

MARYLAND AQUACULTURE COORDINATING COUNCIL

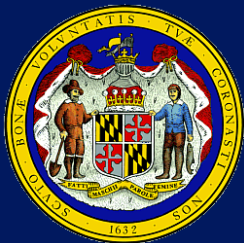
FY 20

Natural Resources Article § 4-11 A-03.2(c)(1)(i)

Prepared by the Maryland Aquaculture Coordinating Council

November 2025

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2020

Maryland Aquaculture Coordinating Council

Annual Report 2020

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: True Chesapeake Oyster Company's
Patrick Hudson (right) shows MD DNR
Aquaculture and Industry Enhancement unit
Director Karl Roscher (left) equipment they use
to produce high quality oysters for sale in the
company's suite of restaurants and raw bars*



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580 Taylor Avenue, B-2
Annapolis, Maryland 21401

TO: The Honorable Lawrence Hogan, Governor
The Honorable Paul Pinsky, Chair, Senate Education, Health and Environmental Affairs
Committee
The Honorable Kumar Barve, Chair, House Environment and Transportation Committee

FROM: J.D. Blackwell, Chair, Maryland Aquaculture Coordinating Council

DATE: July 1, 2020

SUBJECT: ANNUAL REPORT OF THE AQUACULTURE COORDINATING COUNCIL

I am pleased to present the 2020 report of the Maryland Aquaculture Coordinating Council. The Council has provided leadership to develop an aquaculture industry that has brought Maryland national attention and recognition. The dedication of our Council members to the growth provided by this industry continues. We believe aquaculture provides significant benefits for economic growth and expanded employment of our residents, while aiding the environment and providing our state and nation with quality seafood.

The Coordinating Council has carried out many of the tasks assigned to it by the General Assembly when it was created in 2005. We consistently recommend changes to regulations to help the industry rebuild depleted shellfish resources while creating opportunity for an increasing number of aquaculture businesses to become established and expand. The Council's defined, broad-based membership includes representatives of industry, state agencies, General Assembly, University of Maryland and support organizations that provides a model for progress by working together.

We see opportunities to grow new businesses while encouraging watermen to transition to aquaculture to assure their future. Their abilities are suited to aquaculture production and many have already entered the industry. We look forward to their contributions in expanding production to provide expanded economic opportunities for rural communities and help improve water quality while creating the habitat needed to foster healthy Chesapeake and coastal bays.

There are still challenges for aquaculture to reach its full potential in Maryland. 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 will be pleased to provide briefings to you or your members if additional information is needed to develop the recommendations presented in this report. I wish to thank you for the 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) was created by the Maryland General Assembly in 2005 and charged with assisting the development of commercial aquafarming by studying and making recommendations on changes required to attract investment and promote economic and employment growth in the industry. The Council provides a forum for state agencies, institutions, non-governmental organizations, political leaders and business leaders to discuss issues while providing strong and diverse expertise to meet its legislative mandate to “advance Maryland aquaculture”.

Support for development of this economically and environmentally beneficial industry has resulted in nearly 7,500 acres being in active shellfish production. Watermen and entrepreneurs have entered the industry, bringing advances in production, business development and marketing to create new companies, brands, expand sales and develop support industries. These include equipment fabrication, vessel construction and supplies. Aquafarming businesses have expanded and invested in planting, raising and harvesting millions of shellfish annually.

The Council has broad and diverse experience in 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) laws mandating bacteriological monitoring and investigation into pollution sources to ensure that shellfish are harvested from unpolluted waters. MDE conducts intensive shoreline surveys to identify and mitigate pollution sources that may affect shellfish harvesting waters. Continued expansion of shellfish aquaculture has led to year-round harvest that is increasing the number of monitoring stations needed to ensure adequate spatial coverage to protect public health. This has increased personnel hours for surveys as well as equipment and operational resources to support monitoring and data collection.

II. Shellfish Disease Diagnostic Services: Shellfish diseases are a continuing problem for growers to expand aquaculture production. Diagnostic services are critically needed for effective farm management but are constrained by lack of resources in the state laboratory conducting this work. This expertise must expand to support industry growth due to increasing need for both 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 provide these to their industry quickly and at minimal cost.

