MARYLAND
DEPARTMENT OF
NATURAL RESOURCES

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

May 6, 2016

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)(l)(i) (MSAR #9426)

Dear Chairwoman Conway and Chairman Barve:

In accordance with Section 4-11A-3.2(c)(l)(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)

2015

Maryland Aquaculture Coordinating Council

Annual Report 2015

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: Oyster seed is cleaned and sorted at the 38º North Oyster Company in St. Mary's County as part of their aquaculture process to produce high quality shellfish for restaurants

Maryland Aquaculture Coordinating Council Annual Report 2015

The Maryland Aquaculture Coordinating Council is charged by the General Assembly with "advancing Maryland aquaculture". This inherently green industry offers economic growth and employment, mainly in our rural areas, while aiding the environment. Our industry currently includes producers of quality shellfish, finfish, aquatic plants and tropical and ornamental species, as well as equipment, supplies and services to support growers.

In 2015, growth within the Maryland aquaculture industry has been supported by shellfish aquaculture, specifically oyster farming. Accordingly, this report has been prepared to provide information on the continued development of shellfish farming and bring attention to the issues impacting future expansion of this sector of the aquaculture industry.

Status of Maryland Shellfish Aquaculture

Maryland's new shellfish lease laws became effective in 2009, removing lease location, size and corporate ownership limitations that formerly restricted industry growth. The new laws also established a strict use or lose criteria requiring leaseholders to operate their leases or return them to the State so the acreage could then be made available for leasing by new shellfish aquaculture businesses.

Following the adoption of new leasing laws, the Aquaculture Coordinating Council worked with industry members, the Maryland General Assembly, state/federal agencies and other stakeholders to create an infrastructure that supports shellfish aquaculture development. Through this collaboration, Maryland has established the Shellfish Aquaculture Loan Fund, an Oyster Aquaculture Education and Training Program, a Remote Setting Training Program and a Regional General Permit process to streamline federal permitting. These programs and other incentives provided increased opportunity for this industry to grow and have resulted in documented positive impacts for our state.

The industry has responded to these opportunities, 330 shellfish aquaculture lease applications have been received by DNR and the Department has issued 160 new shellfish leases to businesses covering approximately 3,000 acres since September 2010. Continued growth in this industry is expected as there are an additional 105 lease applications currently being processed by the Department. Watermen have become increasingly interested in investing in this industry as over 60% of the applications received since 2010 have been filed by applicants or co-applicants that have indicated they hold Tidal Fisheries Licenses (TFL).

Maryland now has a vibrant industry. There are currently 357 shellfish aquaculture leases on 4670 acres that are actively being used by growers to plant and produce millions of oysters. In 2015, DNR permitted and registered nearly 600 distinct individuals to engage in shellfish aquaculture activities on and associated with these leases and leaseholders have produced, harvested and sold in excess of 50,000 bushels of oysters. The following tables provide a breakdown and distribution of Submerged Land and Water Column Leases and acreage by type and county.

Active Lease Summary

Type	Acres	Count
SLL	4388.59	294
WC	281.46	63

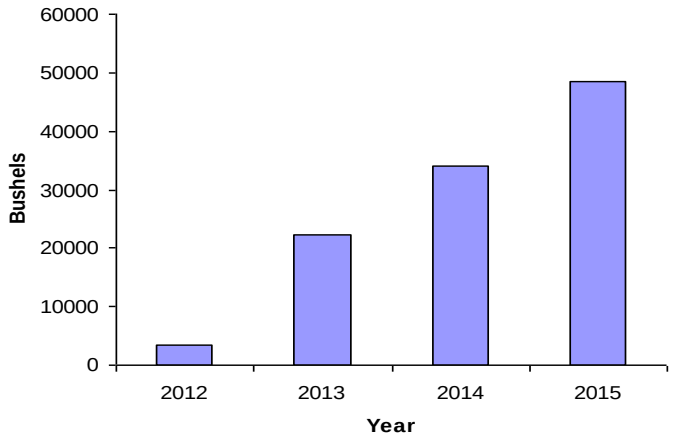
Lease Acreage By County

LeaseType	AA	CA	CH	DO	KE	QA	SM	SO	TA	WI	WO	Total
SLL	328.45	83.9	25	1287.9	44.8	42.7	649.35	465	576.79	742	142.7	4388.59
WC	4.1	15.06	0	89.01	3.9	10	94.11	24.7	5.5	0	35.08	281.46
Total	332.55	98.96	25	1376.9	48.7	52.7	743.46	489.7	582.29	742	177.78	4670.05

Lease Type By County

LeaseType	AA	CA	CH	DO	KE	QA	SM	SO	TA	WI	WO	Total
SLL	24	11	1	59	1	5	64	25	54	40	10	294
WC	2	2	0	19	1	2	22	6	1	0	8	63
Total	26	13	1	78	2	7	86	31	55	40	18	357

The graph below depicts the steady increase in the number of bushels of farm-raised oysters that have been harvested from shellfish leases over the period 2012-2015.



