether this concept can meet the needs of Maine people.

VI.3. The state should encourage industry cooperation to protect fish and shellfish health and biosecurity, such as that practiced in Cobscook Bay for finfish.

VII. Assessment of the Leasing Process

A. Administrative Procedure Act (APA) Lease Process

1. Formality of the Lease Process

VII.1. DMR should continue to use a formal APA process for aquaculture leasing.

VII.2. DMR should continue to work proactively to inform the public on the lease process to make it less intimidating.

VII.3. DMR should provide more informal opportunities for information exchange (see A.2 of this section).

2. Local Input Prior to Application Submission

VII.4. A mandatory scoping session should be held before an application is submitted (language for proposed changes to regulations is provided in Appendix A.2).

3. Public Information and Communication

VII.5. The Task Force recommends that DMR work with Sea Grant and the Maine Coastal Program to update the existing aquaculture information brochure and circulate it widely.

VII.6. DMR should develop a set of information posters that provide information on the lease process, particularly the decision criteria, to be used at the lease hearings and scoping sessions.

VII.7. DMR should use the scoping session as an opportunity for informal education about the leasing process.

4. Conflict Resolution Procedures

VII.8. DMR should identify mediation resources, make a list available to all parties involved in lease-related conflicts, and update the list annually.

VII.9. Conflict resolution should be a voluntary option for interested parties to pursue, outside the existing lease process.

B. Role of Municipal Government in the Leasing Application and Approval Process

1. The Timing and Adequacy of Municipal Involvement in the Lease Process

VII.10. The pre-application meeting should be held in the municipality with the harbor master and/or a municipal official, the applicant and DMR. (language for proposed changes to regulations is provided in Appendix A.2)

VII.11. A pre-application scoping session will be held. (language for proposed changes to regulations is provided in Appendix A.2)

VII.12. Jurisdiction over leasing in subtidal areas should remain with the state.

2. Mooring Fees

VII.13. Title 38, Chapter 1, §3 should be amended, consistent with the above findings, to clarify that municipalities do not have authority to determine the location of moorings associated with aquaculture lease sites, or charge mooring fees within the boundaries of aquaculture leases. (language for proposed statutory change is provided in Appendix A.1, section 11)

3. Intervener Status

VII.14. DMR should create a form letter that is sent by DMR to the municipalities with the completed application that includes a box to be checked if the municipality would like intervener status.

VII.15. At the pre-application meeting in the municipality, DMR should explain the opportunity for intervener status to the municipality.

4. Intertidal Leasing

VII.16. Amend the language of 12 M.R.S.A. §6673. (language for proposed statutory change is provided in Appendix A.1, section 10)

5. Municipal Input on Lease Decisions

VII.17. A municipality should be permitted to recommend that the Commissioner establish certain conditions on a proposed lease and the Department shall consider any conditions recommended and provide a written explanation to the municipality if the condition is not imposed. (language for proposed regulatory change is provided in Appendix A.2, section 2.37(2))

C. Decision Criteria for Granting Leases

1. Noise and Light

VII.18. Amend the statutory language to omit the charge to the Department to “quantify” impact and to add language regarding mitigation. (language for proposed statutory change is provided in Appendix A.1, section 6)

VII.19. Regulations should set forth required mitigation measures for noise and light. (language for proposed regulations regarding noise and light is provided in Appendix A.3)

2. Visual Impact Criteria

VII.20. Create regulations that set forth limitations on height, size, mass and color of buildings and equipment. Structures that exist or are under construction at the time of enactment of the rule are exempted from the height restriction for their useful lifetime. (language for proposed regulations regarding visual impact criteria is provided in Appendix A.4)

VII.21. DMR should not adopt the method used in Chapter 315 (Code of Maine Rules) in aquaculture lease siting.

3. Sufficiency of Existing Decision Criteria

VII.22. Amend the statute to reflect that the Department will take the number and density of all aquaculture leases in an area into consideration in evaluating the lease under the decision criteria. (language for proposed statutory change is provided in Appendix A.1, section 6)

VII.23. DMR should not consider the view of riparian landowners in making lease decisions.

4. Final Decision-Maker

VII.24. Retain the current system in which the Commissioner makes the final lease decision.

VII.25. Move activities related to development of the aquaculture industry from DMR to DECD and promotion to the Dept of Agriculture (see section X, language for proposed statutory change is provided in Appendix A.1, sections 1 and 2).

