



Larry Hogan, Governor
Boyd Rutherford, Lt. Governor
Mark Belton, Secretary
Joanne Throwe, Deputy Secretary

September 26, 2017

The Honorable Joan Carter Conway
Chair, Senate Education, Health and Environmental Affairs Committee
2 West Miller Senator Office Building
Annapolis, Maryland 21401

The Honorable Kumar P. Barve
Chair, House Environment and Transportation Committee
Room 251 House Office Building
Annapolis, Maryland 21401

Re: Submission of Report on Maryland Aquaculture Coordinating Council Annual Report

Agency: Maryland Department of Natural Resources

Report Authority: Natural Resources Article § 4-11A-3.2(c)(1)(i) (MSAR #9426)

Dear Chairs:

In accordance with Section 4-11A-3.2(c)(1)(i) of the Natural Resources Article, the Department of Natural Resources hereby submits the annual summary of the Maryland Aquaculture Coordinating Council Annual Report. The document addresses the requirement to report yearly for advancing Maryland aquaculture, including recommendations for a fee structure on aquaculture operations in order to reduce State expenditures on aquaculture programs.

If you have any questions about this submission, please do not hesitate to contact Allison Cordell, Legislative Director, at 410-260-8112 or Allison.cordell@maryland.gov.

Sincerely,

Mark Belton
Secretary

enclosure

cc: Sarah Albert, Legislative Library (5 hard copies)



2017

Maryland Aquaculture Coordinating Council

Annual Report 2017

Situation and Outlook report on Council activities with recommendations for advancing Maryland aquaculture. Presented to the Governor of Maryland, Chair of the Senate Education, Health and Environment Committee and Chair of the House Environment and Transportation Committee

Cover: Leaseholder Scott Budden demonstrates how bottom cages are used to grow high quality oysters to Queen Anne's County seventh graders at the Agriculture Awareness Days program begun to educate them about the importance of Maryland food production



Tawes State Office Building
580 Taylor Avenue, B-2
Annapolis, Maryland 21401

TO: The Honorable Larry Hogan, Governor
The Honorable Joan Carter Conway, Chairman, Senate Education, Health and
Environmental Affairs Committee
The Honorable Kumar Barve, Chairman, House Environment and Transportation Committee

FROM: Dr. Reggie Harrell, Chairman
Maryland Aquaculture Coordinating Council

DATE: July 1, 2017

SUBJECT: ANNUAL REPORT OF THE AQUACULTURE COORDINATING COUNCIL

I am pleased to present the annual report of the Maryland Aquaculture Coordinating Council for 2017. The Council has provided leadership in developing an aquaculture industry that has brought Maryland national recognition. The dedication of our Council members to growth in this sustainable industry continues, and we believe that aquaculture provides significant benefits to our economy and the environment.

The Coordinating Council has fulfilled many of the tasks assigned to it by the General Assembly since it was created in 2005. We recommended changes to regulations that are helping this industry rebuild our depleted shellfish resources while creating the opportunity for an increasing number of shellfish aquaculture businesses to become established in our State. The Council has a designated broad-based membership that includes representatives of State agencies, the General Assembly, the University of Maryland, and industry and has provided a model for progress.

We see opportunity to grow new businesses while encouraging traditional watermen to transition to aquaculture to assure their future. Their abilities are well suited to aquaculture production and many have already entered this industry. We look forward to their contributions in expanding production that will provide for expanding economic opportunities in our rural communities and helping to improve water quality and create the habitat that is needed to foster a healthy Chesapeake Bay.

There are still challenges to overcome for aquaculture to reach its full potential in our State. Therefore, we submit our annual recommendations for your consideration and look forward to continuing the strong collaboration with our elected leaders that has helped us forge ahead.

The Council is pleased to provide briefings if additional information is needed as we work towards developing the recommendations presented in this report. I wish to thank you for the strong support you have provided to the aquaculture industry, as well your foresight and confidence in creating the Maryland Aquaculture Coordinating Council.