III. Fishery Resource Grant Funds: Legislation that created the Aquaculture Coordinating Council provided tasks for it to carry out. 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, funds have not been provided for this purpose. With the growth of the aquaculture industry, new equipment and methods have been brought to Maryland to produce quality oysters and clams with strong growth in recent years. However, those in business are often unable to allocate funds to develop ideas they have for applied research that could result in more efficient gear, higher output, lower input costs and identification of new markets. Providing funds for this purpose will keep Maryland producers at the forefront of the industry nationally. We suggest this be patterned after the program operated by Virginia that includes both commercial fisheries and aquaculture projects.

IV. Protection of Property: The Natural Resources Police (NRP) provides a strong presence to protect our marine resources. However, their ranks have been reduced during the past two decades, leading to concern for their ability to protect natural shellfish stocks and assist private growers in keeping crops secure. When NRP was merged with the Park Rangers in 2005, a total of 353 NRP and law enforcement 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 26 vacancies and more to come. Only 188 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. NRP must be able to respond quickly and effectively to problems and theft has repeatedly been identified as a principal one in surveys. Support for NRP assets is required for Maryland to meet the challenge of attracting private capital to invest and expand aquaculture crops to meet growing demand for seafood. The Council has urged political leaders to provide enhanced funds for law enforcement for a strong and visible force and urges that new assets be provided to this vital force.



Partners Working Together for Aquaculture Development

Maryland Agencies

Department of Health

Department of Commerce

Department of Agriculture

Department of the Environment

Department of Natural Resources

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

Maryland Farm Bureau

Oyster Recovery Partnership



Maryland Aquaculture Coordinating Council Annual Report 2020

The Council - A Legislative History

The Aquaculture Coordinating Council has a designated membership that includes Maryland agencies involved in permitting, regulating, policing and advancing the industry. It includes three representatives of the University System of Maryland, appointed members of the aquaculture and commercial fishing industries and non-governmental organizations. The Council is charged by the General Assembly with designated tasks to develop the industry through all segments, including finfish, shellfish and aquatic plants. Tasks assigned to the Council include:

- *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.*

Engaging our Citizens

The Coordinating Council schedules time for public input at regular and workgroup meetings and has developed procedures to assure non-Council expertise in its proceedings. 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 service, attendance has noticeably increased with regular and broad representation from growers and other stakeholder groups.

The Council uses contact with citizens to identify potential new members who may be interested in serving. Maryland law requires three aquaculture industry representatives and three Tidal Fish License (TFL) holders be appointed to the Council. These members serve staggered terms and may be appointed for two consecutive ones 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. Four members (two in each Industry/TFL category) rotate from the Council each year. The building of a strong aquaculture community has created opportunities to identify new growers for Council appointments. Members help to identify problems and areas of concern, working together to strengthen Maryland aquaculture to create expanded economic growth and increased employment for our citizens while aiding the environment.

In late 2019, the Maryland Department of Natural Resources formed a workgroup to identify and discuss a suite of issues raised by the expansion of shellfish aquaculture. The workgroup was able to address seven topics including visual issues with nearshore leases, public notification of pending applications, conflicts with commercial fishing operations and waterfowl blinds, leasing in sanctuary zones and criteria for oyster density as a metric for leasing. These issues were discussed at meetings with Council recommendations provided to the Department for consideration in developing criteria to advance aquaculture production.

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 September 2020:

<i>Lease Activity September 2010-June 2020</i>	<i>Total Lease Sites</i>	<i>Total Acreage</i>
All lease applications submitted	570	11,237
Submerged Land Leases executed	200	5,778
Water Column Leases executed	122	673
All leases executed	322	6,451
<i>Applications currently in process:</i>		
Submerged Land & Water Column Leases	104	2,171

Through September 2020, Maryland's shellfish aquaculture industry included 465 shellfish leases covering 7,513 acres. Of these, 363 are Submerged Land Leases (SLL) or traditional spat on shell bottom leases, which currently encompass 6,939 acres. Water Column Leases (WC), which utilize innovative containment gear such as cages or floats, now cover 574 acres. To date in 2020, DNR has permitted 504 distinct individuals to work on these leases.

