



STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
AND ENVIRONMENTAL CONTROL

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DOVER, DELAWARE 19901

OFFICE OF THE
SECRETARY

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Secretary's Order No.: 2014-F-0013

**RE: Approving Final New Regulations to
7 DE Admin. Code 3801, Shellfish Aquaculture**

Date of Issuance: July 15, 2014

Effective Date of the Amendment: August 11, 2014

Under the authority vested in the Secretary of the Department of Natural Resources and Environmental Control ("Department" or "DNREC") the following findings, reasons and conclusions are entered as an Order of the Secretary in the above-referenced rulemaking proceeding.

Background and Procedural History

This Order considers proposed *revised* new regulations, to wit: 7 DE Admin. Code 3801, *Shellfish Aquaculture*. The Department's Division of Fish and Wildlife commenced the regulatory development process with Start Action Notice 2014-04. The Department published its initial proposed new regulation in the May 1, 2014 *Delaware Register of Regulations*, and held a public hearing on May 21, 2014.

These new regulations provide for a shellfish aquaculture industry in Delaware's Inland Bays that is compatible with commercial and recreational finfishing and shellfishing, boating navigation and public safety, public water access and use, and native

Delaware's Good Nature depends on you!

biota. Specifically, these proposed new regulations provide a structured process and set conditions for leasing of subaqueous bottom within Delaware's Inland Bays for the culture of bivalve shellfish.

With regard to the requirements for said leasing, the regulations proposed include considerations for application, location, issuance, marking, renewal, transfer, expiration, termination, condemnation, and emergency relocation. Additionally, said regulations further propose measures related to shellfish aquaculture gear and marking, shellfish nursery permitting and structures, harvester license qualifications, bivalve species authorized for aquaculture, activities within subaqueous lease areas, and shellfish aquaculture reporting requirements.

The aforementioned regulations were developed by the Department with significant stakeholder input, beginning in 2012 with the establishment of the Center for the Inland Bays Tiger Team. This Tiger Team was comprised of multiple stakeholders and interests, including (but certainly not limited to) staff members from the Center for the Inland Bays, aquaculture interests, commercial clamming interests, recreational interests, representatives from the University of Delaware Sea Grant Program, the Sussex County Economic Development Office, the Shellfish Advisory Council, and the Department's Divisions of Water, Watershed Stewardship, and Fish and Wildlife. Between May 1, 2012 and February 2013, the Tiger Team convened ten public meetings and two information gathering meetings, all culminating in a final report which was presented before the Advisory Council of Shellfisheries on March 28, 2013. The Department also met with the U.S. Army Corp of Engineers ("USACE") during the course of the regulatory development process, in order to streamline the permitting

process and to determine exactly what would be required of Applicants seeking to lease subaqueous bottom within Delaware's Inland Bays for the culture of bivalve shellfish.

The Department has recognized throughout the development of these proposed new regulations that there are numerous different perspectives on the issue of establishing shellfish aquaculture here in Delaware, and all such input was highly valued and taken into consideration during the regulatory development process. It should also be noted, however, that the decision to establish shellfish aquaculture in Delaware's Inland Bays was made by the passage of House Bill 160 by the 147th General Assembly. The purpose of these proposed new regulations is to implement the intent of House Bill 160 by creating an aquaculture industry in Delaware that provides jobs and economic benefits to the citizens of this state, while potentially reducing nutrients in the Inland Bays. At the same time, these proposed new regulations also serve to ensure the compatibility with Delaware's boating and fishing uses of the Inland Bays, while enabling the Department to protect and to sustain Delaware's native species, including its robust hard clam population.

The Department has the statutory basis and legal authority to act with regard to these aforementioned proposed new regulations, pursuant to 7 Del. C. §§2002, 2005(a), 2006(d & e), and 7 Del. C., Chapter 60. Public comment was received by the Department regarding this proposed promulgation, and the same was thoroughly addressed and responded to by the Division of Fish & Wildlife in its formal Technical Response Memorandum dated July 7, 2014. Proper notice of the hearing was provided as required by law.

The Department's presiding hearing officer, Lisa A. Vest, prepared a Hearing Officer's Report, dated July 10, 2014 ("Report"), which recommends certain findings and the adoption of the proposed *revised* regulations, as attached to the Report as Appendix A.

Findings and Discussion

As noted previously, House Bill 160 provided the Department the authority to promulgate these proposed new regulations regarding shellfish aquaculture in Delaware's Inland Bays. The Department stressed in its presentation at the hearing that the purpose of these proposed regulations is to support an *industry* of shellfish aquaculture in Delaware. It is *not* to establish shellfish aquaculture and leasing for speculation, nor for a personal hobby.

That being said, House Bill 160 also provided the Department with some constraints to work within, including (but not limited to) that leases must be compatible with both commercial and recreational finfishing and shellfishing, boating navigation and safety, public water access and use, and native biota. Additionally, the legislation required that shellfish aquaculture be conducted in a manner to prevent and control the spread of shellfish borne diseases among both shellfish aquaculture products and wild shellfish, and that shellfish aquaculture must provide for the conservation, preservation, and improvement of the wild shellfish resources of the Inland Bays. Furthermore, leases must not, in both Rehoboth Bay and Indian River Bay, exceed 5% of their respective total subaqueous lands, and 10% for the Little Assawoman Bay.

Some of the points that were considered within the legislation passed by the 147th General Assembly were that leases must be issued in one-acre increments, must generally

be rectangular, and that leases must initially be issued by lottery and subsequently on a first-come, first-served basis thereafter. Fees and renewals were also established by the legislation, as were the penalties for violations of both the Delaware Code and the Department's regulations.

Throughout the regulatory development process regarding this particular promulgation, the Department received numerous public comments, as noted in the Report. After the hearing record closed with respect to public comment on June 5, 2014, an exhaustive review of the same was undertaken by the Department's Division of Fish & Wildlife. This comprehensive review subsequently yielded a formal Technical Response Memorandum, dated July 7, 2014, which the Hearing Officer then expressly incorporated into her Report.

The aforementioned Technical Response Memorandum addressed the full range of comment contained in the record concerning this matter. Each comment was meticulously organized and grouped according its subject matter, followed by a thorough and rational discussion of the issue based upon the record developed in this promulgation. Following the discussion of each subject matter, the Division of Fish & Wildlife offered its recommendation as to what the position of the Department should be with respect to each issue. In most instances, the Division believed that no changes to the Department's proposed amendments were warranted. There were, however, two specific instances where the Division proposed to *revise* the wording as set forth in its initial proposed regulation, to wit: (1) minor revisions to Section 3.1.5 were necessary following conversations with the USACE, to provide additional clarity and correct clerical error; and (2) additional language was added to Section 14.2 to allow greater flexibility in lease

marking and to provide clarification of the same, in consideration of the public comment received in this matter.

I find that the Department's experts in the Division of Fish and Wildlife fully developed the record to support adoption of these *revised* proposed regulations. I find that the *revised* proposed regulations are well-supported by the record developed by the Department, and I adopt the Report to the extent it is consistent with this Order. I also find that the proposed *revisions* to the Department's new regulation, to wit: 7 DE Admin. Code 3801, *Shellfish Aquaculture*, are not substantive in nature, and thus no additional vetting of these proposed regulatory amendments is necessary at this time.

With the adoption of this Order, Delaware will be enabled to implement the intent of House Bill 160 by creating an aquaculture industry here in Delaware that provides jobs and economic benefits to the citizens of this state, while potentially reducing nutrients in the Inland Bays. At the same time, these proposed new regulations also serve to ensure the compatibility with Delaware's boating and fishing uses of the Inland Bays, while enabling the Department to protect and to sustain Delaware's native species, including its robust hard clam population.

In conclusion, the following findings and conclusions are entered:

- 1.) The Department has jurisdiction under its statutory authority to issue an Order adopting these *revised* proposed new regulations as final;
- 2.) The Department provided adequate public notice of the proposed new regulations, and provided the public with an adequate opportunity to comment on the same, including at the public hearing held on May 21, 2014;

3.) The Department held a public hearing on May 21, 2014 in order to consider public comment before making any final decision;

4.) The Department's Hearing Officer's Report, including its recommended record and the recommended *revised* new regulations as set forth in Appendix A, and the Technical Response Memorandum as set forth in Appendix B, are adopted to provide additional reasons and findings for this Order;

5.) The recommended *revised* new regulations should be adopted as final new regulations because Delaware will be able to (1) provide for a shellfish aquaculture industry in Delaware's Inland Bays that is compatible with commercial and recreational finfishing and shellfishing, boating navigation and public safety, public water access and use; (2) provide a structured process and set conditions for leasing of subaqueous bottom within Delaware's Inland Bays for the culture of bivalve shellfish; and, lastly, because (3) the *revised* new regulations are well supported by documents in the record;

6.) The Department shall submit this Order approving the final new regulation to the *Delaware Register of Regulations* for publication in its next available issue, and provide such other notice as the law and regulation require and the Department determines is appropriate.



David S. Small
Secretary

HEARING OFFICER'S REPORT

TO: The Honorable David S. Small
Cabinet Secretary, Department of Natural Resources and Environmental Control

FROM: Lisa A. Vest
Public Hearing Officer, Office of the Secretary
Department of Natural Resources and Environmental Control

RE: **Proposed New Regulations: 7 DE Admin. Code 3801, Shellfish Aquaculture**

DATE: July 10, 2014

I. BACKGROUND AND PROCEDURAL HISTORY:

A public hearing was held on Wednesday, May 21, 2014, at 6:00 p.m. at the Department of Natural Resources and Environmental Control (“DNREC”, “Department”), 901 Pilottown Road, DNREC Shoreline and Waterway Services Facility Building, Lewes, Delaware to receive comment on proposed new regulations, to wit: 7 DE Admin. Code 3801, *Shellfish Aquaculture*. These new regulations provide for a shellfish aquaculture industry in Delaware’s Inland Bays that is compatible with commercial and recreational finfishing and shellfishing, boating navigation and public safety, public water access and use, and native biota. Specifically, these proposed new regulations provide a structured process and set conditions for leasing of subaqueous bottom within Delaware’s Inland Bays for the culture of bivalve shellfish.

With regard to the requirements for said leasing, the regulations proposed include considerations for application, location, issuance, marking, renewal, transfer, expiration, termination, condemnation, and emergency relocation. Additionally, said regulations further propose measures related to shellfish aquaculture gear and marking, shellfish nursery permitting and structures, harvester license qualifications, bivalve species authorized for aquaculture, activities within subaqueous lease areas, and shellfish aquaculture reporting requirements.

The aforementioned proposed regulations were developed by the Department with significant stakeholder input, beginning in 2012 with the establishment of the Center for the Inland Bays Tiger Team. This Tiger Team was comprised of multiple stakeholders and interests, including (but certainly not limited to) staff members from the Center for the Inland Bays, aquaculture interests, commercial clamming interests, recreational interests, representatives from the University of Delaware Sea Grant Program, the Sussex County Economic Development Office, the Shellfish Advisory Council, and the Department's Divisions of Water, Watershed Stewardship, and Fish and Wildlife. Between May 1, 2012 and February 2013, the Tiger Team convened ten public meetings and two information gathering meetings, all culminating in a final report which was presented before the Advisory Council of Shellfisheries on March 28, 2013. The Department also met with the U.S. Army Corp of Engineers ("USACE") during the course of the regulatory development process, in order to streamline the permitting process and to determine exactly what would be required of Applicants seeking to lease subaqueous bottom within Delaware's Inland Bays for the culture of bivalve shellfish.

The Department has recognized throughout the development of these proposed new regulations that there are numerous different perspectives on the issue of establishing shellfish aquaculture here in Delaware, and all such input was highly valued and taken into consideration during the regulatory development process. It should also be noted, however, that the decision to establish shellfish aquaculture in Delaware's Inland Bays was made by the passage of House Bill 160 by the 147th General Assembly. The purpose of these proposed new regulations is to implement the intent of House Bill 160 by creating an aquaculture industry in Delaware that provides jobs and economic benefits to the citizens of this state, while potentially reducing nutrients in the Inland Bays. At the same time, these proposed new regulations also serve to

ensure the compatibility with Delaware's boating and fishing uses of the Inland Bays, while enabling the Department to protect and to sustain Delaware's native species, including its robust hard clam population.

The Department has the statutory basis and legal authority to act with regard to these aforementioned proposed new regulations, pursuant to 7 Del. C. §§2002, 2005(a), 2006(d & e), and 7 Del. C., Chapter 60.

Comment was received by the Department regarding this proposed promulgation, and the same will be discussed in detail below. Proper notice of the hearing was provided as required by law.

II. SUMMARY OF THE PUBLIC HEARING RECORD:

The public hearing record consists of the following documents: (1) a verbatim transcript; (2) thirty documents introduced at the public hearing held on May 21, 2014, and marked by this Hearing Officer accordingly as Department Exhibits 1-30; (3) written comment submitted by members of the public at the time of the aforementioned public hearing, as follows: from Christopher Bason, Executive Director of the Delaware Center for the Inland Bays, marked accordingly as "Bason/DE Inland Bays, Exh. #1"; and from John Thompson, marked accordingly as "Thompson Exh. #2"; (4) numerous individual public comments received subsequent to the public hearing of May 21, 2014, but prior to the close of the hearing record on June 5, 2014; and (5) the Technical Response Memorandum from responsible staff of the Department's Division of Fish & Wildlife, dated July 7, 2014, and received by this Hearing Officer on July 10, 2014. The Department's persons primarily responsible for the drafting and overall promulgation of these proposed regulations, Stewart Michels (Program Manager II), John

Clark (Fisheries Administrator), and David Saveikis, Director of the Department's Division of Fish & Wildlife, all developed the record with the relevant documents in the Department's files.