Executive Summary

The Aquaculture Coordinating Council (ACC) is charged by the Maryland General Assembly with assisting the development of commercial aquafarming by studying and making recommendations on changes to attract investment and promote economic and employment growth in the industry.



Commercial aquaculture produces high quality seafood products for human consumption

The Council provides a forum for agencies, institutions, political leaders and businesses to discuss issues while providing strong and diverse expertise to meet its legislative mandate to “advance Maryland aquaculture”.

Support for the development of this economically and environmentally beneficial industry has resulted in nearly 6,500 acres now in active shellfish production. Watermen and entrepreneurs have entered the industry, bringing expertise in production techniques, business development and marketing that have led to the formation of new companies, new brands and expanded sales. These businesses continue to expand and invest in planting, raising and harvesting millions of shellfish annually.

The Council has broad and diverse experience and expertise on aquaculture issues that aids in creating solutions for identified needs. The following issues have been identified as current impediments and must be addressed to support continued growth and opportunity for aquaculture in our state. We respectfully submit the following for consideration:

Issues

I. Water Quality Monitoring: The Maryland Department of Environment (MDE) is responsible for carrying out federal (Title 21 CFR Part 123) and state (Natural Resources Article 4-742 Maryland Annotated Code) mandating bacteriological monitoring and investigation into pollution sources to ensure that shellfish are harvested from unpolluted waters. In addition, MDE conducts intensive shoreline surveys to identify and mitigate pollution sources that may impact shellfish harvesting waters. Continued expansion of the oyster aquaculture industry has resulted in year-round oyster harvest that is increasing the number of monitoring stations needed to ensure adequate spatial coverage to protect public health. This has also increased personnel hours for shoreline surveys, and equipment and operational resource needs to support their monitoring and data collection.

II. Shellfish Disease Diagnostic Services: Shellfish diseases are a continuing problem for expanding aquaculture production. Diagnostic services are critically needed for effective farm management but are currently constrained by lack of resources in state laboratories conducting the work. These laboratories must expand to support industry growth and the increasing need for routine and catastrophic diagnostic services. Without the ability to provide low cost service on a timely basis, Maryland will be unable to successfully compete with states that regularly provide these services to their industry quickly and at a minimal cost.

III. Aquaculture Innovation Funding: Legislation creating the Aquaculture Coordinating Council provided eleven charges for the Council. Item ii directed the Council to “Establish and monitor a grant program for the implementation of appropriate projects that support the economic health of the State aquaculture industry”. To date, this charge has not been implemented because funds have not been provided. With the growth of the shellfish aquaculture industry, new equipment and methods have been brought to Maryland for the production of quality oysters and hard clams with steady growth being shown during the past five years. However, those in business are often unable to allocate funds to innovative ideas they may have for applied research projects that could result in more efficient gear, higher output, lower input costs and identification of new markets. Providing funds for this purpose could keep Maryland producers at the forefront of the industry nationally.

IV. Protection of Property: The Natural Resources Police (NRP) provides a strong presence to protect our marine resources. However, their ranks have been drastically reduced during the past two decades, leading to concern for their ability to protect natural shellfish stocks and to assist private growers in keeping their crops safe and secure. When NRP was merged with the Maryland Park Rangers in 2005, a total of 353 NRP officers and law enforcement officer park rangers were in the unit. Immediately after the merger, 35 PINS were abolished or transferred to other agencies. Currently, NRP has an authorized strength of 260 with about 24 vacancies with more to come. Only 169 positions are sergeants and below assigned to uniformed, field patrol. These are the officers that are actually seen out in the field on a daily basis.