D. Lease Renewals and Transfers

1. Procedure for Lease Renewals and Transfers

VII.26. Delete the statutory requirement for an adjudicatory hearing upon five or more requests for both a renewal of a lease and a transfer of a lease. (§6072(12) and (12-A), language for proposed statutory change is provided in Appendix A.1, sections 7 and 8)

VII.27. Rather than an adjudicatory hearing, upon five or more requests DMR will hold a scoping session. The Department will provide 30 days for people to request a scoping session or to provide comment. (language for proposed statutory change is provided in Appendix A.1, sections 7 and 8)

VII.28. The Department shall have the discretion to hold a hearing for a renewal or a transfer if it deems it necessary. (language for proposed statutory change is provided in Appendix A.1, sections 7 and 8)

2. Fees for Renewal and Transfer Applications

VII.29. DMR should amend the regulations to assess a reasonable fee for renewal and transfer applications, following the completion of the comprehensive fee review that DMR has undertaken.

E. Administrative Issues

1. Lease Acreage Limit

VII.30. Increase the maximum lease acreage to 500 acres. (change 250 to 500 in §6072(2.E.), (12), and (12-A), language for proposed statutory change is provided in Appendix A.1, sections 4, 7, and 8)

VII.31. Create incentives for those who remain under a certain acreage through tiered rental fees (see rental fee section).

2. Enforcement

VII.32. DMR should assess the results of the new enforcement initiative. (Appendix E: Enforcement Protocol)

VII.33. The Task Force supports more funding for a greater enforcement effort.

3. Lease Fees and Fines

VII.34. Lease rental fees should be changed and should vary, depending on the activity on the site. A tiered rental fee system should be established which correlates rental fees with the type of activity and the size of the lease. Any changes to lease fees should only be considered as part of DMR's complete review of all aquaculture fees and should not be unduly burdensome.

VII.35. All aquaculture leases should contain monetary penalties for lease violations. DMR should develop a schedule of penalties for lease violations.

4. Time Period of Site Review

VII.36. Eliminate the established time period of April 1st to Nov. 15th within which the Department may conduct its site visit. (Delete the time period from §6072 (5-A), language for proposed statutory change is provided in Appendix A.1, section 5)

VII.37. DMR is encouraged to conduct site visits during times appropriate to characterize conflicting uses or the ecological significance of the site.

5. Polyculture Application

VII.38. DMR should create a written definition of the practice of polyculture.

VII.39. Reasonable incentives for the expansion of polyculture type leases should be developed.

F. Experimental Leases

VII.40. Amend the statute to eliminate the requirement for a public hearing upon five or more requests. (language for proposed statutory change is provided in Appendix A.1, section 9)

VII.41. DMR will provide a 30 day comment period on proposed experimental leases. Upon 5 or more requests, DMR will hold a public scoping session. The Department will have discretion to hold a public hearing, if it deems necessary. (language for proposed statutory change is provided in Appendix A.1, section 9)

VII.42. DMR should amend the regulations to allow an applicant to define the start date as any date within 12 month of approval of the experimental lease application. (add to lease regulations section 2.64(7): The term of an experimental lease shall run from a date chosen by the applicant, within 12 months of the date of the Commissioner's decision, but no aquaculture rights shall accrue in the lease area until the lease is signed)

VIII. Impacts of Aquaculture on Other Uses – Tourism, Recreation, Conserved Lands And Commercial Fishing

A. Tourism

VIII.1. The Task Force recommends that state agencies with responsibility for tourism, marine resources and coastal planning work to foster a collaboration between tourism and aquaculture, two important elements of Maine's natural resource-based economy. To this end, the Maine Coastal Program at the State Planning Office should work with the existing Working Waterfront Coalition (a diverse group of government, industry and nonprofit groups with an interest in the conservation of Maine's marine-related economy) to develop an informational campaign aimed at coastal residents and visitors. The theme of the campaign should revolve around the many benefits of Maine's multi-use waterfronts and provide information of interest to the traveling public about the sights and sounds associated with Maine's working waterfront. The Maine Coastal Program should also consult with the Maine Department of Economic and Community Development, Office of Tourism and the Maine Tourism Commission to ensure a high quality campaign. Outreach materials should have broad appeal for use at tourism businesses, visitor centers and municipal offices.

B. Recreation

None at this time .

C. Conserved Lands

VIII.2. Amend 12 MRSA Chapter 605 Section 6072 (7-A) (F), to read as follows:

F. The lease does not unreasonably interfere with public use or enjoyment within 1,000 feet of beaches, parks, docking facilities owned by federal, state or municipal governmental agencies or certain conserved lands. For purposes of this paragraph, “conserved lands” shall mean a) land in which fee ownership has been acquired by the local, state or federal government in order to protect the important ecological, recreational, scenic, cultural or historic attributes of that property or b) land that has been protected through fee ownership or conservation easement with funding from the Land for Maine’s Future Program.