Subsequent to the submission of the Department's exhibits into the record at the hearing held on May 21, 2014, the Department proceeded to offer its presentation for the benefit of the record, which contained a very thorough overview of the regulatory process undertaken by the Department at this time, in order to provide a greater understanding of the same by those members of the public in attendance that evening. As noted previously, House Bill 160 provided the Department the authority to promulgate these proposed new regulations regarding shellfish aquaculture in Delaware's Inland Bays. The Department stressed in its presentation at the hearing that the purpose of these proposed regulations is to support an *industry* of shellfish aquaculture in Delaware. It is *not* to establish shellfish aquaculture and leasing for speculation, nor for a personal hobby.

That being said, House Bill 160 also provided the Department with some constraints to work within, including (but not limited to) that leases must be compatible with both commercial and recreational finfishing and shellfishing, boating navigation and safety, public water access and use, and native biota. Additionally, that shellfish aquaculture shall be conducted in a manner to prevent and control the spread of shellfish borne diseases among both shellfish aquaculture products and wild shellfish, and that shellfish aquaculture must provide for the conservation, preservation, and improvement of the wild shellfish resources of the Inland Bays. Furthermore, leases must not, in both Rehoboth Bay and Indian River Bay, exceed 5% of their respective total subaqueous lands, and 10% for the Little Assawoman Bay.

Some of the points that were considered within the legislation passed by the 147th General Assembly were that leases must be issued in one-acre increments, must generally be

rectangular, and that leases must initially be issued by lottery and subsequently on a first-come, first-served basis thereafter. Fees and renewals were also established by the legislation, as were the penalties for violations of both the Delaware Code and the Department's regulations.

Following the Department's very detailed presentation regarding these proposed regulations, comments were received from the general public who were in attendance at the aforementioned public hearing. The hearing record remained open following the conclusion of the hearing, to allow for additional public comment regarding this promulgation to be submitted to the Department. The record formally closed with respect to additional public comment being received by the Department in this matter at close of business on June 6, 2014. Following the closing of the hearing record with regard to public comment, the Department's Division of Fish & Wildlife initiated an exhaustive review of all comment that had been received, and began to prepare its Technical Response Memorandum ("TRM") regarding said comments for inclusion into the record developed in this matter. In its TRM, dated July 7, 2014, the comments and concerns about this proposed promulgation received by the Department were carefully addressed and grouped by general topic area, and then fully addressed by the Division of Fish & Wildlife.

Following the discussion of each subject matter within the TRM, the Division of Fish & Wildlife offered its recommendation as to what the position of the Department should be with respect to each issue. In most instances, the Division believed that no changes to the Department's proposed amendments were warranted. There were, however, two specific instances where the Division proposed to *revise* the wording as set forth in its initial proposed regulation, to wit: (1) minor revisions to Section 3.1.5 were necessary following conversations with the USACE, to provide additional clarity and correct clerical error; and (2) additional language was added to Section 14.2 to allow greater flexibility in lease marking and to provide

clarification of the same, in consideration of the public comment received in this matter. It is the Division's position that the proposed *revisions* to the Department's initial proposed new regulations are not substantive in nature, and thus no additional vetting of the proposed regulations is necessary at this time.

For the Secretary's review, and in order for the Secretary to gain a thorough understanding of this proposed promulgation, a copy of the above-referenced proposed *revised* regulations is attached hereto as Appendix "A", and the same is expressly incorporated into this Hearing Officer's Report at this time. Furthermore, a copy of the Division of Fish & Wildlife's aforementioned Technical Response Memorandum is attached hereto as Appendix "B", and the same is expressly incorporated into this Report as well. It should be noted that the Department adhered to all appropriate Delaware statutes and the regulatory development process in this matter, and that the Department has met the required public notice obligations regarding these proposed amendments. It should also be noted that the Department has reviewed this proposed promulgation in the light of the Regulatory Flexibility Act, and believes the same to be lawful, feasible and desirable, and that the recommendations as proposed should be applicable to all Delaware citizens equally.

III. RECOMMENDED FINDINGS AND CONCLUSIONS:

Based on the record developed, I find and conclude that the Department has provided appropriate reasoning regarding the need for the proposed *revised* new regulations, to wit: 7 DE Admin. Code 3801, *Shellfish Aquaculture*, as noted above. Accordingly, I recommend promulgation of these proposed new regulations in the customary manner provided by law.

Further, I recommend the Secretary adopt the following findings and conclusions:

1. Proper notice of the hearing was provided as required by law.
2. The Department has jurisdiction under its statutory authority to make a determination in this proceeding;
3. The Department provided adequate public notice of all proceedings in a manner required by the law and regulations;
4. The Department held its public hearing in a manner required by the law and regulations;
5. The Department considered all timely and relevant public comments in making its determination;
6. Promulgation of the proposed *revised* new regulation 7 DE Admin. Code 3801, *Shellfish Aquaculture*, will enable Delaware to (1) provide for a shellfish aquaculture industry in Delaware's Inland Bays that is compatible with commercial and recreational finfishing and shellfishing, boating navigation and public safety, public water access and use; and (2) provide a structured process and set conditions for leasing of subaqueous bottom within Delaware's Inland Bays for the culture of bivalve shellfish;
7. With regard to the requirements for said leasing, the regulations as proposed include considerations for application, location, issuance, marking, renewal, transfer, expiration, termination, condemnation, and emergency relocation. Additionally, said regulations further propose measures related to shellfish aquaculture gear and marking, shellfish nursery permitting and structures, harvester license qualifications,

bivalve species authorized for aquaculture, activities within subaqueous lease areas, and shellfish aquaculture reporting requirements;

8. These proposed new regulations will implement the intent of House Bill 160 by creating an aquaculture industry here in Delaware that provides jobs and economic benefits to the citizens of this state, while potentially reducing nutrients in the Inland Bays. At the same time, these proposed new regulations also serve to ensure the compatibility with Delaware's boating and fishing uses of the Inland Bays, while enabling the Department to protect and to sustain Delaware's native species, including its robust hard clam population;
9. The Department has reviewed these proposed *revised* new regulations in the light of the Regulatory Flexibility Act, and believes the same to be lawful, feasible and desirable, and that the recommendations as proposed should be applicable to all Delaware citizens equally;
10. The Department's aforementioned proposed *revised* new regulations concerning *Shellfish Aquaculture*, as published in the May 1, 2014 *Delaware Register of Regulations* and as subsequently *revised* and set forth in Appendix "A" hereto, are adequately supported, are not arbitrary or capricious, and are consistent with the applicable laws and regulations. Consequently, they should be approved as final new regulations, which shall go into effect ten days after their publication in the next available issue of the *Delaware Register of Regulations*; and

11. The Department shall submit the proposed *revised* new regulations as final regulations to the *Delaware Register of Regulations* for publication in its next available issue, and shall provide such other notice as the law and regulations require, and as the Department determines is appropriate .



LISA A. VEST
Public Hearing Officer

APPENDIX "A"

3801 Shellfish Aquaculture

1.0 Introduction

These regulations provide for a shellfish aquaculture industry in Delaware's Inland Bays that is compatible with commercial and recreational finfishing and shellfishing, boating navigation and public safety, public water access and use, and native biota. Specifically, the regulations provide a structured process and set conditions for leasing of subaqueous bottom within Delaware's Inland Bays for the culture of bivalve shellfish. The regulations include requirements for lease: application, locations, issuance, marking, renewal, transfer, expiration, termination, condemnation and emergency relocation. The regulations further propose measures related to: shellfish aquaculture gear and marking, shellfish nursery permitting and structures, harvester license qualifications, bivalve species authorized for aquaculture, activities within subaqueous lease areas, and shellfish aquaculture reporting requirements.

2.0 Definitions

The following words and terms, when used in this regulation, have the following meaning unless the context clearly indicates otherwise:

"Aquaculture activities" means those activities which include the purchase, monitoring, planting, sale, possession, harvest, production, breeding, transportation, and processing of shellfish.

"Culture" means to cultivate bivalve shellfish at any life stage.

"Farm gate" means the dollar value paid for a cultivated product upon harvest.

"Lessee" or "leaseholder" means that person, persons, or entity, lawfully granted a Shellfish Aquaculture Subaqueous Land Lease in Delaware's Inland Bays.

"Navigation corridor" means the 20-foot tract of subaqueous land that is established between two adjacent one (1) acre shellfish aquaculture leases.

"Non-Shellfish Aquaculture Development Area" or "Non-SADA" means that area of Delaware's Inland Bays outside of the boundaries of the SADA designated by the Department for the purpose of shellfish aquaculture. "Shellfish Aquaculture Development Area" or "SADA" means those areas of Delaware's Inland Bays designated by the Department for the purpose of shellfish aquaculture. These distinct areas are named and their corner coordinates described for the Inland Bays as follows:

Rehoboth Bay

RB-A	<u>38°39'24.0983"N, 075°04'42.58199"W and 38°39'17.11895"N, 075°04'42.61481"W and</u>
	<u>38°39'17.11061"N, 075°04'39.73191"W and 38°39'12.78715"N, 075°04'39.75229"W and</u>
	<u>38°39'12.79550"N, 075°04'42.6351"W and 38°39'06.01377"N, 075°04'42.66701"W and</u>
	<u>38°39'06.02967"N, 075°04'48.18045"W and 38°39'10.55082"N, 075°04'48.15929"W and</u>
	<u>38°39'10.58385"N, 075°04'59.69059"W and 38°39'15.10500"N, 075°04'59.66963"W and</u>
	<u>38°39'15.12139"N, 075°05'05.43538"W and 38°39'23.96600"N, 075°05'05.39457"W and</u>
	<u>38°39'23.94138"N, 075°04'56.74566"W and 38°39'42.02597"N, 075°04'56.66160"W and</u>
	<u>38°39'41.94333"N, 075°04'28.08202"W and 38°39'30.83816"N, 075°04'28.13487"W and</u>
	<u>38°39'30.85499"N, 075°04'33.90096"W and 38°39'28.59442"N, 075°04'33.91166"W and</u>
	<u>38°39'28.61117"N, 075°04'39.67771"W and 38°39'24.09002"N, 075°04'39.69902"W.</u>
RB-B	<u>38°38'58.38782"N, 075°07'50.24403"W and 38°39'02.71130"N, 075°07'50.22684"W and</u>
	<u>38°39'02.69716"N, 075°07'44.46135"W and 38°39'04.95775"N, 075°07'44.45231"W and</u>
	<u>38°39'04.95065"N, 075°07'41.56953"W and 38°39'07.21124"N, 075°07'41.56047"W and</u>
	<u>38°39'07.19761"N, 075°07'36.04698"W and 38°38'56.09237"N, 075°07'36.09174"W and</u>
	<u>38°38'56.11310"N, 075°07'44.48767"W and 38°38'58.37369"N, 075°07'44.47863"W.</u>
RB-C	<u>38°38'53.28583"N, 075°05'04.59609"W and 38°38'53.26192"N, 075°04'56.20029"W and</u>
	<u>38°38'46.67787"N, 075°04'56.23089"W and 38°38'46.68610"N, 075°04'59.11345"W and</u>
	<u>38°38'37.44610"N, 075°04'59.15628"W and 38°38'37.43787"N, 075°04'56.27383"W and</u>
	<u>38°38'30.85382"N, 075°04'56.30442"W and 38°38'30.86205"N, 075°04'59.18680"W and</u>
	<u>38°38'26.34089"N, 075°04'59.20776"W and 38°38'26.34909"N, 075°05'02.09010"W and</u>
	<u>38°38'17.10907"N, 075°05'02.13282"W and 38°38'17.10087"N, 075°04'59.25059"W and</u>
	<u>38°38'14.84028"N, 075°04'59.26106"W and 38°38'14.83206"N, 075°04'56.37886"W and</u>
	<u>38°38'05.98742"N, 075°04'56.41995"W and 38°38'06.00314"N, 075°05'01.93211"W and</u>
	<u>38°38'12.78489"N, 075°05'01.90075"W. and 38°38'12.80939"N, 075°05'10.54730"W and</u>
	<u>38°38'41.99926"N, 075°05'10.41327"W and 38°38'41.98294"N, 075°05'04.64826"W.</u>

Indian River Bay

IR-A	<u>38°35'20.40778"N, 075°10'28.80060"W</u>	and	<u>38°34'57.99926"N, 075°10'28.87580"W</u>	and	<u>38°34'58.03995"N, 075°10'48.78422"W</u>	and	<u>38°35'00.30057"N, 075°10'48.77681"W</u>	and	<u>38°35'00.31217"N, 075°10'54.53694"W</u>	and	<u>38°35'07.09404"N, 075°10'54.51485"W</u>	and	<u>38°35'07.11126"N, 075°11'03.13978"W</u>	and	<u>38°35'13.69546"N, 075°11'03.13405"W</u>	and	<u>38°35'13.66661"N, 075°10'48.73298"W</u>	and	<u>38°35'20.44847"N, 075°10'48.71073"W.</u>				
IR-B	<u>38°35'00.26136"N, 075°04'02.56002"W</u>	and	<u>38°34'49.15605"N, 075°04'02.61381"W</u>	and	<u>38°34'49.16463"N, 075°04'05.49372"W</u>	and	<u>38°34'46.90403"N, 075°04'05.50465"W</u>	and	<u>38°34'46.92040"N, 075°04'11.01257"W</u>	and	<u>38°34'49.18100"N, 075°04'11.00170"W</u>	and	<u>38°34'49.18952"N, 075°04'13.88161"W</u>	and	<u>38°34'51.45012"N, 075°04'13.87076"W</u>	and	<u>38°34'51.45863"N, 075°04'16.75070"W</u>	and	<u>38°34'58.04274"N, 075°04'16.71917"W</u>	and	<u>38°34'58.02571"N, 075°04'10.95914"W</u>	and	<u>38°35'00.28631"N, 075°04'10.94827"W.</u>

Little Assawoman Bay

LA-B	<u>38°28'45.39471"N, 075°03'31.72841"W</u>	and	<u>38°28'45.42021"N, 075°03'40.10457"W</u>	and	<u>38°29'19.13206"N, 075°03'39.93894"W</u>	and	<u>38°29'19.12332"N, 075°03'37.06268"W</u>	and	<u>38°29'23.64459"N, 075°03'37.04041"W</u>	and	<u>38°29'23.61901"N, 075°03'28.66303"W</u>	and	<u>38°29'16.83711"N, 075°03'28.69665"W</u>	and	<u>38°29'16.81946"N, 075°03'22.94418"W</u>	and	<u>38°29'01.19271"N, 075°03'23.02199"W</u>	and	<u>38°29'01.21916"N, 075°03'31.65017"W.</u>
LA-C	<u>38°28'33.59037"N, 075°03'29.66689"W</u>	and	<u>38°28'33.55579"N, 075°03'18.41536"W</u>	and	<u>38°28'22.45029"N, 075°03'18.47082"W</u>	and	<u>38°28'22.48487"N, 075°03'29.72187"W.</u>												
LA-D	<u>38°28'15.47068"N, 075°03'18.50567"W</u>	and	<u>38°28'04.36517"N, 075°03'18.56112"W</u>	and	<u>38°28'04.40853"N, 075°03'32.68683"W</u>	and	<u>38°28'15.51403"N, 075°03'32.63198"W.</u>												

"Shellfish aquaculture gear" means any cage, rack, tray, or other similar device for holding and protecting oysters or clams, including any bags, containers, nets, or floating container.

