



2010 Annual Report

Maryland Aquaculture Coordinating Council



Governor O'Malley, DNR Secretary John Griffin and MDA Aquaculture Coordinator Karl Roscher visit Maryland shellfish farms to view successful aquaculture businesses

**“Economy,
Employment,
Environment”**

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Maryland Department of Agriculture

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Office of Marketing, Animal Industries & Consumer Services

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MARYLAND AQUACULTURE COORDINATING COUNCIL

TO: The Honorable Martin O'Malley, Governor
The Honorable Joan Carter Conway, Chairman, Senate Education, Health and Environmental Affairs Committee
The Honorable Maggie McIntosh, Chairman, House Environmental Matters Committee

FROM: Andrew Lazur, Ph.D., Chairman
Maryland Aquaculture Coordinating Council

DATE: December 1, 2010

I am pleased to forward to you the fifth annual report from the Maryland Aquaculture Coordinating Council as required by legislation creating this body in 2006. The Council has been at the forefront in developing recommendations that have propelled Maryland aquaculture to the point where this industry will become a significant contributor to our State's seafood production. The dedication provided by the Council members has allowed us to address many issues that have been placed before our group. We continue to believe, especially in the area of shellfish production, that aquaculture provides significant benefits to our **Economy** and **Employment** while aiding the **Environment**.

The Coordinating Council has addressed the tasks provided to it by the General Assembly over the years. These include the creation of Best Management Practices, the identification of our first Aquaculture Enterprise Zones, and recommendations that led to new shellfish leasing laws and regulations that target the rebuilding of our depleted shellfish resources. These accomplishments have been the result of input provided by the Maryland Aquaculture Coordinating Council, the University of Maryland, commercial aquaculture and fisheries industries and our State agencies.

Our challenge is to create a business climate that attracts private capital to invest in this exciting industry. This will magnify State efforts to rebuild our shellfish resources. While we see the opportunity to grow new businesses from entrepreneurial investment sources we also see the need to encourage commercial watermen to transition to aquaculture. Their abilities are well suited to this industry and through this effort we will see production expand and Maryland will once again become a leading producer of quality and nutritious seafood.

Aquaculture can play a significant role in producing both food and non-food aquatic items, as well as the support industries that develop around producers. It can create employment opportunities in our rural areas while improving water quality through the production of filter feeders like oysters and clams, and the use of aquatic plants to uptake nutrients and protect our bays. There are still challenges that must be met and overcome for production to reach its full potential in our State. In that regard, we submit our annual recommendations for your consideration and look forward to continue strengthening the strong relationships and teamwork that have helped us to forge the potential for new horizons in production.

I will be glad to provide briefings, should further information on the progress or potential of aquaculture in Maryland be required. I look forward to working with you on developing the recommendations presented in this report. I want to thank you for the support you have provided to the aquaculture industry, as well as the foresight and confidence you envisioned in creating the Maryland Aquaculture Coordinating Council.

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Executive Summary

The Maryland Aquaculture Coordinating Council has been heavily engaged in assisting the development of this green industry in our State. We note the following issues and make recommendations based on discussions from our meetings. The Council provides a forum for issues arising from the industry and State agencies. The composition of the Council's membership provides for a strong and diverse expertise and opinions on issues relating to aquaculture and leads to recommendations that are based on stakeholder input. For our 2010 report we respectfully submit the following for consideration:

Issues

- The growth of the aquaculture industry and increased demand for services to facilitate the efforts of individual applicants in applying for aquaculture permits will require more attention and a dedication of resources. Recent cuts in staff at the Aquaculture Office have exacerbated this situation.
- The development of shellfish aquaculture in our State, with its attendant benefits to the economy, employment and environment must include increased efforts by government to protect the private property of our growers.
- Disease diagnostic services are a necessary part of effective shellfish aquaculture management activities but are constrained by lack of resources within state laboratories to conduct this work.
- Many of our State laws and regulations have been restructured to support industry development, but new impediments related to Federal oversight are keeping Maryland at a competitive disadvantage to other states, including Virginia.
- Aquaculture is an inherently risky business and owners frequently have problems finding start-up capital. This could prevent small operators, such as watermen, from investing in this industry unless funding programs are identified and established.