Additionally, this year will likely see a large number of NRP officers eligible for retirement, further stressing their ability to respond quickly and effectively to aquaculture problems. Strong support for the NRP will be required if Maryland is going to meet the challenge of attracting private capital to invest and expand production of aquaculture crops to meet the growing demand for quality seafood. The Council has annually urged political leaders to provide additional funds for law enforcement officers in order to keep this a strong and visible force on the waters of the State.



Partners Working Together for Aquaculture Development

Maryland Agencies

Department of Commerce

Department of Agriculture

Department of the Environment

Department of Natural Resources

Department of Health

Natural Resources Police

MD Agriculture & Resource Based Industries Development Corporation

University System of Maryland

University of Maryland

University of Maryland Extension

University of Maryland Center for Environmental Science

Federal Agencies

USDA Natural Resource Conservation Service

US Army Corps of Engineers, Baltimore District

National Oceanic & Atmospheric Administration

Non-Governmental Organizations

Oyster Recovery Partnership

The Radcliffe Foundation

Maryland Farm Bureau



Aquaculture in Action: waste oyster shell from a processing plant is aged for a year, washed and containerized, then placed in aerated tanks with hatchery produced larvae, which are allowed to circulate and set on the shells. They are then transferred to a planting vessel for placement on an oyster lease to grow before being harvested and processed once again. *Photos from Metompkin Bay Oyster Co.*

Maryland Aquaculture Coordinating Council

Annual Report 2017

The Council - A Legislative History

The Aquaculture Coordinating Council has a specified membership that includes the Maryland agencies involved in the permitting, regulation, policing or advancement of the industry. It includes three representatives of the University System of Maryland and appointed members of the aquaculture and commercial fishing industries. The Council is charged by the General Assembly with designated tasks. 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, 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 Coordinating Council is directed to provide policy recommendations to “advance Maryland aquaculture”

Engaging our Citizens

The Coordinating Council provides scheduled time for public input at its meetings and has developed procedures to assure non-Council expertise in all of their workgroups and subcommittees. The Council has an e-mail list that is used to notify interested parties about general and special meetings, as well as workgroups. Since initiating this e-mail service, meeting attendance has noticeably increased with broad representation from growers and other stakeholder groups on a regular basis.

The Council uses contact with citizens as an opportunity to identify potential new members who may be interested in serving on it. Maryland law requires three aquaculture industry representatives and three Tidal Fish License (TFL) holders be appointed to the Council. These members serve staggered three year terms and may be appointed for two consecutive terms before being required to take at least one year off before becoming eligible for appointment again. Since its formation, the Council has been fortunate to have had superior representation from those who have been in the appointed categories, with several being elected to leadership roles over the years. Four members (two in each Industry/TFL category) rotate from the Council each year. The building of a strong shellfish aquaculture community has created an opportunity to identify new growers for Council appointment. Members help to identify problems and areas of concern and work together to strengthen Maryland aquaculture to create **economic growth and increased employment while aiding the environment.**



Status of Maryland Shellfish Aquaculture

The following table illustrates the significant progress that has been made to increase shellfish aquaculture leasing from September, 2010, when a new leasing program was implemented, through June 2017:

<i>Lease Activity September 2010-June 2017</i>	<i>Total Lease Sites</i>	<i>Total Acreage</i>
All lease applications submitted	436	9145
Submerged Land Leases executed	143	4552
Water Column Leases executed	80	376
All leases executed	223	4928
<i>Applications currently in process:</i>		
Submerged Land & Water Column Leases	115	2002

Through June 2017, the Maryland shellfish aquaculture industry included a total of 390 shellfish leases covering 6,346 acres. Of these, 327 are Submerged Land Leases (SLL) or traditional spat on shell bottom leases, which currently encompass 6,050 acres. Water Column Leases (WC), which utilize innovative containment gear such as cages or floats, now cover 296 acres. To date, in 2017, DNR has permitted 463 distinct individuals to work on these leases.