"Shellfish Nursery Structures" means any structure or container, such as an upweller, downweller or raceway in Delaware's Inland Bays used to culture 1,000 or more bivalve shellfish at one physical address, and not located in a lawful Shellfish Aquaculture Subaqueous Land Lease.

"Submerged aquatic vegetation" or "SAV" means any rooted, vascular submerged plants.

3.0 Shellfish Aquaculture Subaqueous Land Lease Issuance

- 3.1 The Department shall not issue a shellfish aquaculture land lease within the boundaries of a SADA without:
 - 3.1.1 a complete and accepted SADA Shellfish Aquaculture Subaqueous Land Lease Application;
 - 3.1.2 required field assessments of each proposed one-acre plot indicating a mean density of less than two (2) hard clams per square yard per acre;
 - 3.1.3 evidence of the required performance bond;
 - 3.1.4 evidence of the required liability coverage;
 - 3.1.5 [An a joint Department and] Army Corps of Engineers permit [application]; and
 - 3.1.6 full payment of all application and lease fees.
- 3.2 The Department shall not issue a Shellfish Aquaculture Subaqueous Land Lease for areas extending beyond or entirely outside the boundaries of a SADA without:
 - 3.2.1 a complete and accepted Non-SADA Shellfish Aquaculture Subaqueous Land Lease Application;
 - 3.2.2 required field assessments of each proposed one-acre plot indicating a mean density of less than two (2) hard clams per square yard per acre;
 - 3.2.3 consideration of public comment;
 - 3.2.4 all required state and federal permits;
 - 3.2.5 evidence of the required performance bond;
 - 3.2.6 evidence of the required liability coverage;
 - 3.2.7 evidence that the proposed lease boundaries are at least 150 feet from existing marked navigational channels; and
 - 3.2.8 full payment of all application and lease fees.
- 3.3 The Department shall not issue a Shellfish Aquaculture Subaqueous Land Lease to persons under 18 years of age.

- 3.4 Applicants denied leases may contest the Department's decision by requesting a review by the Environmental Appeals Board, to be filed no later than 30 days after the Department's written denial of lease.

4.0 SADA Shellfish Aquaculture Subaqueous Land Lease Application

- 4.1 The components of a SADA Shellfish Aquaculture Subaqueous Land Lease Application must include and fully address subsections 4.2 through 4.4.
- 4.2 A complete and accurate Shellfish Aquaculture Subaqueous Land Lease Application form.
- 4.3 A complete and accurate operations plan:
- 4.3.1 An operations plan shall include a complete and accurate description of the location and size of the proposed lease area.
- 4.3.2 An operations plan shall identify the species being managed or cultivated within the proposed lease area and over which the applicant shall have exclusive right to culture bivalve shellfish over the term of the lease.
- 4.3.3 An operations plan shall provide a complete and accurate description of the method and manner of management or cultivation to be performed within the proposed lease area.
- 4.3.4 An operations plan shall provide a complete and accurate description of gear to be used within the proposed lease area and include a schematic of the overhead view and cross-sectional elevation view of the gear and mooring equipment being deployed within the proposed lease area.
- 4.3.5 An operations plan shall address compatibility of the proposed operation with other existing uses to include navigation, recreation and fisheries, as well as compatibility with existing Shellfish Aquaculture Subaqueous Land Leases adjacent to the proposed lease area.
- 4.3.6 An operations plan shall completely and accurately identify the safety and security equipment used on the lease, including appropriate markings of the equipment and lease boundaries.
- 4.4 A complete and accurate shellfish aquaculture business plan.
- 4.4.1 A shellfish aquaculture business plan shall include a timeline indicating anticipated planting of shellfish stock, tending and grow-out period, and the anticipated time of harvest.
- 4.4.2 A shellfish aquaculture business plan shall include the anticipated cost of shellfish stock by species, a full description of shellfish aquaculture equipment, and a full description of any off-lease facilities that might be used.
- 4.4.3 A shellfish aquaculture business plan shall demonstrate that sufficient financial resources are available to operate and maintain all aspects of the proposed aquaculture activities. Any one (1) of the following are acceptable submissions for assessing financial capabilities:
- 4.4.3.1 A letter from a financial institution or funding agency showing intent or willingness to commit a specified amount of funding to support the proposed aquaculture activities.
- 4.4.3.2 The most recent corporate annual financial report and supporting documents indicating sufficient funds to finance the proposed aquaculture activities.
- 4.4.3.3 Copies of bank statements or other evidence indicating availability of unencumbered funds.
- 4.4.3.4 Proof that equipment or shellfish stock are available to the applicant to support the proposed aquaculture activities.
- 4.4.4 A shellfish aquaculture business plan shall include a resume or other documentation as evidence of technical expertise and capability to accomplish the proposed project.
- 4.5 The Department may not release or make public any shellfish aquaculture business plan financial information submitted to the Department for application review, except in aggregate or summary form which does not directly or indirectly disclose the business of any person who submits such information, or as provided by court order.
- 4.6 The Department shall evaluate the SADA Shellfish Aquaculture Subaqueous Land Lease Application.
- 4.6.1 Upon acceptance of a complete SADA Shellfish Aquaculture Subaqueous Land Lease Application, the Department shall perform a field assessment of the proposed lease site.
- 4.6.2 The Department shall provide the basis for rejection of a SADA Shellfish Aquaculture Subaqueous Land Lease Application in writing.

5.0 Non-SADA Subaqueous Land Lease Application

- 5.1 The Department shall consider lease applications for subaqueous lands situated wholly or

partially beyond the boundaries of a SADA; however, the applicant bears the burden and full monetary responsibility for demonstrating to the Department's satisfaction that the proposed activities on the subaqueous lands applied for are compatible with commercial and recreational fishing, boating navigation and safety, public water access and use, and native biota.

5.2 The components of a Non-SADA Shellfish Aquaculture Subaqueous Land Lease Application shall include and fully address subsections 5.2.1 through 5.2.4.

5.2.1 A complete and accurate Shellfish Aquaculture Subaqueous Land Lease Application form.

5.2.2 A complete and accurate operations plan according to the criteria identified under subsection 4.3.

5.2.3 A complete and accurate shellfish aquaculture business plan according to the criteria identified under subsection 4.4.

5.2.4 A complete and accurate Non-SADA Supplemental Materials Attachment which shall include:

5.2.4.1 A map or nautical chart depicting the boundaries of the proposed lease, associated depths at mean low water, and coordinates (latitude and longitude dd/mm/ss.ss) for the proposed lease corners.

5.2.4.1.1 Proposed Non-SADA lease boundaries must be designed as individual square one-acre plots.

5.2.4.1.2 Proposed Non-SADA leases greater than one acre must reflect a 20 foot navigation channel between adjacent square one-acre parcels.

5.2.4.2 A full description of the proximity of the proposed lease area to any marked or maintained navigation channels and the nearest shoreline.

5.2.4.3 The names and addresses of riparian land owners whose property is within 150 feet of the proposed lease area.

5.2.4.4 A full description of the proximity of the proposed lease site to submerged aquatic vegetation (SAV), including a description and estimate of coverage of any SAV within the boundaries of the proposed lease.

5.2.4.5 A full description of the proximity of the lease site to any prohibited, conditionally approved, or seasonally approved Shellfish Growing Areas, as classified by Delaware Shellfish and Recreational Water Programs.

5.2.4.6 A written assessment of existing recreational and commercial uses of the proposed lease area.

5.2.5 The Department shall evaluate the Non-SADA Shellfish Aquaculture Subaqueous Land Lease Application.

5.2.5.1 Upon acceptance of a complete Non-SADA Shellfish Aquaculture Subaqueous Land Lease Application, the Department shall perform a field assessment of the proposed lease site.

5.2.5.2 The Department shall provide the basis for rejection of a Non-SADA Shellfish Aquaculture Subaqueous Land Lease Application to the applicant in writing.

5.2.6 A copy of a lawfully issued U.S. Army Corps of Engineers permit authorizing shellfish aquaculture activities within the boundaries of the proposed lease site is required to be submitted to the Department before an aquaculture lease will be issued.

5.2.7 A copy of a lawfully issued Delaware Wetlands and Subaqueous Lands Lease authorizing shellfish aquaculture activities within the boundaries of the proposed lease site is required to be submitted to the Department before an aquaculture lease will be issued.

6.0 Shellfish Aquaculture Subaqueous Land Lease Application Field Assessment

6.1 Upon the Department's acceptance of a complete SADA or Non-SADA Shellfish Aquaculture Subaqueous Land Lease Application, the Department shall perform a field evaluation of the naturally occurring hard clam resource within any proposed lease area outside of Little Assawoman Bay.

6.2 The Department shall prepare a written summary of their methods and findings of their field assessment for the applicant.

6.2.1 The Department shall not issue a Shellfish Aquaculture Subaqueous Land Lease for any acreage where the Department determines the presence of a mean density of two (2) or more hard clams per square yard per acre.

6.2.1.1 The Department may remove, for an indefinite period, any potential lease area where the Department determines the presence of a mean density of two (2) or more hard clams per square yard per acre.

- 6.3 The Department may issue a SADA Shellfish Aquaculture Subaqueous Land Lease where the Department determines that there is a mean density of less than two (2) hard clams per square yard per acre.
- 6.4 The Department may issue a Non-SADA Shellfish Aquaculture Subaqueous Land Lease where the Department determines that the mean density of clams is less than two (2) hard clams per square yard per acre.
- 6.5 Applicants may modify a proposed lease area(s) within a SADA and their operations plan without an additional application fee for acreage where the Department has determined that mean density of two (2) or more hard clams per square yard per acre exist, provided the total acreage accounted for in the modified application does not exceed the total acreage of the initial application and provided the proposed modification occurs within one (1) year of the date of written field assessment findings.

7.0 Shellfish Aquaculture Bonds and Liability

- 7.1 Prior to obtaining a SADA Shellfish Aquaculture Subaqueous Land Lease, or a Non-SADA Shellfish Aquaculture Subaqueous Land Lease, the prospective leaseholder shall provide evidence of, and maintain for the duration of the lease, a performance bond of \$2,000 per acre leased, to provide for aquaculture equipment removal cost-recovery in the event that the prospective leaseholder fails to perform according to the conditions of the lease, or fails to maintain the lease.
- 7.2 Prior to obtaining a SADA Shellfish Aquaculture Subaqueous Land Lease or a Non-SADA Shellfish Aquaculture Subaqueous Land Lease, the prospective leaseholder shall provide evidence of, and maintain for the duration of the lease, liability insurance of at least \$1 million each occurrence and \$2 million annual aggregate against loss or liability for bodily injury, death, property damage or destruction occurring within the leased area, or arising out of the use of the lease by the leaseholder or its agents, employees, officers, and visitors. Said policy shall be written so as to provide that the insurer waives all rights of subrogation against the State in connection with any loss or damage covered by the policy.

8.0 Modifications to Operations Plan

- 8.1 Proposed modifications to an operations plan may be made at any time and shall be submitted to the Department in written form by the leaseholder or a party lawfully authorized to act on behalf of the leaseholder.
- 8.2 An approved operations plan will remain in effect until it is terminated, amended, or otherwise changed by the leaseholder or a party lawfully authorized to act on behalf of the leaseholder and said modifications are approved in writing by the Department.

9.0 Shellfish Nursery Permits and Nursery Structures

- 9.1 It is unlawful to operate any upweller, downweller or raceway in or on Delaware's Inland Bays without a Department-issued Shellfish Nursery Permit. (Penalty Section 7 Del.C. §2012)
- 9.2 A Shellfish Nursery Permit:
- 9.2.1 Requires an approved lease issued by the Department's Wetlands & Subaqueous Lands Section for each shellfish nursery structure.
- 9.2.2 A complete and accurate operations plan:
- 9.2.2.1 An operations plan shall include a complete and accurate description of the location and size of the proposed shellfish nursery structures and area.
- 9.2.2.2 An operations plan shall identify which species are being cultivated in the shellfish nursery structures.
- 9.2.2.3 An operations plan shall provide a complete and accurate description of the method and manner of management or cultivation to be performed within the proposed shellfish nursery structures.
- 9.2.3 May not be transferred.
- 9.3 The Department may revoke or suspend a Shellfish Nursery Permit at any time for any violation of Sections 12.0 or 17.0.
- 9.4 Permitted Shellfish Nurseries may be located in waters classified by Delaware Shellfish and Recreational Water Programs as approved, seasonally approved, or prohibited.
- 9.5 It is unlawful for shellfish nursery structures to contain any oysters greater than 25 mm shell length or any hard clams greater than 15 mm shell length without written authorization from the

Department.

9.6 The shellfish nursery permittee shall:

9.6.1 Follow the requirements of Delaware Shellfish and Recreational Water Programs.

9.6.2 Notify the Department immediately upon discovery of any disease or mass mortality event affecting the shellfish at the facility that has the potential to contaminate native or naturalized animals.