Recommendations

- I.** Enhance the capabilities of MDA to facilitate industry development by adding a staff position to the Aquaculture/Seafood Program that will provide direct assistance to aquaculturists in permitting, the implementation of best management practices and marketing products.
- II.** Continue commitment to theft deterrence by increasing support for Natural Resource Police staffing and patrol and enforcement activities.
- III.** Expand aquaculture disease diagnostic services and existing programs, especially for shellfish, to provide support in disease management and health certifications required for out of state shipments
- IV.** Streamline permitting by establishing a timeline for the State aquaculture permit review process and a Regional General Permit for aquaculture activities issued by the USACOE Baltimore District.
- V.** Continue support for working capital funds through existing agricultural support and financing agencies

MARYLAND AQUACULTURE COORDINATING COUNCIL

2010 LEGISLATIVE REPORT

Background and Legislative History

In 2003 the General Assembly created a Task Force on Seafood and Aquaculture to investigate causes of declining seafood production and barriers to our aquaculture industry. The forty person group developed recommendations that led to legislation filed for the 2006 legislature by Senator Katherine Klausmeier, who had chaired the Task Force, and Delegate Tony O’Donnell, a prominent member of the Aquaculture Workgroup. The legislation created the Aquaculture Coordinating Council to replace a former advisory committee that had been relatively ineffective over the years.

“Aquaculture Coordinating Council recommendations have led to passage of several important pieces of bipartisan legislation”

The Council was composed of specified membership including representatives of Maryland agencies involved in the permitting, regulation, policing and advancement of the industry. It included representatives of the University of Maryland as well as three appointed members each for the aquaculture and commercial fishing industries. The Council was provided with a range of designated tasks by the legislature which it complied with during the ensuing years. Among these were to:

- *Develop Best Management Practices on or before December 31, 2006;*
- *Investigate and, to extent feasible, enhance the area of State waters available to private lease for aquaculture and the seafood industries;*
- *Support the aquaculture industry in its efforts to implement innovative procedures and to comply with associated regulations;*
- *Provide for the establishment of Aquaculture Enterprise Zones in the Chesapeake and coastal bays;*
- *Formulate and make proposals to the Governor, and the Senate and House committees responsible for the Environment, recommendations for advancing Maryland aquaculture, including recommendations for a fee structure to reduce State expenditures on aquaculture programs;*
- *Establish and monitor a grant program for the implementation of appropriate projects that support the economic health of the State aquaculture industry;*
Conduct applied studies of projects and products that will expand the aquaculture industry in the State;
- *Conduct market tests to determine acceptability and potential demand for new aquaculture products;*

- *Implement pilot projects and small commercial demonstrations to resolve outstanding quality of production issues and to educate industry representatives, regulators, and other partners;*
- *Enhance the awareness of innovative aquaculture products and programs among commercial buyers and the general public; and*
- *Regularly review State regulations impacting aquaculture and make recommendations to the Aquaculture Review Board regarding any necessary or advisable regulatory changes.*

The Council has complied with these tasks in the time frame specified wherever possible. In the case of grant programs, the Council has not been provided with funds for that purpose. However, it has been involved in the creation and implementation of an aquaculture funding program through the Maryland Agriculture and Resource-Based Industries Development Corporation (MARBIDCO). Resources were provided through the recent Crab Industry Disaster Program and State capital funds, and have enabled Maryland watermen and others to borrow money for shellfish aquaculture. Upon payback, these will constitute a revolving fund, allowing future businesses to obtain capital at attractive rates to enter this industry.

The Council met the deadline for creating Best Management Practices (BMP) for our industry. This was done through the creation of six working groups comprised of Council members and other interested parties. This made Maryland one of the first states in the region to adopt these

“Aquaculture development creates benefits by production of finfish, shellfish, aquatic plants and support industries for our State and nation”

and have served as a model for others seeking guidelines for orderly development. While the initial BMPs were published by the end of 2006, the following General Assembly enacted a bill that called for it to develop additional material for amphibians. Therefore, the BMPs were modified in July 2007 in compliance and are available on the Maryland Department of Agriculture website for public access.