Shellfish Aquaculture Lease Summary

Type	Acres	Count
SLL	6,939	363
WC	574	102

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

Type	AA	CA	CH	DO	KE	QA	SM	SO	TA	WI	WO	Total
SLL	370	142	89	2,611	45	20	766	1,053	700	1,127	15	6,939
WC	9	36	8	199	5	4	201	20	40	0	53	574
Total	379	178	97	2,810	50	24	967	1,073	740	1,127	68	7,513

Oyster Harvest from Leases: The total annual harvest from shellfish aquaculture leases has continued to increase over the past five years. In 2020, growers reported harvesting 47,080 bushels of oysters from their leases. The observed decrease in harvest is likely attributable to significant freshwater inflow in most of the oyster producing areas and the marked drop in market sales due to COVID-19.

Shellfish Aquaculture Lease/Leaseholder Statistics

- 468 leases are currently held by 168 individuals/companies
- 78% of active leases are Submerged Land Leases
- 22% of the leases issued since 2011 are for Water Column Leases

Workforce Education and Training

University of Maryland Extension (UME) has received support since 2010 to conduct training programs for shellfish aquaculture. Funds were provided by NOAA Crab Industry Disaster funds through the Department of Natural Resources and the Radcliffe Foundation. Training programs included workshops, field demonstration and short courses with notification to all leaseholders and postings on web and Facebook pages. Support materials include technical manuals and spreadsheets provided in print and electronic forms. The UMCES Horn Point Lab (HPL) oyster hatchery produces high volumes of larvae and seed to support the industry.

HPL and UME operate the Remote Setting Training program to provide systems for growers to learn to produce spat on shell seed oysters for planting bottom leases to comply with “active use” requirements for lease retention. The program operates 38 systems in locations around the Bay. Growers reserve systems for two-week periods from June through August with larvae, instruction and assessment of setting success provided by HPL technicians. Results are sent to participants to file required activity reports. The program normally services 45 growers annually who produce over 250 million spat in 212 sets. Once trained, participants construct their own systems designed to produce seed oysters based on lease size and annual planting required.

Extension training programs are planned using surveys and needs assessments. Planning is carried out by Extension’s Seafood Production Action Team that includes representatives from state agencies, University of Maryland components and non-governmental organizations. Programs are offered in multiple topics in the categories of *Production Systems*, *Business Management* and *Seafood Technology*. Fifteen to twenty-four educational programs are normally conducted annually for growers, although the Covid shutdown prevented most of those in 2020. A demonstration oyster farm conducts research on a variety of culture equipment at the Horn Point Laboratory near Cambridge, with workshops normally held several times annually to provide training for growers using contained gear systems in water column leases to produce single oysters for restaurants and raw bars.

Programs are evaluated with feedback used to determine if they met the needs of attendees. Evaluations are used to plan future workshops. This provides ongoing quality control to ensure training meets industry needs.



J.D. Blackwell of 38° North LLC Oyster Company shows UMD interns how a seed oyster nursery system operates at his farm in St. Mary’s County.

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 2020, 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 tracks the hours devoted to aquaculture. These have risen in recent years due to the addition of thirteen new monitoring stations specifically for aquaculture, which is an increase of six stations from those that previously existed.

Currently there is uncertainty for funding due to potential decrease in Federal funds. The administration in Washington has suggested a minimum thirty percent cut in US Environmental Protection Agency (EPA) funding for state monitoring programs, which includes shellfish. While oversight is from the US Food & Drug Administration (FDA), no funding is provided for meeting these requirements. Over time, EPA funding has supported field monitoring programs because of water quality and public health obligations required under the federal Clean Water Act. If action cuts EPA funds, it will have significant impact on MDE monitoring programs with impact felt by Maryland's expanding aquaculture industry.

Recommendation: Provide additional state funds for MDE shellfish programs and continue to track federal funding to ensure 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 the state laboratory conducting the work. This laboratory must expand to support industry growth and the increasing need for both 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.

Recommendation: Expand DNR's Cooperative Oxford Laboratory shellfish disease diagnostic services by providing funds to hire at least one additional shellfish disease diagnostic technician with expertise to carry out this work. Services should be charged at the lowest rate possible to: (a) encourage shellfish growers to monitor crops for disease prevalence and intensity on a regular schedule for proper biosecurity, and; (b) provide health certification for seed sold and shipped in interstate commerce to make Maryland hatcheries and nurseries competitive with states providing services at low or no cost to their industries.