Shellfish Aquaculture Lease Summary

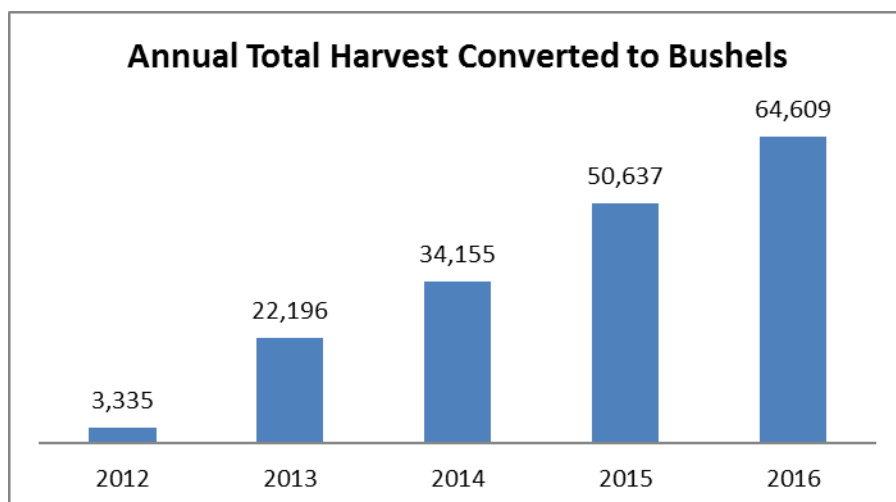
Type	Acres	Count
SLL	6050	327
WC	296	63

Definitions:
SLL = Submerged Land Lease
WC = Water Column Lease

Type	AA	CA	CH	DO	KE	QA	SM	SO	TA	WI	WO	Total
SLL	351	122	39	2338	45	25	729	706	603	991	101	6050
WC	9	15	0	82	5	0	115	20	10	0	40	296
Total	360	137	39	2420	50	25	844	726	613	991	141	6346

Type	AA	CA	CH	DO	KE	QA	SM	SO	TA	WI	WO	Total
SLL	24	12	2	74	1	3	73	28	57	45	8	327
WC	3	1	0	18	1	0	23	5	2	0	10	63
Total	27	13	2	92	2	3	96	33	59	45	18	390

Oyster Harvest from Leases: The total annual harvest from shellfish aquaculture leases has continued to increase over the past five years. In 2016, growers reported harvesting 64,609 bushels of oysters from their leases. Annual harvest is expected to continue to increase in 2017 as more acreage is brought into production and oysters previously planted reach market size.



Shellfish Aquaculture Lease/Leaseholder Statistics

- 390 leases are currently held by 166 individuals/companies
- Average sized Submerged Land Lease is 18.5 acres while Water Column Leases average 4.7 acres
- Largest leases: SLL = 311 acres; WC = 27 acres
- 84% of active leases are Submerged Land Leases
- 36% of the leases issued since 2011 are for Water Column Leases
- 48% of leaseholders hold Tidal Fish Licenses (TFLs)

Accomplishments

Aquaculture and Submerged Aquatic Vegetation

A recent issue has occurred due to the expansion of submerged aquatic vegetation (SAV) in areas of the Chesapeake Bay. Maryland law requires that new lease proposals be reviewed for the presence of SAV. New leases are prohibited from being issued in areas where the presence of SAV has been identified in any of the previous 5 years. To further protect SAV, current law prohibits leaseholders from working in areas of existing leases where SAV has encroached. Where conflicts exist, use restrictions may be placed on the lease to protect the SAV. This has caused leaseholders to be unable to use portions of their leases for shellfish production, which affects sales and profitability.



Submerged Aquatic Vegetation is vitally important to maintain healthy bay ecosystems

Council discussion of this important issue led to the filing of Senate Bill 964 by Senator Klausmeier and Delegate Mautz during the 2017 General Assembly. The bill specified that DNR review the issue and submit a report and recommendations to the Governor and General Assembly by December 1, 2017 to resolve this issue.