SPO shall maintain a list of conservation lands as defined above. DMR will request this information from SPO prior to the pre-application scoping session (a modification to the leasing process recommended elsewhere in this report, language for proposed statutory change is provided in Appendix A.1, section 6)

VIII.3. Adopt regulations that provide standards for assessing the impact of a proposed aquaculture facility on the public use and enjoyment of conserved lands.

D. Commercial Fisheries

VIII.4. Lease site review window should be removed to enable DMR to conduct reviews when fishery potential is greatest. (Note: this may require multiple visits, language of proposed statutory change is provided in Appendix A.1, section 5)

IX. Ecological Health

A. Nutrient Enrichment

IX.1. Support research to study and assess whether specific relationships exist between finfish aquaculture and phytoplankton community shifts, HABs, and benthic algae (see Section X.B, recommendation 2b). Additional studies should be supported to determine if aquaculture discharges can be managed through polyculture or other means.

IX.2. Explore incentives in the leasing process for aquaculturists to employ methods such as polyculture to reduce nutrient enrichment.

IX.3. The Task Force requests that the Legislature charge DEP to review discharge permits to marine waters to ensure that cumulative impacts from all sources to the receiving water are considered.

IX.4. Maine should continue to support efforts by DMR and DEP to remove all sources of pollution along Maine’s coast.

B. Organic Enrichment (Solids)

IX.5. DMR and DEP should continue to manage aquaculture in a manner that will maintain a diverse benthic species composition and confine impacts to the immediate lease area.

IX.6. Support applied research with the industry to develop effective Best Management Practices, standards, and monitoring regimes.

C. Toxic Contaminants / Therapeutants

IX. 7. DMR and DEP should continue to monitor the environment for the presence of toxic contaminants and ecological impacts.

IX.8. DMR and DEP should continue participation in USFDA environmental studies on Slice TM.

IX.9. Maine should be especially careful to avoid impeding professional veterinary practices to prescribe and use medications in a timely manner and explore new drugs while safeguarding surrounding species.

D. Shellfish Impacts

IX.10. DMR should conduct a “screening study” that emphasizes “worst case” conditions to assess what, if any, impacts shellfish aquaculture is having in Maine.

E. Invasive/Non-Indigenous/Exotic Species

IX.11. Define “indigenous” as organisms known to occur or to have occurred in an area.

IX.12. Include genetically modified organisms (GMOs) as defined by the International Council for Exploration of the Sea (ICES) as “non-indigenous” or new species.

IX.13. DMR should develop a definition for “area” or “waterbody” in an ecological context.

IX.14. DMR should review the list of currently approved species to ensure that undesirable organisms are removed until scientific reviews are complete.

IX.15. Management of species movements should be made as requests arise so that the most current information on biology and ecology is employed.

F. Wild Atlantic salmon

IX.16. The State of Maine should work to ensure that Maine's aquaculture regulatory and husbandry practices are compatible with the Recovery Plan for Atlantic Salmon.

IX.17. The Governor and the Legislature should request Congressional support for closer collaboration and cooperation with federal services.

IX.18. The Governor should insist on full participation of state, federal and industry sectors on the research on marking, tagging and identification.

IX.19. Support research into wild smolt emigration routes and pathways of exposure to assess risk from salmon farms.

IX.20. The Governor should require equitable treatment of all salmon aquaculturists, public and private, to implement permit conditions. (e.g. genetic testing, marking, fish health, and reporting be part of any permits for public hatcheries rearing Atlantic salmon)

G. Wildlife Interactions

IX.21. Support research into the impacts on wildlife, esp. nesting birds, and to identify causes of and develop practices to avoid adverse impacts.

IX.22. Encourage and support collaborative research between industry, state and federal wildlife agencies.

H. Monitoring

IX.23. DMR should continue to implement the FAMP funded by a harvest tax. Explore and update other fee schedules to fund hearings officer and pathologist positions.

IX.24. DMR and DEP should coordinate the MEPDES and FAMP monitoring provisions to avoid redundancy and use FAMP data to the maximum extent possible to cover MEPDES requirements.

IX.25. Encourage industry to participate in ambient water quality monitoring.

IX.26. The Legislature should require the DEP to evaluate the new MEPDES permit monitoring requirements for value and efficacy by 2005 and adjust as necessary.