III. Fishery Resource Grant Funding

Issue: Legislation creating the Aquaculture Coordinating Council provided a series of charges for it. 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 important charge has not been implemented because funds have not been provided. With the growth of shellfish aquaculture, new equipment and methods must be introduced to produce quality products. However, those in business are often unable to allocate funds to develop innovative ideas for applied research that could result in more efficient gear, higher production, lower input costs and identification of new markets. Providing funds for this purpose will keep Maryland producers at the forefront of the industry nationally. Virginia operates a program that provides a strong model for Maryland, with grants to both commercial fisheries and aquaculture to develop new and innovative ideas. Results must be made available to the public for others to utilize them.

Recommendation: The Council's vision is for an Aquaculture Innovation Fund to be established at \$100,000 annually and overseen by an Advisory Board comprised of seven individuals representing state agencies, University of Maryland and industry. Growers would be required to be actively engaged in the Maryland seafood and aquaculture industries. Growers would submit proposals to the Board at specified times during the year. Funds would not be allowed for the purchase of vessels, vehicles or payment of

salaries. The intent of the program is for those in production to pursue improvements in operations without having to incur cost and risk during development. The program would fund supplies or develop equipment and provide support for innovative products or methods used for commercial fishing and aquaculture products.

Proposals would be reviewed by the Advisory Board with external reviews requested, if required for additional input. At the conclusion of a project, a report would be required from the recipient which would 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 UMD Extension programs.

To create this, the Department of Natural Resources is asked to: 1) request funds in their budget to be submitted to the Governor's office for the 2020 fiscal year, or; 2) provide funds for this program from those they currently receive from the Maryland Port Administration (MPA) in their biennial agreement.

IV. Protection of Property

Issue: The Natural Resources Police (NRP) provides a strong presence to protect our marine resources. However, their ranks have been reduced during the past two decades, leading to concern for their ability to protect natural shellfish stocks and assist private growers in keeping crops secure. When NRP was merged with the Park Rangers in 2005, a total of 353 NRP and law enforcement 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 26 vacancies and more to come. Only 188 positions are sergeants and below assigned to uniformed field patrol. These are the officers that are actually in the field on a daily basis. NRP must be able to respond quickly and effectively to problems and theft has repeatedly been identified as a principal one in aquaculture industry surveys. Support for NRP assets is required for Maryland to meet the challenge of attracting private capital to invest and expand aquaculture crops to meet the growing demand for seafood. The Council has urged political leaders to provide enhanced funds for law enforcement for a strong and visible force and urges that new assets be provided to this vital unit.

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 2020 and urges the Governor and General Assembly to support them through the 2020 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 AQUACULTURE COORDINATING COUNCIL

Mr. J.D. Blackwell, Chair, 38° North Oysters LLC, Industry
Dr. Jeffrey Cornwell, Vice-chair, UMD Center for Environmental Science
Senator Katherine Klausmeier, Maryland Senate
Delegate Johnny Mautz, Maryland House of Delegates
Mr. Colby Ferguson, Chairman, Maryland Farm Bureau
Mr. James Mullins, TFL, Maryland Watermen's Association
Mr. William Cox, Honga Oyster Co., Industry
Mr. Eric Wisner, Wisner Oysters, Industry
Mr. Robert "Moochie" Gilmer, TFL
Mr. Robert Witt, TFL
Dr. Reginal Harrell, University of Maryland
Mr. Donald Webster, University of Maryland Extension
Mr. Ronald Buckhalt, Maryland Department of Agriculture
Ms. Kathy Brohawn, Maryland Department of the Environment
Mr. Karl Roscher, Maryland Department of Natural Resources
Lt. Catherine Medellin, Maryland Natural Resources Police
Mr. Kris Schock, Maryland Department of Commerce
Ms. Kim Coulbourne, Maryland Department of Health
Mr. Stephan Abel, Oyster Recovery Partnership

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Commercial aquaculture produces high quality seafood products for human consumption

The Coordinating Council is directed to provide policy recommendations to “advance Maryland aquaculture”



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.*



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



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