DNR requested the Council assist in the review and a workgroup was established. It includes agency staff, scientists, industry and environmental representatives. The initial meeting was held in May with others scheduled monthly during the summer to provide information required to assess the issue and make recommendations for resolution to the Council. These will be discussed and a final report issued to the DNR, to be provided to the Governor and General Assembly. Member of the workgroup include:

- **Dr. Reginal Harrell**, *Chair, Aquaculture Coordinating Council*
- **Mr. Donald Webster**, *Vice-chair, Aquaculture Coordinating Council*
- **Mr. Karl Roscher**, *Maryland Department of Natural Resources, Aquaculture Division*
- **Dr. J. Court Stevenson**, *UMD Center for Environmental Science, Horn Point Lab*
- **Dr. Jeffrey Cornwell**, *UMD Center for Environmental Science, Horn Point Lab*
- **Ms. Rebecca Golden**, *MD DNR, Submerged Aquatic Vegetation*
- **Dr. Suzanne Bricker**, *Scientist, National Oceanic and Atmospheric Administration*
- **Mr. Bobby Leonard**, *Ruff and Ready Seafood, Talbot County*
- **Mr. Brian Russell**, *Shore Thing Shellfish, LLC, St. Mary's County*
- **Mr. William Cox**, *Honga Oyster Company, Dorchester County*
- **Mr. Rick Meatyard**, *Oyster Farmer, St. Mary's County*
- **Mr. Lawrence Jennings**, *Coastal Conservation Association, Maryland*
- **Dr. Allison Colden**, *Scientist, Chesapeake Bay Foundation*

Maryland Agricultural and Resource Based Industry Development Corporation

MARBIDCO Aquaculture Funding Programs

Since the creation of the Maryland Shellfish Aquaculture Financing Fund in 2011, MARBIDCO has approved 60 loans to 35 borrowers totaling \$3,621,972 for projects located in 10 tidal counties. 29 were for Submerged Land Leases, 27 for Water Column (cage or float) Leases, and four were a combination of both bottom and water column projects. Fifty-one loans were made to commercial watermen (TFL holders) and fifty-two loans are fully drawn.

In 2012, a special finance program was established for commercial watermen to develop remote setting systems to produce seed oysters. MARBIDCO has approved two loans in this program totaling \$60,000, with both being fully drawn. Growers who have taken advantage of this program have not only used the systems to produce seed oysters for their leased grounds but have sold spat on shell to the state for placement on public harvest grounds to keep that important part of the oyster industry viable.



Education and Training

University of Maryland Extension (UME) has received support since 2010 to conduct training programs for shellfish aquaculture. Initially provided by NOAA Crab Industry Disaster funds through the Department of Natural Resources, recent years have been funded by the Philip E. and



Stacey Willey demonstrates cultchless seed nursery techniques to growers attending extension workshop on production methods

Carole R. Radcliffe Foundation and the Oyster Recovery Partnership (ORP). Training programs include workshops, field demonstration and short courses on topics identified through needs assessments. Notification is sent to all leaseholders and posted on web and Facebook pages. Support materials include technical manuals and spreadsheets which are provided in print and electronic forms. Oyster Hatchery Short Courses have been held at the state-

of-the-art UMCES Horn Point Lab (HPL) with seasonal training provided through intern programs. The HPL hatchery is the largest in the world for the eastern oyster and produces almost 2 billion oysters for restoration and commercial development while conducting research into improved culture methods.