While the BMPs are currently voluntary, they are poised to become the basis for permitted activities should that be required in future. BMPs are based on good science and on the principal that aquaculture producers should act as “good neighbors” to others in their area.

State of the Maryland Aquaculture Industry

Proceeding from the Task Force to the current Aquaculture Coordinating Council (ACC) has created the infrastructure for support of our aquaculture industry that has led to an enhanced industry with strong opportunity for further development. It should be stressed that legislation that has been developed from ACC recommendations has been bipartisan and, in the case of the recent changes in Maryland’s shellfish lease laws, been passed unanimously by the General Assembly. This highlights the strong support that exists for this industry within the political structure of the State.

Maryland has a small but diverse aquaculture industry, but with strong potential for expanded production in several areas:

Finfish aquaculture includes several production methods including state-of-the-art recirculating systems that purify the water and concentrate wastes allowing them to be easily aggregated and disposed of. One large company near Hurlock (Waterland Fisheries) raises tilapia and another innovative operation produces high value shrimp (Marvesta). In addition, there are businesses that provide products to the ornamental aquarium trade by raising tropical fish and corals. Maryland was a leader in developing the technology for the production of striped bass and hybrids in the 1980s and 90s and had several farms producing these marketable fish but production has now moved to other states.



Richard Schuck of Maryland Aquatic Nurseries produces a wide range of plants

Aquatic plant production has long been a staple of Maryland aquaculture with several businesses producing for the water garden trade. While that market has been limited in recent years due to the economic downturn and concentration of the business in larger wholesalers, Maryland Aquatic Nurseries (MAN) has partnered with the University of Maryland (UM) and two Eastern Shore developments to create methods for using aquatic plants in stormwater ponds to take up nutrients so that they do not enter our bays and add to pollution. This has also led to aquascaping of the normally bland looking stormwater ponds so that they are attractive and add to property values rather than detracting from them. This project has allowed MAN to increase their bottom line during a period when other companies have lost business. In addition to plants for attractiveness, Maryland businesses such as Environmental Concern, Inc. have been leaders in the use of aquatic plants for shoreline stabilization. Using

aquatic plants instead of “hard armoring” shorelines with bulkheads or riprap is an environmentally benign way of protecting valuable real estate while being ecologically positive.



Marinetics produces high quality oysters known as “Choptank Sweets” near Cambridge

Shellfish aquaculture has been both a mainstay of Maryland aquaculture for many decades as well as an area of great contention. While the State was one of the first three states in the nation to enact legislation in 1830 allowing the leasing of bay bottom for the cultivation of oysters, many watermen opposed this practice and spent the past century enacting laws and regulations to make

it difficult. In spite of these barriers, there was significant production from leased bottom until the disease epizootics of the 1980s and 90s led to the destruction of the resource. Recent advances in the breeding of genetically superior lines that are disease tolerant led to

an initiative by the Governor to modify the Maryland leasing program during the 2009 General Assembly. That legislation passed both houses unanimously and has become part of the overall Oyster Management Plan that seeks to restore this important industry and resource. While almost 5,000 acres of leased bottom still exist in Maryland, an additional twenty-four applications for new leases have been filed and are awaiting finalization. Off bottom production using floats and bottom cages, has gained producer attention with permit applications for several businesses now being processed.

Support industries provide an important adjunct to aquaculture development. Maryland companies have been at the forefront of the aquaculture supply business for decades. The LaMotte Company manufactures water quality testing equipment and The Power House produce efficient aeration units. Several marine supply houses provide materials needed to operate production businesses and fabricators of items like crab pots are looking at the potential of building containment devices for shellfish aquaculture. A principal benefit of building aquaculture will be the support businesses that will be required for their success.

Recent Council Activities

The Aquaculture Coordinating Council has addressed many issues in recent years to create an environment conducive to industry development in our State. Most recently the Council has:

- Assisted in developing new shellfish leasing laws at the direction of the Governor and Secretary of Agriculture, creating the first such change in Maryland in 103 years. These recommendations provided the structure that deleted many of the most inhibiting laws that had developed over the decades and replaced them with a regulatory structure for ease of management. The legislation that developed from this was passed unanimously by both houses of the General Assembly in 2009 with strong bipartisan support. The Council then provided advice in the drafting of regulations to guide aquaculture permitting. It is envisioned that shellfish lease acreage may increase by over 50% in the next few years, providing a way to rebuild our important bivalve stocks while creating economic growth and employment in our rural areas and benefitting the environment through increased biofiltration and nutrient transfer.