IX.27. The legislature should charge DEP and DMR to coordinate any user fees and funding mechanisms they develop so as to minimize the cost of environmental monitoring without compromising the quality of the monitoring programs.

IX.28. The legislature should require the DEP and DMR to review the combined costs of their monitoring and environmental impact assessment programs and consider alternatives designed to achieve the same level of vigilance at lower cost.

X. Information, Research and Industry Promotion

A. Public Information

X.1. DMR should convene several appropriate organizations to develop a public information plan. Primary organizations that should be invited to the discussion include:

**Department of Marine Resources
Maine Aquaculture Innovation Center (MAIC)
Maine Aquaculture Association
Maine Coastal Program
University of Maine Sea Grant Program**

Secondary organizations that should also be invited to participate include:

**Finance Authority of Maine (FAME)
University of Maine School of Marine Sciences
Island Institute
Coastal Enterprises Inc. (CEI)
Marine Educators Association
Gulf of Maine Research Institute
Maine Dept. of Education
Maine Dept. of Agriculture, Food and Rural Resources
Cobscook Bay Resource Center
Downeast Institute for Applied Marine Research & Education**

Charge the above group to identify areas where public information is needed and develop a plan to address these information needs. The group should consider the following categories of education needs:

- **Regulatory:** Inform the public about the regulatory structure (state and federal) and how to participate in the leasing process. Inform the public on the progress of specific lease applications and permits (See recommendations in section on leasing, Section VI (A) (3).
- **Environmental Concerns:** Inform the public about issues such as Endangered Species Act listing of wild Atlantic Salmon, ecological concerns, and husbandry.
- **Legislative Actions:** Inform the public about upcoming bills, public hearings, and resulting changes to statute or regulation.
- **Publicity About Industry:** Inform the public about new tenants in incubators, new research facilities, grant awards, small business success stories, innovations, research breakthroughs, etc.
- **K-12 Education:** Reprint and distribute MAIC high school curriculum, and provide teacher training on the curriculum, increase aquaculture presence in high school math/science activities such as the National Ocean Sciences Bowl, statewide science fair, etc.
- **University Education:** Encourage the University and Community College System to enhance and more aggressively promote their aquaculture degree programs, and establish links between their programs.

The planning group should identify practitioners to carry out these activities and seek funding to support the implementation of these education initiatives. The Task Force recommends specifically that:

- Printed materials used to inform the public and municipalities on the leasing process should be updated; and
- Recreational/hobby aquaculture should be encouraged as a way to engage and educate the public about aquaculture.

X.2. The Governor and legislative leaders should encourage the Maine Congressional Delegation to secure funds for aquaculture public information.

X.3. Ensure that the Department of Economic and Community Development's (DECD) promotion of aquaculture includes a public affairs function, duties to include:

- Communication with the public, the industry and the legislature about leasing, regulatory and policy issues regarding aquaculture;

- Solicitation of public and industry input and feedback on policy ideas under consideration;
- Distribution of press releases, organization of press conferences as appropriate;
- Convening of focus groups, meetings and forums to bring together diverse interests as needed; and
- Develop regular vehicles for communication (email lists, e-newsletters, etc.) between the department and constituent groups.

B. Research

X.4. The Governor, the Legislature and industry should strongly voice their support and expedite the recently initiated plan for the Maine Institute for Aquaculture at the University of Maine. The proposed Institute would greatly strengthen aquaculture research for Maine and address many of the findings of this Task Force.

X.5. DMR and the University of Maine should convene a group of research organizations, industry representatives, and pertinent NGOs for the purposes of setting priorities for aquaculture research, determining which species have the most potential for development and should be the focus of research efforts, and accessing bond funds to support aquaculture research. Specifically, this planning group should:

- a. Use the 2003 Gardner-Pinfold study and other references and resources as a guide in determining which species have the most potential for economic development in Maine; and
- b. Consider research needs, including those that were identified by the Aquaculture Task Force in their deliberations:
 - Ecological impact studies (nutrient carrying capacity, modeling of nutrient loading, assessment of monitoring needs, predictive nutrient loading based on biomass in the pens, risk assessment associated with PCBs (and other toxins) in farmed fish, Eutrophication studies – proportionate contribution from discharging aquaculture, impact of shellfish aquaculture on primary productivity, predictive capacity for benthic impacts);
 - Gear/Husbandry technology and development (improved anti-escapement gear, improved tagging technologies, alternative feed development to minimize the use of forage fish);
 - Genetics and stock development (breeding for disease resistance and growth); and
 - Socio-economic studies (cost/benefit to coastal communities, market research, value added/niche markets).