10.0 Shellfish Aquaculture Harvester License

10.1 The Department will provide a shellfish aquaculture harvester license to each shellfish aquaculture leaseholder upon issuance of the aquaculture lease by the Department and full payment of all lease and license fees to the Department.

10.2 The Department may issue shellfish aquaculture harvester licenses only to individuals aged 16 years and older.

10.3 A shellfish aquaculture harvester license is not transferrable.

10.4 It is unlawful for any leaseholder, or licensed shellfish aquaculture harvester, or persons working in the physical presence of a shellfish aquaculture license holder, to engage in shellfish aquaculture activities that are inconsistent with Delaware Shellfish and Recreational Water Programs regulations. (Penalty Section 7 Del.C. §2012 and §2013(d))

11.0 Shellfish Aquaculture Gear

11.1 A Shellfish Aquaculture Subaqueous Land Leaseholder shall bear the burden and responsibility for properly marking, rigging, and maintaining all shellfish aquaculture gear.

11.2 It is unlawful for the aquaculture lessee to not conspicuously, legibly and permanently mark the lease number on all equipment, gear, or manmade materials placed on an aquaculture lease site.

11.3 It is unlawful to use any equipment or gear that is known to leach toxic materials or violate any water quality standards on a Shellfish Aquaculture Subaqueous Land Lease.

11.4 It is unlawful for any gear containing oysters to hold the oysters closer than four inches from the bottom.

11.5 It is unlawful for the aquaculture lessee to not mark each shellfish aquaculture container with an all-white buoy measuring at least three (3) inches by three (3) inches by three (3) inches.

11.6 Notwithstanding subsection 11.5, shellfish aquaculture containers stacked vertically in the water column shall be marked with a single all-white buoy measuring at least three (3) inches by three (3) inches by three (3) inches, per vertical stack.

11.7 It is unlawful for buoys marking shellfish aquaculture containers to not have the leaseholder's lease number either on the buoy, or on a waterproof tag attached to the buoy.

11.8 It is unlawful for an individual gear or shellfish aquaculture container to exceed 70 cubic feet in volume.

11.9 It is unlawful to store equipment, materials, or any shellfish gear that do not contain live shellfish within the boundaries of a Shellfish Aquaculture Subaqueous Land Lease site.

11.10 It is unlawful to clean, maintain or repair, except by hand tools operated without electric or hydraulic power, any shellfish aquaculture gear while it remains fully or partially submerged in the water.

11.11 It is unlawful to rinse or clean any shellfish aquaculture gear while on the water, except within the boundaries of one's own lease site.

11.12 The leaseholder is responsible for all equipment, gear, cultured shellfish, or materials placed on the lease site for aquaculture purposes, and remains responsible for gear that has been found adrift or unattended outside the boundaries of the lease.
(Penalty Section 7 Del.C. §2012)

12.0 Importation of Shellfish for Shellfish Aquaculture

12.1 It is unlawful to collect wild stock shellfish for the purposes of shellfish aquaculture from Delaware waters, except as authorized in writing by the Department.

12.2 It is unlawful to possess, place, or cause to be placed, undersized wild stock shellfish except as authorized in writing by the Department.

12.3 It is unlawful for a person to import or possess shellfish from outside of the State, for the purpose of shellfish aquaculture, without first obtaining a permit from the Department.

(Penalty Section 7 **Del.C.** §2012)

13.0 Shellfish Aquaculture Species

13.1 It is unlawful to produce or culture bivalve shellfish species other than *Crassostrea virginica*, the eastern oyster, in Rehoboth Bay, Indian River and Indian River Bay and their respective tidal tributaries.

13.2 It is unlawful to produce or culture bivalve shellfish species other than *Crassostrea virginica*, the eastern oyster, and *Mercenaria mercenaria*, the hard clam, in Little Assawoman Bay and its tidal tributaries.

(Penalty Section 7 **Del.C.** §2012)

14.0 Lease Marking

14.1 Following the issuance of a Shellfish Aquaculture Subaqueous Land Lease by the Department, and prior to placing any shellfish aquaculture gear or shellfish, each corner of each leased one (1) acre plot must be surveyed and marked by a professional land surveyor as defined in 24 **Del.C.** §2702(6), or may be surveyed and marked by the Department as resources allow.

14.1.1 The relative accuracy of the corner marker locations shall be equal to or less than three (3) feet. Locations of all corner markers in latitude and longitude shall be provided in an eight (8) digit format, as well as information on the method of measurement, make and model of equipment, on a certificate form supplied by the Department and signed by the professional surveyor or Department surveyor after the boundary survey and marking of the lease.

14.1.2 The leaseholder shall be responsible for supplying the anchors, lines, buoys, and poles required to mark the corner boundaries.

14.1.3 The leaseholder shall be responsible for all costs of professional land surveys not performed by the Department.

14.2 It is unlawful for the aquaculture lessee to not mark each corner of a Shellfish Aquaculture Subaqueous Land Lease with a PVC pole [or PVC pole buoy] at least six (6) inches in diameter and extending at least five (5) feet above the surface of the water [at mean high water]. (Penalty Section 7 **Del.C.** §2012)

14.3 The leaseholder shall affix an orange reflective diamond placard, measuring a minimum of 12 inches by 12 inches to each corner pole.

14.3.1 The leaseholder shall mark each corner pole with at least 24 inches of white or orange reflective material above the water line, a portion of which must be visible from all directions.

14.3.2 The leaseholder shall mark each corner placard with the corresponding lease number in three (3) inch black block lettering.

14.4 A buoy, float, sign, or other device used to mark a lease may not contain a sign, display, light, structure, figure, painting, drawing, message, plaque, placard, poster, billboard, or device that is designed, intended, or used to advertise a product or service offered by a private entity or inform the general public of anything other than that the buoy, float, sign, or other device marks the location of a shellfish aquaculture lease.

14.5 The leaseholder shall maintain and meet any standard for corner and perimeter marker structures throughout the duration of the lease.

14.6 It shall be unlawful to not maintain proper lease markings in accordance with this subsection.
(Penalty Section 7 **Del.C.** §2012)

15.0 Harvesting a Shellfish Aquaculture Subaqueous Land Lease

15.1 It is unlawful for any person to use any device attached to a vessel powered by sail or mechanical means, or any mechanical gear in the harvesting of Shellfish Aquaculture Subaqueous Land Lease sites in Delaware's Inland Bays, except that powered winches may be used to raise and lower cages. (Penalty Section 7 **Del.C.** §2012)

15.2 Anyone lawfully engaged in planting, tending, or harvesting cultured shellfish in Delaware's Inland Bays shall not be bound by the seasonal restrictions of 7 **DE Admin. Code** 3772.

15.2.1 Notwithstanding subsection 15.2, the leaseholder, and any approved workers on the lease site shall adhere to Delaware Shellfish and Recreational Water Programs' regulations regarding *Vibrio* and shellfish harvest.

15.3 The leaseholder, their licensed harvester, or anyone lawfully harvesting in the direct presence of same, may harvest oysters of any size from a Shellfish Aquaculture Subaqueous Land Lease site for which they are licensed.

16.0 Active Use of Shellfish Aquaculture Subaqueous Land Lease Sites

- 16.1 The Department shall conduct an annual review of each shellfish aquaculture lease in order to determine active use of the lease in the previous year.
- 16.2 In the event that an aquaculture lease is determined by the Department not to be active for a period of one (1) year (12 months), the lease shall be terminated and the lease site may revert to the inventory of available lease sites.
- 16.3 An active lease in Delaware's Inland Bays must meet the following conditions:
 - 16.3.1 After two (2) years (24 months) from the date of lease issuance or transfer, leaseholders must provide evidence to the Department's satisfaction that they annually plant at least 100,000 shellfish per acre leased.
 - 16.3.2 After the first three years of the lease, each leaseholder shall annually harvest and produce proof of sale for an average of at least 10 bushels of oysters per acre or 5,000 clams per acre, or an equivalent combination.
- 16.4 Notwithstanding subsection 16.3, the minimum planting requirement shall not apply to the initial two (2) years (24 months) of a lease, but lessees must plant sufficient shellfish to ensure that the production requirement can be met by the end of the third year (36 months), and annually thereafter.
- 16.5 The Department may, at its discretion, grant written exemptions from the planting, harvest or sale requirement due to catastrophic loss or low shellfish stock availability.

17.0 Reporting Requirements for Shellfish Aquaculture Subaqueous Land Leases and Shellfish Aquaculture Nursery Structures

- 17.1 It is unlawful for the leaseholder to not file monthly reports by the tenth day of the following month indicating if any clam or oyster planting or harvest activity occurred or did not occur, including the farm gate prices paid, on forms provided by the Department.
- 17.2 It is unlawful for leaseholders and shellfish aquaculture nurseries to not completely and accurately answer a yearly questionnaire provided by the Department within 45 days from the date of receipt.
- 17.3 It is unlawful for shellfish aquaculture nursery permittees to not file yearly reports indicating species and numbers of shellfish grown and planted or sold.
(Penalty Section 7 Del.C. §2010(b))

18.0 Annual Shellfish Aquaculture Subaqueous Land Lease Renewal

- 18.1 Leaseholders renewing their leases shall submit the annual lease fee and form by December 31 of their current year's lease.
 - 18.1.1 Renewal of the lease is subject to the leaseholder and operations plan meeting all criteria for leasing.
 - 18.1.2 If the Department finds that it is contrary to public interest to renew a lease, then the lease may not be renewed.
- 18.2 If a leaseholder does not renew their lease by the payment deadline, the lease may be terminated for non-payment, and the leased area described in the terminated lease shall revert to the inventory of available lease sites.

19.0 Shellfish Aquaculture Subaqueous Land Lease Transfers

- 19.1 A leaseholder may apply to transfer a lease by completing a Lease Transfer Form supplied by the Department, and signed and notarized by the parties making and receiving the transfer, provided that the aquaculture operation remains the same, including size, species, gear, and method of culturing.
- 19.2 The Department shall not transfer a Shellfish Aquaculture Subaqueous Land Lease without a complete and accepted Shellfish Aquaculture Subaqueous Land Lease Application from the party to whom the lease is being transferred, a boundary survey as specified in subsection 14.1, evidence of bond and liability coverage as specified in Section 7.0, and full payment of all application and lease fees.
- 19.3 The party to whom the lease is being transferred shall be responsible for paying the lease application fee prior to the completion of the transfer.

20.0 Shellfish Aquaculture Subaqueous Land Lease Expiration, Surrender, Termination and Sale

- 20.1 A leaseholder may surrender their lease to the State, in whole, or in one (1) acre increments, at any time during their lease tenure; however, the leaseholder will remain liable for the removal of shellfish aquaculture gear and cultured shellfish on the lease consistent with subsection 20.4.
- 20.2 The Department may terminate a Shellfish Aquaculture Subaqueous Land Lease at any time where the Department determines that continuing the lease does not serve the public interest of the State. Criteria for termination includes, but is not limited to:
- 20.2.1 Failure to pay the annual lease fee in advance of the year.
- 20.2.2 Failure to file information required by the Department, or filing false information to the Department.
- 20.2.3 Failure by new leaseholder to apply for a lease transfer.
- 20.2.4 Failure to keep the lease boundaries marked as required in Section 14.0.
- 20.2.5 Failure to comply with the regulations governing the use of shellfish aquaculture leases in Delaware's Inland Bays.
- 20.2.6 Failure to file reports as required in Section 17.0.
- 20.2.7 Evidence that the leaseholder willfully extends or causes to extend the lease boundaries.
- 20.2.8 Failure to adhere to the operations plan.
- 20.3 The Department shall notify an aquaculture leaseholder by registered mail of its decision to terminate a lease.
- 20.3.1 A leaseholder may contest the Department's proposed decision by requesting a review by the Environmental Appeals Board, to be filed no later than 30 days after receipt of the Department's termination decision.
- 20.3.2 Failure of a leaseholder to respond to the Department's notification within 30 days of receipt of the notification shall cause the lease to revert to the State.
- 20.4 In the event of expiration, surrender, or termination, the leaseholder is responsible for restoring the lease area to pre-lease conditions within thirty (30) days from the date of expiration, surrender, or termination. This shall include the removal of all cultured shellfish, structures, rafts, floats, markers, buoys, lines, cages, anchors, netting, stakes, and other equipment brought to the site.
- 20.4.1 A leaseholder who does not restore the area to pre-lease condition within 30 days shall surrender their performance bond, in order to enable the Department to remediate the site.
- 20.4.2 Equipment that is not cleared from the site within 30 days from expiration, surrender, or termination of the lease shall be considered abandoned. Abandoned equipment will be disposed of in the manner described in 7 Del.C. §2013(f).
- 20.5 Any person, corporation, or entity who has had their lease terminated, or has abandoned their lease may not apply for a new lease or a transfer of lease for a period of five (5) years.
- 20.6 It is unlawful to sublease, rent, or sell a Shellfish Aquaculture Subaqueous Land Lease.
(Penalty Section 7 Del.C. §2012)

21.0 Shellfish Aquaculture Subaqueous Land Lease Condemnation

- 21.1 Any subaqueous lands leased for shellfish aquaculture in Delaware's Inland Bays and subsequently classified as prohibited, seasonally closed, or conditionally closed by the Department for the harvest of shellfish shall be governed by the following:
- 21.1.1 Leases falling under episodic closure shall adhere to the Delaware Shellfish and Recreational Water Programs guidelines.
- 21.1.1.1 It is unlawful to harvest shellfish from an area that Delaware Shellfish and Recreational Water Programs has declared closed. Leaseholders may tend their shellfish if their lease falls under episodic closure. (Penalty Section 7 Del.C. §2012)
- 21.1.1.2 Leaseholders may resume harvesting shellfish when the Delaware Shellfish and Recreational Water Programs reopens the area for shellfish harvest.
- 21.1.2 Should a lease area remain under a lengthy closure, the Delaware Shellfish and Recreational Water Programs will consider options for relay or harvest of shellfish, at their discretion.
- 21.1.2.1 Prior to moving any shellfish, the leaseholder shall apply for and receive a no-cost permit for this purpose issued by the Department.
- 21.1.2.2 The Department shall not assume any liability for any changes in classification of lease area, and shall assume no liability to the lessee for damages incurred due to such actions.