HPL, ORP and UME began a joint Remote Setting Training program in 2011 to provide setting systems in the Bay area. Growers can use the tanks to produce spat on shell seed oysters for planting their bottom leases to comply with Maryland's "active use" mandate. Currently the program operates 38 systems in 8 locations around the Chesapeake Bay area. Growers reserve he

systems for two-week periods from June through August, with larvae, individual instruction and follow-up assessment of the success provided by HPL hatchery technicians, with all results mailed to the participants for filling with their required activity report at the end of the year. In five years of operation, the program has grown as shown in the chart:

	2011	2012	2013	2014	2015	2016
Participants	12	18	27	31	40	45
No. of sites	5	6	9	9	9	8
Larvae used (millions)	226	567	706	325	453	738
Spat produced (millions)	33	212	278	186	146	235
Shell used (bushels)	6,000	19,000	30,200	17,710	25,784	38,776

Remote Setting Training Program Statistics 2011-2016

A week-long Oyster Hatchery Short Course was taught at the HPL hatchery with lectures and hands-on work for attendees. Students handled oysters through spawning and larval care, while learning about disease management, phytoplankton production and business operations. One HPL intern was retained as a Faculty Research Associate to manage a new Oyster Demonstration Farm, one of the first of its kind in the nation. The Industry Intern program was expanded to four positions and a pilot program was developed with a commercial Eastern Shore oyster business.

Extension programs are planned using surveys and needs assessments to provide industry input. Planning is done by Extension's Seafood Production Action Team that includes representatives from state agencies, University of Maryland components and non-governmental organizations. During 2016, a wide range of programs was offered in the areas of *Production Systems*, *Business Management* and *Seafood Technology*. These included:

Production Systems

- *Seminars at East Coast Commercial Fishermen's and Aquaculture Trade Expo*
- *Remote Setting Training Program - workshops, statewide training and seasonal operations*
- *Cultchless Seed Production and Nursery Operations*
- *Oyster Hatchery Short Course*
- *Oyster Grower Open House at the Horn Point Hatchery*
- *Water Column Aquaculture Gear Field Demonstration (2 workshops)*
- *Data Based Decision Making in Shellfish Aquaculture*
- *Oyster Disease Identification and Management*
- *Understanding Sidescan Sonar Charting of Your Lease*
- *Understanding Oyster Pests and Predators*

Business Management

- *Managing Risk in Shellfish Aquaculture*
- *Internet and Social Media Marketing for Your Business*
- *Tax Management for Shellfish Growers*
- *Marketing and Sales for Shellfish Growers*
- *Business Planning for Shellfish Grower (2 workshops)*

Seafood Technology

- *Analysis of Microbial Contaminants in Seafood*
- *Hazard Analysis Critical Control Point (HACCP) Training for Shellfish Growers*
- *Seafood HACCP Segment II (2 programs)*

Programs are evaluated at their conclusion and the feedback is used to determine if the courses met the needs of attendees. Final evaluation of 2016 programs was carried out by the Action Team and used to plan the 2017 workshops. This provides ongoing quality control to ensure training programs meet industry needs.

In 2016, a Demonstration Oyster Farm was installed at the Horn Point Lab. It contains a variety of gear used on water column leases including bottom, midwater and surface culture systems. It is similar to an Agricultural Experiment Station for aquaculture and allows faculty to collect data on farming operations, conduct applied research and provide educational programs using real world gear and situations. Growers are able to view systems from several manufacturers and countries to determine which would be best for their location and production strategy. Farm personnel collect data on cost and labor to more accurately populate spreadsheets developed for growers to assist in creating accurate business plans.



Extension workshop at Horn Point Oyster Demonstration Farm shows growers a variety of production equipment options

Issues and Recommendations

The Council has identified issues affecting the advancement of Maryland aquaculture and is providing the recommendations developed through their bi-monthly meetings. For 2017, the Council respectfully submits the following issues and recommendations for consideration:

I. Water Quality Monitoring

Issue: The Maryland Department of Environment (MDE) is responsible for carrying out federal (Title 21 CFR Part 123) and state (Natural Resources Article 4-742 Maryland Annotated Code) mandating bacteriological monitoring and investigation into pollution sources to ensure that shellfish are harvested from unpolluted waters. In addition, MDE conducts intensive shoreline surveys to identify and mitigate pollution sources that may impact shellfish harvesting waters. Continued expansion of the oyster aquaculture industry has resulted in year-round oyster harvest that is increasing the number of monitoring stations needed to ensure adequate spatial coverage to protect public health. This has also increased personnel hours for shoreline surveys, and equipment and operational resource needs to support their monitoring and data collection.