X.6. The DMR should convene a formal annual meeting between representatives of research institutions, industry, and pertinent NGOs to review aquaculture priorities and foster communication and collaboration between these two groups.

X.7. Ask the University of Maine to add an aquaculture seat on the Agricultural Advisory Council. This will help ensure that there is adequate faculty and focus on aquaculture.

X.8. Encourage the University of Maine's School of Marine Science to fill their shellfish aquaculture position as soon as possible.

C. Industry Development and Product Promotion

X.9. Lead responsibility for development of the aquaculture industry should be moved to the Department of Economic and Community Development (DECD) as part of its business development and science and technology programs. (language for proposed statutory change is provided in Appendix A.1, section 1)

X.10. Lead responsibility for market promotion of aquaculture should be moved to the Dept. of Agriculture (DAFFR) to become part of their market development and product promotion programs and benefit from USDA financial support. (language for proposed statutory change is provided in Appendix A.1, section 2)

X.11. Recognizing that DECD staff possesses economic development resources and DAFFR possesses agriculture promotion resources but both DECD and DAFFR lack aquaculture industry expertise, DECD should take the lead in forming an Aquaculture Industry Development Working Group with committed participation from the Maine Aquaculture Innovation Center, the Maine Aquaculture Association, and DMR. The charge of the Aquaculture Industry Development Working Group would be to advise and provide technical expertise to the DECD on aquaculture development and DAFFR aquaculture promotion, develop aquaculture business incentives, link aquaculture with existing business support programs and services, and find funding or reallocate resources for a grant writer and a business development specialist in aquaculture.

X.12. The legislature should continue to support the Maine Aquaculture Innovation Center and the DMR in their work to provide technical support and develop Maine's aquaculture industry.

X.13. The legislature should continue to support the Maine Technology Institute in its work to provide research and commercialization grants for aquaculture.

X.14. DECD should convene business development meetings between the state and multi-national salmon firms to determine what they need to encourage local entrepreneurs to grow fish for them and what they need to continue fish processing in Maine. Examples of possible incentives:

- **Increase number of acres a single company can lease (so they can support a processing plant in Maine);**
- **Find ways to encourage and enable owner-operator finfish businesses; and**
- **Explore traditional business support programs such as tax incentives, tax credits, employee training, etc.**

X.15. The Department of Agriculture should engage in product promotion activities that will result in Maine aquaculture products being recognized as sustainably produced, superior quality products in the Northeast region.

These activities should include:

- **Initiating a study to test the acceptance of a sustainable certification program for Maine finfish and shellfish products; (MAA is already seeking grant funds to do this. Also, Nova Scotia is preparing to study this.)**
- **Featuring finfish and shellfish aquaculture in “Get Real, Get Maine” and Maine Bureau of Tourism promotional campaigns;**
- **Writing regular press releases about innovation and business success for Maine aquaculture businesses. Focus this effort on Maine media outlets including local weeklies, local television and regional papers;**
- **Linking to the nutrition education network(s) in Maine and the medical community to educate consumers about the health benefits of consuming seafood; and**
- **Promoting and encouraging the Maine Aquaculture Training Institute in their effort to train new shellfish aquaculturists.**

X.16. DECD should provide the tools and support needed by aquaculture entrepreneurs to succeed in their businesses. These include:

- **Linking aquaculture entrepreneurs to existing small business services and training programs. Where possible, programs should be customized to fit the needs of aquaculture producers, as has been done in customizing the Fastrac business course for farmers;**
- **Providing matching funds to entrepreneurs to allow them to attend conferences, visit aquaculture sites in other parts of the world and get training in culture methods. Exploring ways that Sea Grant, the Maine Technology Institute and the Maine International Trade Center could fund this effort;**
- **Initiating research trade missions to mussel production areas in Canada and Europe as a way of expediting rope cultured mussel production in Maine. Research trade missions for other species should be considered, as well;**

- **Ensuring that affordable access to the water is available on a coast-wide basis to those building aquaculture businesses; (MAA and MAIC are participating in the Working Waterfront Coalition that provides public outreach and policy development on this issue.)**
- **Exploring the concept of developing “Lighthouse Zones”, meaning specific tax incentives or tax credits for those investing in aquaculture; and**
- **Provide micro-loans or grants to stimulate entry into the business and support start up companies.**

X.17. DMR and IF&W should encourage the development of aquaculture techniques for wild stock enhancement.