22.0 Emergency Shellfish Lease

- 22.1 The Department may issue an emergency shellfish lease where a leaseholder provides evidence to the Department's satisfaction that the health and safety of their current cultured shellfish are in imminent danger due to the lease location and such threat may be ameliorated by a change in location, provided the following:
 - 22.1.1 The leaseholder completes an Emergency Shellfish Relocation Application.
 - 22.1.2 Emergency shellfish relocations will be made to an available location, selected at the Department's sole discretion, within an approved SADA.
- 22.2 Within 60 days of emergency shellfish relocation approval by the Department, a leaseholder must return to their original lease site, file an application for a new lease, or submit an Emergency Shellfish Relocation Application.
 - 22.2.1 An emergency shellfish relocation lease is valid for no more than two 60-day lease periods.

23.0 Prohibited Activities

- 23.1 It is unlawful to alter the existing condition of any area for which a Shellfish Aquaculture Subaqueous Land Lease has been issued, including but not limited to, adding or removing fill, shell, or other material, without first obtaining the Department's written approval.
- 23.2 It is unlawful to culture oysters unless they are fully contained in gear.
- 23.3 It is unlawful for a Shellfish Aquaculture Subaqueous Land Leaseholder or shellfish aquaculture license holder, or those individuals working under the physical presence of a licensed shellfish harvester, to operate in any manner that is inconsistent with the operations plan governing the use of a Shellfish Aquaculture Subaqueous Land Lease.
- 23.4 It is unlawful to engage in shellfish aquaculture activities in Delaware's Inland Bays except according to the terms and conditions specified in a Department-issued Shellfish Aquaculture Subaqueous Land Lease, a Shellfish Nursery Permit, or an Emergency Shellfish Lease.
- 23.5 It is unlawful to harvest or take wild bivalve shellfish from permitted lease sites and any navigation corridors.
- 23.6 It is unlawful to culture any non-native shellfish species in Delaware's Inland Bays; however, triploid varieties of native species are permitted.
- 23.7 It is unlawful to prevent the public from traversing or hook and line fishing in a Shellfish Aquaculture Subaqueous Land Lease.
- 23.8 It is unlawful for boats traversing a marked navigation corridor or a marked lease to exceed a Slow-No-Wake speed, as defined in 7 Admin. Code 3100 (2.0).
- 23.9 It is unlawful to interfere with the lawful tending or harvest of a Shellfish Aquaculture Subaqueous Land Lease.
- 23.10 It is unlawful for boats, other than those operated by the leaseholder, or their employees, to anchor within a shellfish aquaculture lease site or to tie off to any shellfish aquaculture gear or lease boundary marking.
- 23.11 It is unlawful for boats to anchor within a marked navigation corridor or to tie off to any shellfish aquaculture gear or lease boundary marking.
- 23.12 It is unlawful for anyone to culture more than 1,000 shellfish unless lawfully operating under a Shellfish Aquaculture Subaqueous Land Lease or Shellfish Nursery Permit.
- 23.13 It is unlawful to fish or crab with any gear other than hook and line within the boundaries of an active and marked Shellfish Aquaculture Subaqueous Land Lease or navigation corridor.
- 23.14 It is unlawful to use canopy predator nets, or any barrier netting out of the water on a Shellfish Aquaculture Subaqueous Land Lease or shellfish nursery structure.
- 23.15 It is unlawful to use supplemental algae to culture shellfish in Delaware's Inland Bays.

(Penalty Section 7 **Del.C.** §2012 and §2013(d))

APPENDIX “B”



STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
& ENVIRONMENTAL CONTROL
DIVISION OF FISH & WILDLIFE
89 Kings Highway
Dover, Delaware 19901



OFFICE OF THE
DIRECTOR

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To: Lisa Vest, DNREC Hearing Officer

Through: David E. Saveikis, Division Director
John H. Clark, Fisheries Administrator

From: Stewart Michels, Program Manager II

Date: 7 July 2014

Subject: Technical Response Memorandum – Shellfish Aquaculture (7 DE Admin. Code 3800)

This memorandum is in response to your formal request for a Technical Response Memorandum concerning the Department of Natural Resources and Environmental Control's (Department) proposed shellfish aquaculture regulation (7 DE Admin. Code 3800). The Department received comments and questions from 14 sources representing a range of constituencies and perspectives. In preparing a response, the Division of Fish and Wildlife (DFW) amalgamated the various public comments and questions into general subject groupings (in blue) to minimize redundancy. Each question or comment is attributed to the originator using initials as outlined below.

JT	Josh Thompson
CIB	Chris Bason (Center for the Inland Bays)
SF	Steve Friend
GR	Greg Rosner
MK	Mike Kynett
JWE	John Ewart
JB	John Buono
DB	Donna Buono
WM	Walter Mitchel
BK	Robert Kotowski
RC	Robert Collins
LA	Lisa Arni
RC (+62)	Ross Cropper
JB	James Bourke

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Inland Bays Shellfish Aquaculture

Questions/Comments:

- *"As a kayaker, stand-up paddleboarder and small-boat sailor, I am submitting this in opposition to the proposed aquaculture leases on Rehoboth Bay, Indian River Bay and Little Assawoman Bay." – BK*

Response:

- ✓ **The passage of H.B. 160 without opposition clearly established Delaware's desire to develop a shellfish aquaculture industry in the Inland Bays.**

Timeline

Questions/Comments:

- *"The potential growers have continued to press for a preliminary timeline for key items that would allow us to plan seed purchase and stocking/grow out/harvest timelines. This timeline is also necessary for developing business plans for the purposes of securing funding. A schedule and description of the lottery process, clam density verification, Army Corp [ACE] permit process, and plan approval has still been withheld from the public, making planning activities extremely difficult." – JT*
- *"The current approach to conduct individual lease application field assessments on an acre-by-acre basis for areas within a SADA after their selection by lease applicants is problematic and can potentially interfere with the lease application timeline, and establishment of preferred contiguous multi-acre lease boundaries." – JWE*
 - *"If the Department is to offer bottom leases within a designated SADA they should be made available as one acre pre-assessed (for shellfish densities) parcels with identified corner coordinates." - JWE*

Response:

- ✓ **Recognizing that potential aquaculturists are anxious to get started, the DFW took a multi-pronged approach to development of a shellfish aquaculture industry - simultaneously working on regulation development, ACE permitting, subaqueous land permitting, clam density sampling methods and protocols, developing a seed policy and developing a lottery process.**
- ✓ **Unfortunately, many aspects of establishing a successful shellfish aquaculture industry are controlled by timelines managed by processes or agencies outside of DFW.**
 - **The regulatory process is designed to ensure a fair and open public process which includes careful consideration of public comment. The DFW does not presume to judge the adequacy of such review or consideration and, as such, cannot offer a timeline for final regulation approval.**
 - **The DFW has been in contact with the Philadelphia ACE office concerning permitting Delaware's SADA for shellfish aquaculture.**

- The DFW cannot formally apply for permitting until final regulations are in place.
 - After the regulations are final, the DFW must contact agencies specified by the ACE with the copies of the Pre-Construction Notification (PCN), legislation, regulations, and SADA maps.
 - After hearing a response from those agencies, the DFW PCN is submitted to the ACE.
 - The ACE has 45 days from the date of submittal to respond to the PCN, and if the 45 days elapses before a response, the PCN is considered approved, unless the ACE has judged the PCN “incomplete.”
 - After the ACE has gone over the State’s application, the Philadelphia ACE office and the DFW will work on formulating a shortened ACE application for the State to act as the agent in submitting paperwork on behalf of the potential lessees.
- ✓ The regulatory and permitting processes are designed to provide a deliberative review process that ensures an opportunity for public review and input on proposed measures, permits and programs.
- ✓ Following the establishment of regulations and the permitting process, it will remain difficult to provide a timeline that is not entirely speculative and potentially misleading.
- ✓ There are many factors that can influence the time necessary to review an application (the number of applicants, clam density sampling, etc.).
- ✓ Processing times for shellfish aquaculture applications in other states vary widely from a minimum four months in Maryland (typically six to ten months) (<http://dnr2.maryland.gov/fisheries/Documents/Shellfish-Lease-Application-Instructions.pdf>) to as long as two years in Rhode Island (typically nine to 13 months) (http://www.jamestownpress.com/news/2013-05-02/News/Application_process_an_uphill_battle_for_shellfish.html). Suffolk County, New York estimates that it will take 9 months to a year to complete the shellfish lease application process; however, unforeseen issues could delay the process (<http://www.suffolkcountyny.gov/Departments/Planning/Divisions/EnvironmentalPlanning/AquacultureLeaseProgram/ApplicationProcess.aspx>).
 - The Department will endeavor to efficiently process applications as science and resources allow.
- ✓ Ideally, the Department would fully pre-assess the entire SADA; however, the Department has responded to the many requests from potential aquaculturists to speed the process. If the timeline to start leasing were pushed back a year, pre-assessment of SADAs
- ✓ such would be possible.
 - Because a natural clam resource assessment is not required for Little Assawoman Bay proposed leases, applicants for leasable acres in Little Assawoman SADA will not have to wait for the hard clam density sampling.

- ✓ **The assessment of natural clam resources on the proposed lease acreage at the time of lease application is a standard part of shellfish land/water leasing in many states (NJ, RI, FL) and a time lag between application and leasing would not be unique to Delaware.**

Navigation Corridors & Lease Configuration

Questions/Comments:

- *"A multi-acre lease perimeter should have a buffer zone but the individual lease holder should decide how and where they will navigate within the interior of their leased area." - JWE*
- *"...requiring a 20 foot navigable buffer around each acre is not advisable." – JWE*
- *"allowingpublic access through a SADA and through an individual's multi-acre lease increases the potential for accidents and conflicting use with shellfish farmers." – JWE*
- *"In other states, anglers take advantage of the reef effect and habitat created by oyster farms by anchoring on the periphery of a lease area or SADA." - JWE*
- *"To the best of my knowledge no other state leasing program uses this[navigation corridors] approach". – JWE*
- *"Lease boundaries should be determined by the Department (along with verification of wild hard clam densities in advance prior to being made available for application[])." - JWE*
- *"...20 foot navigation corridors are too narrow to offer safe and efficient recreational passage and may invite problems..." - CIB*
- *"The establishment of a 20 ft. –wide navigation corridor between one-acre plots will encourage the public to attempt to traverse between one-acre plots." - CIB*
- *"It will be safer for the boating public and the gear on a lease for boaters to navigate around a lease site made up of multiple acres rather than to traverse a narrow corridor..."-CIB*
- *"...every boating channel that's created takes up valuable area within a SADA." –CIB*
- *Allow that, "Once the totality of plots is marked for a specific SADA, then decisions can be made as to where navigation can be safely accommodated through or around lease sites" – CIB*
- *They also will discourage paddlers from using the bay because they will replace the pristine natural sites with forest of ugly PVC pipes and the potential, at low tide, of exposed cages. -BK*
- *"...that 20-foot of that another boat coming through our equipment , that just, I just can't see it. I think somebody is going to hit our equipment, and I think that that shouldn't be allowed." – SF (verbal at hearing)*

Response:

- ✓ **The DFW considered lease configurations with and without navigation corridors and corridors of varying sizes. Among the considerations were:**
 - **the amount of available bottom within SADAs**
 - **providing access for aquaculturists to reach their leases**
 - **navigation corridors provide a buffer to reduce lease citing conflicts between adjoining leases due to error inherent to surveying and associated marking**
 - **providing safe passage for all boaters.**

- providing recreational fishing access, as this was commonly cited throughout the tiger team process as a benefit of shellfish aquaculture (e.g. see “Facts about Shellfish Aquaculture in Delaware’s Inland Bays” issued by the Center for the Inland Bays (<http://www.inlandbays.org/wp-content/uploads/Fact-Sheet-final.pdf>))
 - conflicts with working or traveling to adjacent leases
- ✓ At least three other shellfish aquaculture programs along the Atlantic Coast use buffers or corridors between, or even within, leases for the same reasons that led the DFW to include navigation corridors in the SADA (Attachment A)
- ✓ A corresponding slow-no-wake speed restriction (23.8) within the navigation corridors was included to minimize possible vessel interactions and conflicts between boaters and aquaculturists.
 - “Slow-No-Wake” is defined in regulation to mean as slow as possible without losing steerage way and so as to make the least possible wake (7 DE Admin Code 3100 (2.1)).
- ✓ Also included was a provision for no anchoring within the navigation corridors (23.11) to further minimize conflicts.
- ✓ The proposed regulations allow anchoring around the periphery of leases.
- ✓ Lease boundaries will be established by the Department, or by the lessee’s professional land surveyor, at the lessee’s preference.