Waterman Johnny Shockley (center) shows his oyster cages with hatchery seed

- Worked in conjunction with DNR, MDA, UME and MARBIDCO to establish a financial assistance program for shellfish aquaculture. This team has developed the structure that will lead to attractive low interest loans to provide watermen and other citizens with the capital needed to create shellfish aquaculture businesses. Members have provided personal one-on-one service to applicants to develop business and production plans that meet the requirements of this program and will assist in assessing applications during the initial year of the project. Information has been developed that can provide future applicants with guidance in applying for loans to support their businesses.



John Farrington, aka "Johnny Oysterseed", has developed innovative equipment for shellfish seed production

- Organized and funded the 2010 Maryland Aquaculture Conference to provide information to those seeking to enter the industry. This two-day educational program was held in Annapolis in November with over 150 attending. The agenda included speakers covering a wide range of topics from obtaining a lease to financing the business and marketing aquaculture products. Speakers from other several other states provided information on the reality of developing aquaculture businesses, showing that it is feasible to create a successful venture in the industry. Written evaluations showed strong support for the program with requests for additional conferences in future years. Funds have already been obtained for a 2011 conference to continue to provide high quality education for our industry.

Interacting with the Aquaculture Review Board

The Aquaculture Review Board (ARB) evaluates aquaculture permit applications. This process includes input provided by Board members representing the state agencies with aquaculture

“The Review Board provides a way to track applications and provide better service to our constituents”

oversight including, DNR, MDE, DHMH, Board of Public Works and MDA. The Board meets monthly to review new, revised and renewal applications. The ARB issues permit processing updates at each Council meeting to keep Council members apprised of all ongoing aquaculture permitting activities and issues arising throughout the process. When necessary, the

ARB briefs the Council on issues impacting the review process and requests recommendations on resolving these impediments. This interactive relationship has been beneficial to the development of the industry.

Engaging Our Citizens

Aquaculture Coordinating Council members have long valued the inclusion of our citizens in their deliberations and operations. From the beginning, meetings of the Council and its various workgroups have been open to the public. While Council rules require workgroups to be chaired by a Council member, provision has been made to include non-Council members in groups to get the broadest possible input for decisions.

During the past year, we have increased our effort to build an interest list of those wishing to attend Council meetings. Email messages are sent to this list prior to all meetings with the agenda attached to notify our citizens about general and special meetings and workgroups. This has resulted in more attendance over the course of the past year. Further advances will be instituted during the coming year so that the Council can build a strong base of interested citizens who can become knowledgeable about the issues facing the industry and provide input through the public forum provided at each meeting.

Current Activities

During the coming year the Council will initiate the following projects:

Review Maryland Aquaculture Laws and Regulations

This task is included in the enabling legislation and requires the Coordinating Council to review all state aquaculture laws and regulations on a regular basis. It currently calls for the Council to recommend revision, deletion or continuation on these to the Aquaculture Review Board (ARB). It has been noted that the provision for reporting to the ARB should be changed to one where the report would be made to the agencies and legislature, since this is where the changes would be necessary. This regular review would provide oversight to ensure that the laws and regulations are not burdensome on the industry and serve as a means of adequately assessing their usefulness

compared to their intent. In short, this would provide the best means of ensuring that the State is “business friendly” and create an environment where businesses are willing to invest.



The University of Maryland Horn Point Hatchery near Cambridge provides high quality oyster larvae and seed

Evaluate and Recommend Aquaculture Enterprise Zones

One of the tasks assigned to the ACC is the evaluation and recommendation of Aquaculture Enterprise Zones (AEZ). These are sites that are pre-permitted for shellfish aquaculture and allow businesses to obtain the permits needed for off bottom culture methods in months rather than the years that it currently takes for most to be approved. An additional

benefit is that this concentrates culturists in an area where the Natural Resources Police can put additional effort into protecting private property, cutting down on the theft that has plagued shellfish growers for decades. The ACC is ideally suited for this task and has developed a

workgroup to investigate, identify and recommend AEZs. The first two are in the Patuxent River but there is additional interest in obtaining sites on the Eastern Shore for use of bottom cages. This will be carried out through meetings with local watermen and citizens resulting in recommended site(s) that can be productively developed into shellfish culture areas.