MDE's Compliance Division has tracked the hours devoted to aquaculture. For two quarters in 2015, 503 hours were spent specifically for aquaculture monitoring activities

and, in 2016, four quarters were tracked with 1,411.7 hours. Finally, in the first quarter of 2017, staff put in 268 hours. This will increase as the industry continues to expand.

This year there is some uncertainty for funding past September 2017 when the Federal Fiscal Year ends. The administration in Washington has suggested a minimum 30% cut to the US Environmental Protection Agency's (EPA) funding for state monitoring programs, which includes shellfish. While oversight is from the US Food & Drug Administration (FDA), there is no funding provided for meeting their requirements. Over time, EPA funding has supported field monitoring programs because of the water quality and public health obligations required under the federal Clean Water Act. If action successfully cuts EPA funds, it will have a significant impact on MDE's monitoring programs, with heavy impact felt by Maryland's expanding aquaculture industry.

Recommendation: Support additional state funds for MDE's shellfish programs and continue to track federal funding to ensure that fiscal gaps are addressed. These programs have been effective in assuring that Maryland's shellfish industry remains competitive nationally while maintaining its excellent reputation for safe and wholesome products. It is critical for Maryland's economic and public health needs to support MDE's shellfish monitoring programs.

II. Shellfish Disease Diagnostic Services

Issue: Shellfish diseases are a continuing problem for expanding aquaculture production. Diagnostic services are critically needed for effective farm management but are currently constrained by lack of resources in state laboratories conducting the work. These laboratories must expand to support industry growth and the increasing need for routine and catastrophic diagnostic services. Without the ability to provide low cost service on a timely basis, Maryland will be unable to successfully compete with states that regularly provide these services to their industry quickly and at a minimal cost.



DNR Shellfish Disease expert Chris Dungan teaches at the 2016 Oyster Hatchery Short Course at the UM Horn Point Hatchery

Recommendation: Expand the Cooperative Oxford Laboratory's aquaculture disease diagnostic services by providing the resources to hire an additional shellfish disease diagnostic technician with the expertise to carry out this work. Services should be based at the lowest cost possible to: (a) encourage shellfish growers to continuously monitor crops for disease prevalence and intensity on a regular schedule through properly developed biosecurity programs, and; (b) provide health certification for seed stocks sold and shipped in interstate commerce to make Maryland hatcheries and nurseries competitive with other states providing this service at low or no cost to their industries.

III. Aquaculture Innovation Fund

Issue: Legislation creating the Aquaculture Coordinating Council provided eleven charges for the Council. Item ii directed the Council to “*Establish and monitor a grant program for the implementation of appropriate projects that support the economic health of the State aquaculture industry*”. To date, this charge has not been implemented because funds have not been provided. With the growth of the shellfish aquaculture industry, new equipment and methods have been brought to Maryland for the production of quality oysters and hard clams with steady growth being shown during the past five years. However, those in business are often unable to allocate funds to innovative ideas they may have for applied research projects that could result in more efficient gear, higher output, lower input costs and identification of new markets. Providing funds for this purpose could keep Maryland producers at the forefront of the industry nationally.

Recommendation: As envisioned by the Council, the Aquaculture Innovation Grant Program would be funded at \$100,000 annually and overseen by an Advisory Board comprised of seven individuals representing state agencies, the University of Maryland and industry. Growers would be required to be actively engaged in the Maryland seafood and



Innovation - Metompkin Seafood industrialized remote setting to better manage their oyster grounds

aquaculture industries. They would apply for funds by submitting proposals to the Board, at specified times during the year. Funds would not be allowed for the purchase of vessels, vehicles or salaries. The intent of the program is for those in production to pursue improvements in their operations without having to bear the cost and risk during the development process. The program would be organized to fund supplies or create equipment and provide support for innovative products or methods used for aquaculture commodities.