Lease Applications

Questions/Comments:

- *“It should be the department’s responsibility to ensure that SADA boundaries are at least 150 feet from existing marked navigational channels.” - JWE*
- *“Why should there be a requirement for a lease applicant to address compatibility with other uses within a SADA...?” - JWE*
- *“What safety and security equipment does this [4.3.6] refer to?” - JWE*
- *“The requirement for a complete and accurate business plan may be expecting too much information in advance...” - JWE*
- *“What criteria are being used to determine if an applicant has the necessary technical background and capability to grow shellfish?” - JWE*
 - *“Who in the Department has sufficient experience growing shellfish in a commercial setting to make this determination?” – JWE*
- *“The requirement for a complete and accurate business plan may be expecting too much information in advance from an entry-level lease applicant...” – JWE*
- *“Is there a requirement for a public hearing for a non-SADA lease application? If so, it should be designated in the regulations.” - JWE*
- *“...what...other criteria are there besides fee payment and survey results for rejecting a lease application?” - JWE*
- *“...will DNREC require a CAD drawing or will hand drawn schematics be accepted?” - JT*

- *“The established shellfish areas have already been extensively reviewed for potential user conflict issues within the Tiger Team meetings and the public workshops. Potential growers are now being asked to further flesh out these potential conflicts?” – JT*
- *What does the Department deem adequate experience to invest one’s own resources into this business?” - JT*

Response:

- ✓ **The Department’s charge was to provide for a shellfish aquaculture industry in Delaware’s Inland Bays within certain constraints (7 Del. Code §2002 (a)).**
- ✓ **A thoughtful and deliberative application process is necessary and beneficial to both the grower and the Department in providing a viable shellfish aquaculture industry.**
- ✓ **The Department requires that potential aquaculturists address a number of considerations (criteria) in their application.**
 - **This allows the applicant to demonstrate that they understand the constraints and provides an opportunity to the applicant to document their compatibility with existing uses.**
 - **It also serves to focus the applicant’s consideration of their potential gear types and operations so the applicant may minimize conflict with other users and recognize the potential hazards to their anticipated operation based on the local conditions.**
- ✓ **Among the considerations in the lease application is a requirement for the outline of security and safety considerations.**
 - **This includes much more than equipment marking and boundaries; these considerations also apply to harvesting, landing and processing product, particularly when it comes to shellfish health and foodborne illness.**
- ✓ **The requirement for a business plan is not an unreasonable request, even for an entry-level business.**
 - **Many other states ask for either a formal business plan, or portions of what constitutes a business plan.**
 - **Florida—requires applicants to develop a 10-year business plan to be submitted as part of the application that demonstrates the amount of acreage that is necessary to meet their proposed production levels. The business plan must also project the amount of time that will be required to bring the lease into full cultivation and meet the effective cultivation requirements.**
http://www.freshfromflorida.com/content/download/35912/835687/Aquapack_04-14.pdf)
 - **Maryland asks “describe the labor, harvesting methods, and harvesting equipment to be used on the lease.”**
<http://dnr2.maryland.gov/fisheries/Documents/Commercial-Shellfish-Lease-Application.pdf>)
 - **New York—Suffolk County—requires every applicant to attend a pre-application meeting with staff to discuss general business plans, to make sure that the applicant’s goals and intentions are on-target with the regulations,**

and what can be expected for the area.

(<http://www.suffolkcountyny.gov/Departments/Planning/Divisions/EnvironmentalPlanning/AquacultureLeaseProgram/ApplicationProcess.aspx>)

- Rhode Island—the applicant must provide a detailed written description of the proposed operation timetable with respect to actual site work, intended recipient(s) of aquaculture product(s), etc.
(<http://www.crmc.ri.gov/applicationforms/AquaApp.pdf>).
- ✓ Business plans are a recommended BMP of the East Coast Shellfish Growers Association (<http://www.ecsga.org/Pages/Resources/BMP.html>).
- ✓ DFW staff will review the submitted applications, including proposed aquaculture operations plan, business plan, and experience to determine the applicant’s capability of performing the proposed aquaculture activities.
- ✓ Not all aspects of the application process are designed simply for the Department to critically evaluate the application.
 - The application process is also designed to force applicants to critically examine their own risks, responsibilities and liabilities with regard to starting and running a shellfish aquaculture enterprise. Given the limited area authorized by the legislature for shellfish aquaculture, it is important that careful thought and deliberation go into the process to best ensure the development of a successful industry in the limited space available.
 - The request for description of technical experience or knowledge is further assurance that the applicant has some basic idea of what they should expect when they use public trust lands for private profit.
 - The Department realizes that there will be first-time shellfish growers, but the Department will be looking for evidence that the applicant has worked to educate themselves about shellfish aquaculture (a description of professional contacts in the business, a description of skills they currently possess that they believe will be applicable to culturing shellfish, any courses taken or shellfish aquaculture meetings attended, etc.).
 - This information will be used by the DFW to provide further assistance or guidance in helping an applicant prepare their operations or business plan, especially as more information about commercial-scale aquaculture in the Inland Bays is assembled.
- ✓ As part of an operations plan, the Department will accept any clear and legible schematic diagram accurately depicting gear and mooring equipment.
- ✓ Consideration of public comment and all required state and federal permits (respectively) are required before a lease will be issued for areas outside of the SADA.
 - The state permitting is done through Wetlands & Subaqueous Lands, and may require a public hearing per 7 DE Admin 7502 (11.0).

Lease & Gear Marking

Questions/Comments:

- *“Requiring that each piece of growout gear should be marked with a buoy is not necessary and will detract from aesthetic considerations.” – JWE*
- *“Passing survey costs onto the lease applicant can be a significant financial constraint to business development.” – JWE*
- *“Requiring that corners of each individual acre regardless of being a multi-acre lease or not be marked with 6 inch diameter pipe 5 feet above the waterline is regulatory overkill, will significantly diminish local aesthetic considerations and is virtually guaranteed to generate public opposition. This requirement should be for designating the corners and a range of intermediate points on the boundary of a SADA. Individual lease boundaries should be marked with buoys. “ - JWE*
- *“Requiring the marking of every corner of each acre if the lease is multiple contiguous acres is, once again, overkill, and will cost the grower precious resources during startup.” - JT*
- *“This [aquaculture container marking] is directly inconsistent with common grow-out methods that are successful in other states.” - JT*
- *“Marking individual cages is expensive and unnecessary” – JT*
- *“For small-boat sailors who normally are not restricted to just the narrow channel that power boats use, the aquaculture areas will add a navigational hazard to an area that at present has none.” - BK*
- *“Another hazard will exist for all recreational paddlers and sailors by the added presence of commercial power vessels that will be there on a regular basis to check on their oyster flats, wash them down and harvest them.” - BK*
- *“They also will discourage paddlers from using the bay because they will replace the pristine natural sites with forest of ugly PVC pipes and the potential, at low tide, of exposed cages.” – BK*
- *“This is to say nothing about the spectra of a forest of PVC pipes that will be created by four pipes for each one-acre plots.” - CIB*

Response:

- ✓ **The DFW’s requirements for markings were the subject of much debate and consideration by DNREC staff.**
- ✓ **We remain concerned about the “visual pollution” created by gear marking; however, public safety and property protection (aquaculture gear, boats, etc.) are paramount.**
- ✓ **Note that lease boundaries within a SADA will only be reserved and marked as applications for leases are approved—the designated SADA areas will remain unmarked in any manner and fully open as public trust areas with all the usual rights implied until leased.**
- ✓ **DFW’s Enforcement section consistently recommended having poles around every 200ft mark (the side length of a square acre is 208.71) so that the aquaculture areas would be instantly recognizable, and boat traffic passing by could safely avoid them; therefore, even if multi-acre**

leases were contiguous, it would be Enforcement's strong recommendation that there be markings for each acre, as required by the single acre blocks and navigation corridors.

- ✓ The tremendous number of non-resident boaters and novice boaters and personal watercraft users and shallow depths of the Inland Bays is a particular concern. Having the leased acres and gear marked individually will assure consistency in the markings, and make the leased acreage easily identifiable.
- ✓ Commercially available floats for gear marking cost approximately \$1.05 - \$1.50 each; however, materials of opportunity such as jugs may also be used.
- ✓ Gear marking establishes accountability by the aquaculturist and allows lost gear to be returned to the proper lease.
- ✓ Marking of gear will not hinder actual grow-out of shellfish.
- ✓ The DFW agrees with the implication that buoys should be considered and suggests that the PVC markings be either in the form of pole driven into the sediment or pole buoys affixed to anchors.
- ✓ Other states also recognize the need to have shorter distances (than only the perimeter of multiple contiguous acres) between lease markings (Attachment B).
- ✓ As the aquaculture industry becomes established and users of the Inland Bays become more familiar with the gear, the DFW may reconsider the marking requirements.
- ✓ Lease boundary survey costs represent a very small percentage of aquaculture start-up costs - less than 5% of the budgets estimated by Virginia and North Carolina.
(<http://www.vims.edu/research/units/centerspartners/map/aquaculture/index.php> & <http://www.ncagr.gov/markets/aquaculture/Clam01.pdf>)
- ✓ Several jurisdictions require that the aquaculturist arrange or pay for their own boundary surveys.
 - New York requires that applicants have the boundaries surveyed by a licensed land surveyor, at their own expense;
 - North Carolina requires that the applicant provide a land lease boundary survey by a professional land surveyor (at applicant's expense) within 90 days;
 - Florida requires that the applicant pay for a licensed land surveyor to survey the boundaries of the lease (they recommend that the applicant budget \$2,000 (per typical 1.5 – 2 acre lease) for such services).

Lease Renewal/Termination

Questions/Comments:

- *"What constitutes "contrary to the public interest" as a justification for not renewing a lease for an individual that otherwise has met all reporting and fee requirements? The Department may be exposing DNREC to future legal proceedings and costs unless specific guidelines are drafted to explain what is meant or intended by this language and how an infraction would be determined. Individuals wanting to start a shellfish aquaculture business in Delaware may be less inclined to do so and potentially expose their business and capital investment to termination by a vague rule such as this one." - JWE*

- *"This [18.1.2 – lease renewal] is VERY vague and leaves the grower open to catastrophic losses, without specifying what constitutes "contrary to public interest." This item should either be fleshed out or removed." – JT*
- *"...requiring a new survey for an existing lease, when DNREC already has the survey information for the lease, is also absurd, redundant, and another example of a requirement that will cost the new grower precious resources during establishment." - JT*

Response:

- ✓ **Much of the criteria for "contrary to the public interest" is explicit in the proposed regulations under 20.2.**
- ✓ **DNREC's Wetlands and Subaqueous Lands Section protects the public interest as it pertains to Delaware's subaqueous lands (7 DE Admin Code 7504).**
 - **"Public Interest" means demonstrable environmental, social, and economic benefits which would accrue to the public at large as a result of a proposed action, and which would exceed all demonstrable environmental, social, and economic costs of the proposed action. In determining the public interest in a request for use, sale, lease, or transfer of interest in subaqueous lands, the Department shall consider the ultimate project and purpose to be served by said use, sale, permit, lease, or transfer of lands or materials.**
- ✓ **Wetlands and Subaqueous Lands is providing DFW a permit waiver for SADAs, and will issue permits for areas outside of the SADAs.**
 - **DFW, working under the authority of this Wetlands waiver, must maintain the charge governing the use of subaqueous lands, including protecting the public interest.**
- ✓ **Consultation with other state programs also supported the inclusion of such language—it was specifically recommended by Connecticut's shellfish aquaculture program (per Z. Hense personal communication with David Carey, Director of CT Bureau of Aquaculture & Laboratory Services).**
- ✓ **Boundary surveys are a standard business practice.**
 - **It should not be assumed that the markings on a transferred lease are accurate.**
 - **Boundary surveys ensure enforceability of regulations designed to protect the aquaculturist's product.**
 - **Boundary surveys are necessary to protect the aquaculturist from liability.**
 - **The requirement of a boundary survey at the transfer of a lease ensures that the aquaculturist receiving the transfer, and who becomes legally responsible for the upkeep of markings and gear on the site, may be certain that the boundaries are accurately marked from the outset of their lease.**

Hard Clam Field Assessment

Questions/Comments:

- *"Determining the average clam density on a per acre basis in a SADA of multiple tens of acres as identified in the sessions held thus far is highly time consuming and could*

significantly delay the length leasing application and approval process. A proposed SADA should be evaluated by mapping average clam densities over a larger area (10-20 acre parcels) and those parcels with less than an average of 2 clams per square yard should be subdivided into acre plots and combined within the revised SADA. All acreage within a SADA would be eligible for a lease application and would accommodate a prospective farmer desiring to lease multiple contiguous acres in anticipation of future business expansion needs. If the proposed SADAs identified thus far are too much acreage to survey in advance, then consider verifying smaller tracts within each of the SADAs identified and gradually expand availability of bottom areas based on demand.” - JWE

- *“What methods are to be used for the field assessment...?” - JWE*
- *“Draft regulation 6 does not specify how DNREC will determine hard clam densities within SADA’s.”-CIB*
- *“Some neighboring states that require clam densities use bull rakes and/or plungers to determine the clam densities. These methods are quick and deemed effective by other States and should be considered when determining clam densities for potential leased acreage.” - CIB*
- *“How much time would DNREC likely need to determine clam densities for a given lease application...?” - CIB*
- *“The more acreage that can be approved now, in terms of clam densities, the easier it will be for aquaculturists to get started.” –CIB*
- *“What methodology is being used to determine density?” – JT*

Response:

- ✓ **In developing the hard clam density thresholds and associated sampling the Department gave serious consideration to the enabling legislation which directs the Department to, “...provide for the conservation, preservation and improvement of the wild shellfish resources...” and to, “...identify areas where shellfish aquaculture leases may be established that are compatible with commercial and recreational ...shellfishing...and native biota.”**
- ✓ **Protecting our wild clam resources and the associated commercial and recreational fisheries is a responsibility the DFW takes very seriously.**
- ✓ **The Indian River and Rehoboth Bays remain among the few areas along the Atlantic Coast that supports viable recreational and commercial hard clam fisheries (see Attachment C and DFW public hearing exhibit 17).**
- ✓ **As presented at the public hearing, the DFW has not finalized a validated method or sampling protocols that will provide statistically robust density estimates of wild hard clam stock within proposed leases.**
- ✓ **The DFW has been diligently working on the issue, while simultaneously working to develop the regulations, a seed importation policy, and establishing a lottery process for issuing the initial leases.**
- ✓ **Although we recognize that there are multitudes of sampling devices that can provide quick estimates of clam densities, the DFW and the commercial clamming industry remained concerned about the catch efficiency of such devices.**

- ✓ We note that the threshold density was established based on highly efficient and quantitative assessment method requiring the use of a diver and suction dredge.
- ✓ Optimally, the same methodology would be used for determining density for leasing; however, such methods are tremendously expensive and time-consuming.
- ✓ Therefore, the DFW will continue to develop an accurate mechanism to establish clam density that is timely and cost-effective.
- ✓ The DFW is presently testing a hydraulic dredge developed at the Virginia Institute of Marine Science for quantitative sampling of benthic organisms (Castagna, M. 1967. A benthic sampling device for shallow water. *Limnology and Oceanography*. 12(2):357 – 359. - http://www.aslo.org/lo/toc/vol_12/issue_2/0357.pdf)
- ✓ Until such time that valid methods and protocols are established, the time required to determine clam densities for a given lease application remains unknown.
- ✓ The DFW will complete as much clam density sampling as possible prior to leasing.
(See also related timeline response relative to the first question/comment.)