Review Best Management Practices

The development of Best Management Practices (BMP) was mandated by the General Assembly in the first year of ACC operations. To carry out that charge, a series of six workgroups was organized to address a range of topics. These were chaired by ACC members but included both Council members and interested citizens. The final BMP was developed in our first year of operation and posted to the MDA website. In 2007, the legislature mandated that the Council address BMPs for amphibians and the package was therefore modified and approved in July of that year. While BMPs are currently voluntary, they stand as a model for the region and could be used for providing a working set of rules for the orderly development and operation of all types of aquaculture businesses. The guiding principle of these is to be environmentally friendly and a “good neighbor” to nearby the business. The Council has discussed reviewing BMPs as a project for 2011 to ensure they are kept current and beneficial to the State and industry.

2010 Recommendations

The Aquaculture Coordinating Council has developed the following recommendations for consideration by the General Assembly. We feel that action on these will best aid the aquaculture industry in the near term.

- I. Enhance the capabilities of MDA to facilitate industry development by adding a staff position to the Aquaculture/Seafood Program that will provide direct assistance to aquaculturists in permitting, the implementation of best management practices and marketing products*

Discussion: At a period when increased demands are being made on the Aquaculture Office, the staff was cut by one person and questions were raised by auditors during 2010 regarding terminating the entire program. The position of Aquaculture Coordinator was mandated during passage of the 2005 legislation by the General Assembly as a means of aiding permitting and identifying impediments to the industry. With the recent passage of a new lease law, there has been increased demand for service. This is being impeded by lack of resources to effectively carry out quick responses to citizens in developing businesses and meeting the tasks needed to provide coordination between state and federal agencies.



Dr. Don Meritt of the University of Maryland looks over seed oysters at the Stump Cove Oyster Company

II. *Continue commitment to theft deterrence through enforcement and sanctions*

Discussion: Theft of private property has been an ongoing problem in the shellfish aquaculture industry for decades, as shown by numerous surveys. Watermen especially



Aquaculture provides important services for restoring endangered fishery resources like the sturgeon

have noted a reluctance to invest in this industry because of worries about the product on their grounds. While the Natural Resources Police have continued to upgrade their ability to enforce laws on the water through resources such as the new Maryland Law Enforcement Information Network (MLEIN), their physical resources are at an all-time low. The Aquaculture Coordinating Council has long supported additional resources for the NRP to aid in protecting the private property of growers. We urge consideration of expanding the force along with dedicated resources for electronic

observing of private grounds and significant increases in fines and other sanctions for those found to be carrying out theft of private shellfish. Growers have a significant investment in the shellfish on their grounds and should be as well protected in this as any citizen can expect to be in their homes and businesses.

III. *Expand aquaculture disease diagnostic services and existing programs, especially for shellfish, to provide support in disease management and health certifications required for out of state shipments*

Discussion: A basic requirement for aquaculture is the identification and management of diseases. This is extremely important for growers to be able to plan production and for hatcheries and nurseries to be able to ship products to other states. Currently the only source for this service in Maryland is the Cooperative Oxford Lab but with minimum staff they do not have the resources to be able to handle the larger volumes of testing that will be required to build a successful industry. Virginia provides this service to their industry at no cost, which puts Maryland at a competitive disadvantage in the region. The addition of new technicians would allow quick and regular assessment of disease for shellfish producers, allowing them to make the important decision of whether to let them grow or harvest early in the event of a disease epizootic.