Proposals would be reviewed by the Board with external reviews requested, if required for additional input. At the conclusion of the project, a report would be required from the recipient which would then be in the public domain for information transfer across a spectrum of users. Participants would also be encouraged to provide information on their projects through UME educational programs.

In creating this grant program, the Department of Natural Resources is asked to: 1) request funds within the scope of their budget to be submitted to the Governor’s office for the 2018 fiscal year, or; 2) provide funds for the program from those paid by the Maryland Port Administration (MPA) in their biennial agreement with the Department.

IV. Protection of Property

Issue: The Natural Resources Police (NRP) provides a strong presence to protect our marine resources. However, their ranks have been drastically reduced during the past two decades, leading to concern for their ability to protect natural shellfish stocks and to assist private growers in keeping their crops safe and secure. When NRP was merged with the Maryland Park Rangers in 2005, there were a total of 353 NRP officers and law enforcement officer park rangers. Immediately after the merger, 35 PINS were abolished or transferred to other agencies. Currently, NRP has an authorized strength of 260 with about 24 vacancies with more to come. Only 169 positions are sergeants and below assigned to uniformed, field patrol. These are the officers that are actually seen out in the field on a daily basis.

Additionally, this year will likely see a large number of NRP officers eligible for retirement, further stressing their ability to respond quickly and effectively to aquaculture problems. Strong support for the NRP will be required if Maryland is going to meet the challenge of attracting private capital to invest and expand production of aquaculture crops to meet the growing demand for quality seafood. The Council has annually urged political leaders to provide additional funds for law enforcement officers in order to keep this a strong and visible force on the waters of the State.

Recommendation: Increase support for Natural Resources Police to deter theft of public and private shellfish stocks by providing the force with expanded personnel and funds for enhanced technological equipment that can multiply the efforts of duty personnel for enforcement activities. NRP developed a Strategic Plan for FY2015-FY2019 that specifically addresses staffing needs. Funding should be allocated to support of the staffing recommendations as detailed in that document.

The Council requests that respective state agencies consider the recommendations in this report when formulating budget requests for 2018 and urges the Governor and General Assembly to support them through the 2018 session. The Council looks forward to continuing the development of Maryland aquaculture - for **economic growth**, for **increased employment** and for the **environmental benefits** that derive from a healthy and thriving industry.



Members of the Maryland Aquaculture Coordinating Council

Dr. Reginal Harrell, Chairman, University of Maryland – Research

Mr. Donald Webster, Vice-Chairman, University of Maryland Extension

Mr. Karl Roscher, Department of Natural Resources

Senator Katherine Klausmeier, Maryland Senate

Delegate Johnny Mautz, Maryland House of Delegates

Mr. J.D. Blackwell, 38 North Oysters, LLC, Aquaculture Industry

Mr. Eric Wisner, Wisner Oysters, Aquaculture Industry

Ms. Terry Witt, Witt Seafood, Aquaculture Industry

Mr. John VanAlstine, VanAlstine Seafood, TFL

Mr. Stuart Dawson, TFL

Mr. Jim Mullin, TFL

Dr. Donald Meritt, University of Maryland Center for Environmental Science

Ms. Kim Coulbourne, Department of Health

Mr. Ron Buckhalt, Department of Agriculture

Mrs. Kris Shock, Department of Commerce

Ms. Kathy Brohawn, Department of the Environment

Lt. Catherine Medellin, Natural Resources Police

Mr. Stephan Abel, Oyster Recovery Partnership

Mr. Colby Ferguson, Maryland Farm Bureau

For additional information, please contact:

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Aquaculture and Industry Enhancement Division***

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