The Aquaculture Coordinating Council extends its sincere appreciation to Governor Hogan and the members of the Maryland General Assembly for the strong support that has been dedicated to assist in the development of this industry. In response to these efforts, Maryland aquaculture is positioned to provide significant benefits to our economy and the environment.

The Council has identified issues impacting the advancement of Maryland aquaculture and is providing recommendations from our bi-monthly meetings that provide a forum for discussion between the industry, state agencies and academia. The Council has a membership structure with wide and diverse experience and expertise on aquaculture issues that create solutions for identified needs. For our 2015 report, we respectfully submit the following issues and recommendations for consideration:

Issues

- **Disease Diagnostic Services**
  Shellfish diseases are a continuing critical problem for expanding aquaculture production. Diagnostic services are necessary for effective farm management but are constrained by lack of resources in the state laboratories that conduct the work. These laboratories need to 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 now regularly provide these services to their industry quickly and at a minimal cost.

- **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. Strong support for 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.

- **Financial Support Programs**
  Aquaculture is an inherently risky business and owners often have difficulty obtaining start-up capital through traditional lending institutions without having an historic record of production. This could prevent smaller operators, such as watermen from being able to secure the funds required to purchase equipment, seed and other resources needed for their aquaculture businesses. A continued commitment of providing State capital funding to MARBIDCO for administration of the Shellfish Aquaculture Loan Program will be a key component in the future development and expansion of this industry.

- **Water Quality Monitoring**
  The Maryland Department of the Environment (MDE) is responsible for carrying out federal (Title 21 Code of Federal Regulations part 123) and state (Natural Resources Article §4-742, Maryland Annotated Code) mandated bacteriological monitoring to ensure shellfish are harvested from unpolluted waters. Expansion of the oyster aquaculture industry is increasing the number of monitoring stations necessary to ensure adequate spatial coverage and protect public health. In addition, expansion of the aquaculture industry has resulted in year round oyster harvest, requiring additional resources to maintain sampling schedules.

In state fiscal year 2014, MDE was successful in getting one additional staff person for the increased monitoring effort. Based on MDE data and industry projections, the number of new aquaculture sites that will require MDE monitoring by land (for remote upstream regions) and boat (water-accessible areas) will continue to increase. Given the increasing demands on MDE's staff and equipment, resources to maintain and expand this important monitoring program is extremely important to Maryland's economy and the shellfish industry.

- **Ecosystem Service Credit for Shellfish Aquaculture**
  Maryland is currently in a position to dramatically move forward with policies that can be put in place to implement nutrient trading. The Council fully supports these efforts. The Maryland Department of Environment is represented on the Council and is in a unique position to promote and understand how to include oyster aquaculture in a nutrient trading framework.

  Recently the Chesapeake Bay Program, with support of state agencies, has formed an expert panel to evaluate the nutrient and sediment removal rates associated with oyster practices. The objectives of the panel are to establish a crediting framework that evaluates oyster practices and associated nutrient cycling processes on an individual basis, resolve outstanding policy questions, evaluate the suitability of modeling approaches to fill in current knowledge gaps, and to evaluate existing scientific information using the established crediting framework to determine nutrient reduction effectiveness of individual oyster practices. The Coordinating Council has been provided with a number of presentations on this issue and a great deal of scientific work has been accomplished providing evidence and quantifying the ecosystem services and nutrient removal provided by shellfish aquaculture. It is time for Maryland to move this issue forward.

- **Availability of Affordable Substrate**
  A critical limiting factor in the development of submerged land leases is the lack of shell with which to create a cost effective base upon which to plant spat-on-shell hatchery seed. Shell is required for the development of new submerged land as well as the enhancement and renovation of existing bottom. With it taking over 2,200 bushels to cover one acre an inch thick, there is a significant cost associated with stabilizing bottom, which quickly makes the development of new areas unprofitable unless affordable substrate is available. Until the processing industry returns to a production level where new shell is in abundant supply, the most cost effective solution to this problem is the recovery and use of existing shell deposits contained within the Chesapeake Bay. Several areas of investigation should be pursued recognizing the importance of having shell sources close to the final area of deposition.