Performance Bond

Questions/Comments:

- *“Requiring a performance bond of \$2,000 per leased acre is not warranted at this stage of industry development and increases start-up costs at a time when other costs for initiating business operations are significant with no income to offset them.” - JWE*
- *“At this time, a performance bond per leased acre should not be required.” - CIB*
- *“Every start-up cost associated with regulation will be an impediment to establishing an industry in the Bays.” – CIB*
- *“The requirement of a bond to use for cleanup of derelict equipment is another unnecessary cost that the grower will have during an already difficult start-up.” – JT*
- *“It is also very unlikely that a grower, faced with a failing business and unpaid debt, would leave tens of thousands of dollars of equipment on the lease.” - JT*

Response:

- ✓ The DFW agrees that a performance bond may be an impediment to undercapitalized shellfish aquaculture applicants. However, performance bonds are required in other states, ranging from \$1,500 - \$5,000 per leased acre.
- ✓ A \$2,000/acre performance bond is quite low and in all but the most modest of cases, probably would not cover the expense of removing damaged or abandoned gear (per Z. Hense personal communication with Clark Droney, Droney Marine Construction, Inc.), but may provide an adequate incentive to protect the State’s interest and would at least partially offset clean-up costs.
- ✓ The bond itself would not actually cost the aquaculturist \$2,000/acre.
 - The actual cost is variable, depending on the aquaculture location, their gear choice, the scale of their business, and their personal credit history. This amount is in line with what other states require.

- ✓ The experiences of other states without performance bonds, include that people willfully abandoning gear that becomes too battered by storms or too heavy with fouling to accommodate easy removal (per Z. Hense personal communication with Phillip Mc Caleb, Mc Caleb – Metzler Insurance).
- ✓ Using the VA and NC budgets for clam and oyster aquaculture, a performance bond of \$2,000 per acre would be less than 5% of the total estimated start-up costs (<http://www.vims.edu/research/units/centerspartners/map/aquaculture/index.php> & <http://www.ncagr.gov/markets/aquaculture/Clam01.pdf>)

Gear

Questions/Comments:

- *"Is there a potential threat to Delaware's natural resources if the cage sits lower than 4 inches from the bottom?" - JT*

Response:

- ✓ Cages lower than 4 inches from the bottom will not only endanger the shellfish within them by raising the potential for smothering from feces and pseudofeces, especially in low flow systems like the Inland Bays, but also pose problems that could extend beyond the individual cage.
- ✓ A four inch space beneath the cage allows for water flow under the cage, which is important to allow both nutrients and oxygen in the water to pass through the SADA, especially since the Inland Bays' shellfish aquaculture leases may be close together, with high densities of shellfish in the water column.
- ✓ Other shellfish growers in the area, as well as the native biota, benefit from the water flow.

Gear Storage

Questions/Comments:

- "What is the definition of "store" when referring to shellfish gear on a lease?" - CIB
- "Lessees should be able to "store" properly marked equipment on a lease for a limited term, say five days. -CIB
- "Empty gear is heavy enough to remain on bottom, and floating gear must be properly anchored no matter what's inside of them" – CIB
- "...temporary storage of culture gear on an aquaculture site...gives the lessee the ability to better manage his operation and keep costs for moving gear at a minimum." – CIB
- "There should be a specific restriction if the purpose of this regulation is to eliminate LONG TERM storage of unsecured gear on the lease." - JT

Response:

- ✓ "Store" refers to the common definition – to place something in a location, in this case on a shellfish aquaculture lease site, for future use.

- ✓ The DFW disagrees with the generalization that empty gear is heavy enough to remain on bottom, as even gear containing product often gets moved by storms and ice (in northern climates).
- ✓ Properly maintained gear weighs much less than the harvestable product they contain.
- ✓ While some added expense may be associated with removal of empty gear, the Inland Bays offer a multitude of boat ramps in close proximity to any waters open for shellfish aquaculture.
- ✓ It is extremely difficult to enforce a set time period like 5 days, as verifying the date the shellfish were removed and the time that the gear has been empty requires extensive surveillance.
- ✓ In consideration of the heavy boat traffic, public safety and property protection, the DFW contends that immediate removal of empty gear is a reasonable and prudent requirement.

Gear Size

Questions/Comments:

- *“What is the technical basis for selecting this number (volume) and why is the Department involved in setting a limit on a gear choice decision that should be left up to the grower.” – JWE*

Response:

- ✓ **70 ft³ was a volume similarly established by Virginia (4VAC20-1130-50).**

4VAC20-1130-50. Special Conditions. D. No individual temporary protective enclosure shall exceed 70 cubic feet, in volume.

- Definition: “Temporary protective enclosure” means cage, rack, tray, or other similar device for holding and protecting oysters or clams.
- ✓ **Establishing a maximum container volume allows for the removal of abandoned gear without overly specialized gear.**
- ✓ **The Inland Bays are low-flow systems and the probability that gear of larger capacity would sink into the bottom is increased with increased gear capacity.**
- ✓ **Larger containers may restrict or obstruct water flow to an extent that it may impact others in the immediate area whose shellfish also depend on water flow and the associated nutrients and oxygen.**

Gear Cleaning

Questions/Comments:

- *“The most effective manual or mechanical methods for cleaning and maintaining gear on one’s lease should be left up to the grower.” - JWE*
- *“Power washing the exposed area of a partially submerged cage would be a violation but it is not a violation if the cage is clear of the water surface?” - JWE*

Response:

- ✓ The Department is responsible for establishing an aquaculture program that is compatible with competing uses and native biota.
- ✓ Allowing power washing or electric cleaning of submerged gear would be ineffective and pose a threat to the natural bottom—suspending sediment and causing high-power disturbance of the benthos.
- ✓ Once the gear is fully out of the water, the most effective manual or mechanical methods for cleaning and maintaining gear on one's lease are left up to the grower.

Seed Importation

Questions/Comments:

- *"The technical criteria for pathogen assays for imported seed stock should be included in the regulations."* – JWE
- *"Only allowing cultivation of 1,000 oysters without a permit? Why so restrictive compared to Maryland or Virginia? Maryland is 3,000 and Virginia is much more. Theory is get as many oysters in the water as possible, as you know and restricting to 1,000 really limits enthusiasm, considering mortality rates. Gardeners want to help restore sanctuary oyster reefs, so why restrict them so?"* -MK
- *"Can a nursery be operated outside of the Delaware Inland Bays in tidal water and nursery stock be transferred to a lease once large enough?"* – JT
- *"Again, specific information about this item has been requested multiple times over the course of the past six months for planning and timeline purposes. What are the requirements to get the import permit from DNREC?"* - JT

Response:

- ✓ The Department gave serious consideration to the enabling legislation which directs the Department to, "...provide for the conservation, preservation and improvement of the wild shellfish resources..."
- ✓ A permit is required to import shellfish seed.
- ✓ The DFW considers the culture of more than 1,000 shellfish a commercial endeavor and requires a permit to allow monitoring and protection of human health and safety.
- ✓ The DFW discussed the 1,000 oyster threshold with the Shellfish and Recreational Waters Program staff to ensure that shellfish gardening in the Inland Bays would not be hampered by that number, and that this limit would identify commercial shellfish growers in the Inland Bays.
- ✓ Shellfish aquaculture has been authorized only in Delaware's Inland Bays—the passage of HB 160 allows for the cultivation of shellfish in Rehoboth Bay, Indian River Bay, and Little Assawoman Bay specifically. The proposed regulations address the purposes permitted by the legislation—so they too are Inland Bays specific. Shellfish leases and shellfish nurseries will therefore be confined to the Inland Bays and their respective tidal tributaries.
- ✓ Shellfish and the shellfish aquaculture industry are susceptible to a host of pathogens.

- ✓ Tests for pathogens continue to be developed and refined and the discovery of new threats continues (e.g. Attachment D).
- ✓ In the interest of protecting the native biota and the shellfish industry, the Department insists that maximum flexibility is necessary to adequately respond to new threats and take advantage of the most recent advances in pathogen detection. Such flexibility will be provided through the use of a seed importation policy rather than established in regulation.
- ✓ It is not uncommon for regulatory changes (if necessary) to take four to six months before becoming final. Such a timeline would be inadequate for changes in the requirements for pathogen assays. As in other states, Delaware has opted to exclude the technical criteria for pathogen assays from regulation in order to have the ability to adjust to emerging threats and new screening techniques.

Species Cultured

Questions/Comments:

- *"And as far as the clams, ...Eventually, I hope that you will let me grow it in Rehoboth Bay..." – SF (verbal at hearing)*
- *"Rehoboth and Indian River Bay should not be restricted to cultivation of one species (C. virginica). Any bivalve species indigenous to the Inland Bays with commercial value such as the bay scallop (Argopecten irradians), surf clam (Spisula solidissima), soft shell clam (Mya arenaria), and hard clam (Mercenaria mercenaria) etc should also be allowed." – JWE*
- *"Aquaculture of native hard clams should be allowed in Rehoboth and Indian River Bays " – CIB*
- *"DNREC has not demonstrated credible evidence as to why clams should not be grown in all three Bays"-CIB*

Response:

- ✓ The Department is required to, "...provide for the conservation, preservation and improvement of the wild shellfish resources..." and to, "...identify areas where shellfish aquaculture leases may be established that are compatible with commercial and recreational ...shellfishing...and native biota."
- ✓ Little Assawoman Bay does not contain a significant wild hard clam population nor the associated commercial and recreational fisheries.
- ✓ In order to best protect the natural hard clam resources, and to efficiently provide for a viable shellfish aquaculture industry in Delaware, the Department has determined that limiting the culture of hard clams to Little Assawoman Bay will reduce the risk of exposing the natural clams (and the associated fisheries) in Indian River and Rehoboth Bay to disease and poaching.
- ✓ The Department would consider the future culture of other species native to the Inland Bays conditioned on the Department's aforementioned legislative constraints and based upon the best available science.

- ✓ **Focusing culture activities on the Eastern oyster and hard clam offers the advantages of established markets, experimental evidence of success, and access to seed. These conditions will best ensure the development of a new successful cultured shellfish industry in Delaware.**

Lease Transfers/Operations Plan –

Questions/Comments:

- *“With regard to transfers of leases, why does the aquaculture operations plan have to remain the same...?” – CIB*
- *“If a grower decides to add a different species(ex. Hard clam) that is not included in the original plan, will he/she be allowed to do so?” – JT*
- *“Will the grower be held to the gear type proposed in the plan?” – JT*
- *“Is this item [18.1.1] stating that the grower must, after initial approval of a plan, continue to provide a[n] operations plan in perpetuity?” – JT*
- *“Requiring that the new lease holder use the exact same grow out methods, gear, etc. for a lease area is absurd. If this is required, why would a new operations plan be required? It would be EXACTLY THE SAME as the previous lease holder’s plan. “ - JT*

Response:

- ✓ **The DFW makes no assumption that equipment would be sold with the transfer of a lease.**
- ✓ **The DFW agrees that the entity receiving a transfer may wish to try something slightly (or even radically) different.**
- ✓ **The operations plan may be modified at any time (8.0).**
- ✓ **Given the provided flexibility, the transfer of leases or adding/removing cultured species, changing gear type should not be hampered.**
- ✓ **A leaseholder must have an operations plan (matching the operation of his shellfish lease) on record with DNREC for the entirety of the lease.**

Advisory Council

Questions/Comments:

- *“...and advisory panel of experienced stakeholders could be formed ...” – CIB*

Response:

- ✓ **The DFW does not object to the notion of an advisory group to provide input regarding regulations pertaining to shellfish aquaculture.**
- ✓ **The DFW maintains that such an advisory group should reflect a broad spectrum of the affected interests.**

Harvesting

Questions/Comments:

- *“Limiting mechanization of the harvesting process to winches to raise or lower cages is restrictive and ignores other labor saving practices. Tumblers, conveyors and other mechanical equipment can also be part of the oyster harvesting and grading process.” - JWE*
- *“Does this item [15.1 - mechanical means or mechanical gear to harvest] apply to processing equipment (pressure washers, tumblers, etc.) that would normally be mounted on a work boat?”- JT*

Response:

- ✓ **Limiting the mechanization of the harvesting process preserves the bottom of the Inland Bays, and limits conflict with commercial and recreational clambers.**
- ✓ **Tumblers and graders are not generally part of the harvesting process. If the tumbler and/or grader is separate from the actual harvest process, then the Department has not proposed limiting their use.**
- ✓ **This item does not apply to processing equipment (tumblers, conveyors, etc.) if the processing is a separate process from the harvesting—as in, the shellfish are not being removed from the water with a pressure washer, or tumbler, etc.**

Active Use

Questions/Comments:

- *“This item [16.2] should consider areas leased as emergency deep water placement for low tide/freezing conditions that would be needed to ensure survival of shellstock. While the area may not be used on a regular or even annual basis, it is prudent to maintain such an area for these situations.” - JT*

Response:

- ✓ **A grower could maintain a deep water placement area (or alternate grow site) so long as they meet the annual planting and harvest minimums after the second and third year, respectively.**
- ✓ **The planting and harvest minimums are averaged over the acres leased, so a grower could plant enough on their consistently-used leased land to allow for their additional acreage.**
- ✓ **The active use planting and harvesting requirements are included in the proposed regulations in order to ensure that the land leased for shellfish aquaculture is used to culture shellfish, and to prevent someone from leasing in order to exclude shellfish, or leased in order to speculate or “save” for some future use.**
- ✓ **Active lease requirements are present in other states.**
 - **Maryland, for example, requires at least ¼ of the leased area to be planted at a minimum density of 1,000,000 shellfish seed per acre or according to plans for lease use agreed to by the Department.**