IV. *Streamline permitting by establishing a timeline for state agency aquaculture permit review and seek a State General Permit for aquaculture by the Baltimore District of the U.S. Army Corps of Engineers (USACOE) as quickly as possible*

Discussion: A key factor in the development of the industry is to remove bureaucratic impediments to permits. This was a principal reason for the General Assembly to create the Coordinating Council and Review Board and this issue remains critical today. While some

“Businesses need clear guidelines for permits so that they can begin their operations with a minimum of difficulty – time is money”

legal and regulatory roadblocks have been removed, new ones have developed that require immediate solution. Procedures required by the USACOE Baltimore District and NOAA have created extreme time lag in permits being issued for several attractive aquaculture projects, which may affect their ability to locate in Maryland. In order to attract investors to this industry and build strong and vibrant businesses, entrepreneurs must have a clear path for entering into production. The identification of governmental roadblocks should be a principal function of the MDA Aquaculture Office, with enough resources to be able to work within agencies to determine the best path to minimize impediments and ensure a competitive environment for our businesses.

V. *Continue support for working capital funds available to aquaculture through existing agricultural support and financing agencies*

Discussion: Aquaculture is an inherently risky business but with significant rewards for economic growth and employment while aiding the environment. Traditional providers of capital, however, are often reluctant to provide funds to this business until it evolves to the point where there is a greater financial track record. In this regard, Maryland has already invested funds in the Maryland Agriculture and Resource Based Industries Development Corporation (MARBIDCO) to develop shellfish aquaculture. These funds are meant to become revolving but will have little income generated for several years as the initial shellfish growers bring their crops to market. There is a need to invest in further finance programs if we are to see an increase in shellfish production that can provide a needed boost to the seafood industry and the environmental benefits that it provides. A team that includes MARBIDCO employees, University of Maryland Extension faculty, DNR and MDA has developed procedures for loan packages and business plans for the initial program. This could be expanded further if funds were provided on a continuing basis to MARBIDCO and dedicated to aquaculture loans.

MACC Membership

Membership of the Aquaculture Coordinating Council is specified in the enabling legislation and represents the state agencies involved in regulating and promoting the industry, research and extension branches of the University of Maryland, and members of the aquaculture and seafood harvesting industries. Industry members are appointed by the Governor while the others are specified by their organizations.

The Council meets bi-monthly in odd numbered months and elects a Vice Chairman at its July meeting. That person rotates to the Chairmanship the following year with election of a new Vice Chairman. To provide balance, one officer is usually from the industry appointees while the other is from the agency/institution category.



Dr. Fred Wheaton (left) provides assistance to clam grower Steve Gordon in the coastal bays

During 2010 Dr. Reginal Harrell was appointed by the President of the University of Maryland College Park to replace Dr. Fred Wheaton, who retired after over forty years of service. Dr. Wheaton spent his career as an agricultural engineer specializing in aquaculture engineering. He served as Chairman of that department for many years prior to finishing his career as Director of the U.S. Department of Agriculture's Northeastern Regional Aquaculture Center, which is located at the UMCP. He was presented with a certificate of appreciation by the Maryland Department of Agriculture upon his departure from the Council.

Members of the Maryland Aquaculture Coordinating Council

Mr. Karl Roscher, *Aquaculture Coordinator, Maryland Department of Agriculture*

Dr. Andrew Lazur, *Chairman, University of Maryland Center for Environmental Science*

Mr. Don Flax, *Byrd's Inc., Aquaculture Industry*

Senator Katherine Klausmeier, *Maryland Senate*

Delegate Anthony O'Donnell, *Maryland House of Delegates*

Mr. Steve Gordon, *Gordon's Shellfish, LLC., Aquaculture Industry*

Mr. Robert Parkinson, *St. Thomas Creek Oyster Co., Aquaculture Industry*

Cpt. Ben Parks, *Dorchester County Seafood Harvesters Association, TFL*

Mr. Craig Mask, *Calvert County Watermen's Association, TFL*

Mr. John Van Alstine, *Anne Arundel County Working Watermen's Association, TFL*

Mr. Donald Webster, *University of Maryland Extension*

Dr. Reginal Harrell, *Northeastern Regional Aquaculture Center, University of Maryland*

Cpt. Quincy Shockley, *Maryland Natural Resources Police*

Mr. Michael Naylor, *Maryland Department of Natural Resources*

Ms. Mindie Burgoyne, *Maryland Department of Business and Economic Development*

Ms. Kathy Brohawn, *Maryland Department of the Environment*

Ms. Erin Butler, *Maryland Department of Health and Mental Hygiene*

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