- **Enhancement of the Joint State/Federal Shellfish Aquaculture Permit Process**
  The issuance of state shellfish leases and Department of Army Permits for commercial shellfish aquaculture activities includes a joint state/federal application process between the State of Maryland and the US Army Corps of Engineers, Baltimore District. While a Regional General Permit (RGP-1) has been issued that minimizes federal review required

for qualifying projects, there remains a significant disconnect between the review times and processes within the two agencies that leads to inordinate delays in permitting and the potential for loses in production and profitability for prospective leaseholders. This problem was recently addressed by Senator Mikulski with a high level Corps official and followed by a letter requesting investigation of the causes and a follow-up report. The Coordinating Council sent a letter thanking Senator Mikulski for her efforts and requesting to be kept apprised of identified solutions.

Recommendations

I. **Expand the Oxford Laboratory's aquaculture disease diagnostic services** by providing additional resources to hire a 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 their 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.

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

III. **Continue to provide capital funds** to financial assistance programs that have been established to aid development of the shellfish aquaculture industry through a continued commitment to providing affordable loan programs administered through the Maryland Agriculture and Resource Based Industries Development Corporation (MARBIDCO).

IV. **Support increased funding to MDE for monitoring shellfish waters to support the continuing expansion of Maryland's aquaculture industry.** MDE requires adequate staffing and equipment to support additional monitoring stations for new lease activity and to improve the ability to upgrade classifications when warranted. This is anticipated to result in more areas in the open status for direct harvest. These funds are vital for supporting the growing shellfish aquaculture industry and to maintain adequate monitoring and public health protections for both aquaculture and wild harvest of shellfish.

V. **Support Nutrient Trading.** The Council recommends that the Bay Cabinet agencies support the efforts under the Chesapeake Bay Program's (CBP) Water Quality Goal Implementation Team, of which MDE is Maryland's member, to evaluate and report, with sound science, the nutrient and sediment removal rates associated with oyster aquaculture practices by April 2016. The Council also recommends that all Bay Cabinet agencies support the application of the expert panel information to Maryland's water

quality trading program and use this to establish a policy for water quality trading credits generated from aquaculture activities.

VI. **Identify, survey and recover existing shell deposits contained within the Chesapeake Bay** in order to provide access to affordable substrate that can be used by Maryland leaseholders.

a. The application for a shell dredging permit in the area known as Man O'War Shoals in the upper Chesapeake Bay should be pursued as the Maryland General Assembly has previously directed, and provided with a proper hearing and evaluation based on the weight of scientific evidence. This area would provide growers with a timely and known source of shell that can be moved and emplaced to create habitat and gain productive growing areas for oysters throughout the Bay.

b. The Department of Natural Resources should work to locate other historic deposits of oyster shell that are known or believed to exist throughout the bay region. Therefore, the Council urges the Department to:

i. Locate and access any reports on investigation known to have taken place I the lower Bay in prior decades to ascertain areas that have already been surveyed and identified as containing quantities of shell that could be recovered.
ii. Undertake additional studies of potential areas of shell deposits, especially within the area of Tangier Sound, which could be made available for the construction of productive leases.

VII. **Develop procedures by which the permitting of commercial shellfish aquaculture activities can be expedited.** The Coordinating Council urges that leaders of the Maryland Department of Natural Resources and the US Army Corps of Engineers, Baltimore District develop and initiate a series of regularly scheduled meetings with the intent of identifying and implementing a more streamlined and expeditious state lease and federal permitting process. This should include the development of a permitting program such as that represented by the National Shellfish Sanitation Program whereby the state takes the lead in operating an approved permit process that is overseen by the federal agency with periodic audit.

MACC Membership

Aquaculture Coordinating Council membership is specified in law and represents agencies regulating and promoting the industry, research and extension units of the University of Maryland, both houses of the General Assembly, and members of the aquaculture and seafood industries. The Council meets bi-monthly in odd numbered months. The Council traditionally has one officer from agency/institution category while the other represents industry.

Members of the Maryland Aquaculture Coordinating Council

Mr. Karl Roscher, Aquaculture Division Director, Department of Natural Resources

Ms. Erin Butler, Chair, Department of Health and Mental Hygiene

Dr. Reginal Harrell, Vice-Chairman, University of Maryland

Senator Katherine Klausmeier, Maryland Senate

Delegate Anthony O'Donnell, Maryland House of Delegates

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

Mr. John Farrington, Johnny Oysterseed LLC, Aquaculture Industry

Ms. Terry Witt, Witt Seafood, Aquaculture Industry

Mr. Johnny Shockley, Hooper's Island Oyster Aquaculture Company, TFL

Mr. Ben Parks, Dorchester County, TFL

Mr. Andrew Buck, Patuxent Seafood, TFL

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

Mr. Don Webster, University of Maryland Extension

Captain Chris Sherman, Natural Resources Police

Ms. Joanna Kille, Department of Agriculture

Ms. Stacey Kubofcik, Department of Business and Economic Development

Ms. Kathy Brohawn, Department of the Environment