SADA Locations – Little Assawoman Bay

Questions/Comments:

- *“Our home is bay front at 35548 Coastal Hwy, Fenwick Island, DE 19944 and we are opposed to the placing of markers in the bay. This will greatly impact our wonderful view and be a deterrent to future buyers and a devaluation of our property value.” – LA*
- *“I'm completely in favor of an oyster bed project but question the location of some of the beds. I frequent Fenwick Island State Park a lot and find it very convenient to go right across the street to Coastal Kayak when I want to enjoy the bay. Are you going to force them to close and/or move?” – JB*
- *“I would like to express my opposition to the current location of the SADA leases. LA-D and LA-C would have an immediate and direct negative impact on our existing business of providing non-motorized water craft rentals on Little Assawoman Bay... Our customers typically paddle once or twice a year and are definitely not experienced enough to maneuver through all of these obstacles.” – WM*
- *“Be advised that, with regard to aquaculture rules, regulations, and lease locations, locations of proposed beds in Little Assawoman Bay, specifically LA-C and LA-D, pose a hazard to navigation from sailboats and paddle craft from Coastal Kayak, Inc. As such, they represent a negative economic impact to the coastal community.” - RC(+62)*
- *“My concern about the administration of this program is about the locations of the proposed oyster beds. ... it shows their locations only on the most easterly side of the [Little Assawoman] bay. These locations unfairly impact the views and enjoyment of the bay to those residing on the barrier island. There are other uninhabited waterfront areas not limited to but including locations in front of Assawoman Wildlife Refuge, for placement of the beds. Furthermore, consideration should have been given to sending a formal letter to property owners being impacted by this program. Before leases are granted for farming of oysters, I feel more public hearings(with direct notification to property owners prior to the hearing) should be held. Let us move forward with this program with support and input from all ! “– RC(+62)*
- *“The location of the proposed SADA in the Little Assawoman Bay for LA-C and LA-D (map attached) are way too close to the shore line with a Kayak business named Coastal Kayak that has been there for 15 years.” – DB*
- *“I have just been informed that there is to be aqua culture leases for the purpose of oyster farming in the Little Assawoman bay. ... As a kayaker, paddleboarder, and sailor of this area, I am against the use of this area for that purpose. This area is a heavily used recreation location, with three launch sites available to put in (Fenwick Island and two in the state parks). – JB*
- *“It would be my recommendation that a minimum semi-circular area with a radius of .33 miles, with a preferable radius of .5 miles, be left free of aquaculture operations. Otherwise, aquaculture would cause a severe limitation on Coastal Kayak’s operations. This would rule out using all of LA-D and significantly reduce the area of LA-C.” – RC*

Response:

- ✓ Citing of the address 35548 Coastal Hwy, Fenwick Island, DE on an aerial image and using an approximation of the area covered by LA-B (the closest area), there would probably be some view of the aquaculture areas and associated marking; however, there is a fair distance between the two (Attachment E).
- ✓ Little Assawoman Bay is shallow, and has many diverse users.
- ✓ Unfortunately, the available acreage for shellfish aquaculture is limited by extensive closed shellfish areas due to bacteria levels exceeding human consumption standards.
- ✓ It is impossible to find areas in Delaware's Inland Bays where shellfish aquaculture leases would not impact other users, either sharing a physical area, or being able to be seen from a location.
- ✓ The DFW understands that the Inland Bays are densely populated and heavily used areas, and finding locations for shellfish aquaculture requires some give and take from the diverse users including potential aquaculturists.
- ✓ The CIB's Tiger Team proposed and the DFW adjusted the SADAs based on numerous (12) public Tiger Team meetings, input received at two DFW workshops, consideration of boat traffic, native biota, commercial and recreational fishing, and shellfish closures, and other considerations.
- ✓ The DFW will not require any business to close and/or move as a result of shellfish aquaculture.
- ✓ Much of the water surrounding Assawoman Wildlife Refuge is currently, or expected based on current testing to be classified as unsuitable for raising shellfish for consumption (due to bacteria levels and current FDA regulations).
- ✓ The western areas of Little Assawoman Bay are much more likely to have bacteria levels that are too high to allow shellfish aquaculture for human consumption.
- ✓ The DFW is requiring extensive markings in order to prevent other users of the bay from accidentally running into or becoming entangled in shellfish aquaculture gear or the markings.
- ✓ The required markings are intended to be highly visible to avoid navigation hazards.
- ✓ Growers are allowed to grow clams in Little Assawoman Bay, so it is possible that some acres would have a clam net and stakes only, but the gear used could include cages, racks and bags, and floating cages.
- ✓ The DFW will consider modifications to the marking requirements as shellfish aquaculture becomes more established.

Health Considerations

Questions/Comments:

- *"I've been following this process but DNREC has never clarified which state agency will safeguard human consumption standards by certifying quality of the oysters." - GR*

Response:

- ✓ Delaware's Division of Watershed Stewardship - Shellfish Sanitation Program is responsible for protecting public health by minimizing the risk of food borne illness from the consumption of shellfish
(<http://regulations.delaware.gov/AdminCode/title7/7000/7400/7402.shtml#TopOfPage>).
- ✓ Staff from the Shellfish Sanitation Program was integral to the regulatory development process and provided extremely valuable insights.
- ✓ The DFW's Enforcement Section continues to be responsible for enforcing the shellfish sanitation regulations.

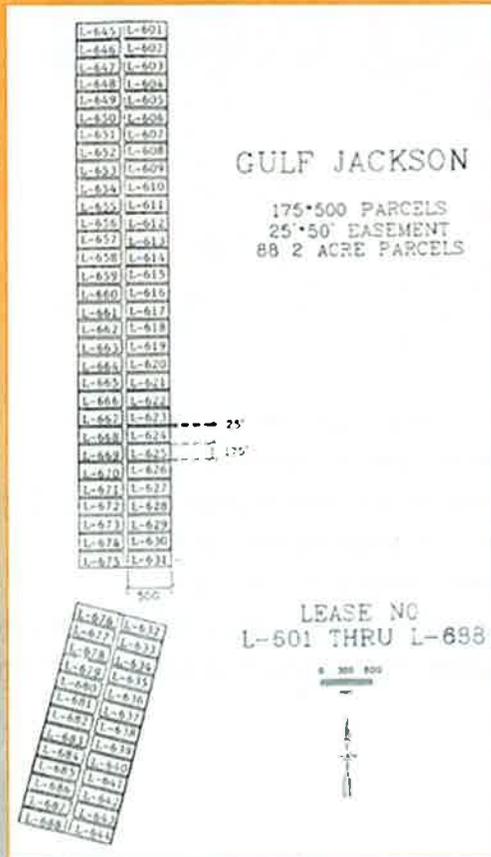
Attachment A. Materials indicating the use of buffers/easements/navigation corridors in by shellfish aquaculture programs outside of Delaware.

- Florida, in their “high density aquaculture areas” pre-grids and assigns aquaculture leases. These leases are typically 1.5-2 acre plots set in a grid with 25’-50’ easements between.

- <http://www.floridajobs.org/fdcp/dcp/waterfronts/Meetings/CedarKeyMeeting/Presentations/AquacultureInCedarKey.pdf>

Florida Hard Clam Aquaculture

Shellfish Leases



- Advantages of High Density Leases or Aquaculture Use Areas
 - Consolidates applications
 - Stimulates and supports development in specific regions
 - Facilitates resource surveys
 - Reduces survey costs
 - Reduces potential adverse environmental impacts
 - Reduces potential user conflicts
 - Encourages compliance with regulatory policies
 - Facilitates law enforcement and security

- New York (Suffolk County) sets their individual leases in a grid pattern with buffers between each grid.

- <http://www.suffolkcountyny.gov/Departments/Planning/Divisions/EnvironmentalPlanning/AquacultureLeaseProgram/ProgramMaps.aspx>



- Maine considers each proposed lease area, and may require that multi-acre leases include navigation corridors be planned, mapped, and incorporated from the conception of the lease. They may also require the leaseholder permit moorings for nearby landowners, leave open space for commercial or recreational fishing, and a number of other conditions that increase public access to a leased area.
 - <http://www.maine.gov/dmr/aquaculture/leaseinventory/shellfishleases.htm>
 - <http://www.maine.gov/dmr/aquaculture/FOFDecisionDAMEL3MookSeaFarms2011-08.pdf>

Examples:

Glidden Point Oyster Company

Barbara Scully
 707 River Road
 Edgcomb, ME 04556
 207-633-3599 Fax:

Description: West of Prentiss Island Damariscotta River Bristol and S. Bristol Lincoln County

Species Cultivated: oyster eastern / american (*Crassostrea virginica*) - oyster european flat (*Ostrea edulis*)

Cultivation Technique(s): Bottom

Conditions: Navigation, lobster fishing and recreational boating and fishing shall be allowed on the open areas of the lease; the lease area shall be marked in accordance with U.S. Coast Guard and Department of Marine Resources regulations Chapter 2.80; the leaseholder shall accommodate one or more moorings within the lease area under the following circumstances: if a landowner, in consultation with the Harbormaster, exhausts all possible mooring locations outside the lease area, they may request that the leaseholder permit a mooring within the boundaries of the lease site. The mooring shall only scour a 20-ft. radius with chain and scope and shall be placed in the area of the proposed lease determined by the leaseholder. The leaseholder shall be given ample notification as to the placement of the mooring in order to move product from the area.

Mr. Mook testified at the November 2 hearing about the revisions shown in Exhibit 16; these changes will be discussed in more detail below in the sections on riparian access (3A) and navigation (3B). Taken together, however, the revisions make it apparent that if this application to use oyster cages on the DAM EL2 northwest tract is granted, that tract and the DAM EL site, where oyster cages are already in use, will be operated essentially as a single lease site. Mr. Mook's commitment to maintain navigation corridors and areas available for moorings on both sites and to rearrange gear at the north end of DAM EL as necessary to accommodate navigation across both sites indicates a need for the sites to be subject to a common set of lease conditions. In light of this, combining the two leases into a single lease with a single set of conditions appears to be the most effective and efficient way for the Department to administer the leases at this location.

Mook Sea Farms, Inc.

William Mook
321 State Route 129
Walpole, ME 04573
207-563-1456 Fax

Description: East of Little Point Damariscotta River Newcastle Lincoln County

Species Cultivated: oyster eastern / american (*Crassostrea virginica*) - oyster european flat (*Ostrea edulis*) - clam surf / hen (*Spisula solidissima*) - clam northern quahog / hard (*Mercenaria mercenaria*) - clam soft (*Mya arenaria*) - scallop bay (*Argopecten irradians*)

Cultivation Technique(s): Bottom - Suspended

Conditions: 1. The lease site must be marked in accordance with both U.S. Coast Guard requirements and DMR Rule 2.80 using devices that are readily visible to mariners in all sea conditions. 2. Navigation corridors must be maintained free of gear as depicted on Exhibit 16 and at the northeast corner of the DAM EL lease site, which is the southwest tract of the new, combined lease. 3. Moorings may be set within the navigation corridors on the lease site as authorized by the Newcastle harbormaster. 4. The "Hale mooring" must be accommodated in its present location (44° 01' 16.68"N, 69° 32' 38.34"W) on the southwest tract of the lease, formerly lease DAM EL. 5. The lessee may temporarily displace and relocate moorings on the lease site after reasonable notice to and authorization from the Newcastle harbormaster. 6. The lessee must promptly alter or remove gear on the lease site at the harbormaster's request if it is outside the lease boundaries or if it interferes with navigation in the open areas of the lease site which are to be left gear-free

Mook Sea Farms, Inc.

William Mook
321 State Route 129
Walpole, ME 04573
207-563-1456 Fax 207-586-5210

Description: North of Perkins Point Damariscotta River Newcastle Lincoln County

Species Cultivated: oyster eastern / american (*Crassostrea virginica*) - oyster european flat (*Ostrea edulis*) - clam surf / hen (*Spisula solidissima*) - clam northern quahog / hard (*Mercenaria mercenaria*) - clam soft (*Mya arenaria*)

Cultivation Technique(s): Bottom - Suspended

Conditions: 1. The lease site must be marked in accordance with both U.S. Coast Guard requirements and DMR Rule 2.80. 2. Navigation corridors must be maintained free of gear as depicted on Exhibit 17. 3. A maximum of four single-vessel moorings may be set within the widest navigation corridor on the lease site as designated by the Newcastle harbor master, one for each of the piers lots 60, 61, 62 and 63. 4. The Lessee may

Muscongus Bay Aquaculture

Antonina Simmons
PO Box 158
Bremen, ME 04551
207-529-4100 Fax:

Description: Dodge Point Damariscotta River Newcastle Lincoln County

Species Cultivated: oyster eastern / american (*Crassostrea virginica*) - oyster european flat (*Ostrea edulis*)

Cultivation Technique(s): Bottom

Conditions: Navigation and recreational boating and fishing shall be allowed on the open areas of the lease; the lease area shall be marked in accordance with U.S. Coast Guard and Department of Marine Resources regulations Chapter 2.80; when people are present on the beach or in the water at Doge Point Public Reserved Land, the leaseholder shall not drag the lease site unless it is on an outgoing tide; a Limited Purpose Aquaculture

Petit Manan Seafood

Charles Wallace
852 US Route 1
Steuben, ME 04680
207-546-2272 Fax

Description: Pinkham Stream Pinkham Bay Steuben Washington County

Species Cultivated: oyster eastern / american (*Crassostrea virginica*)

Cultivation Technique(s): Bottom - Suspended

Conditions: 1. The lease site shall be marked in accordance with the requirements of the U.S. Coast Guard and DMR Rule Chapter 2.80. 2. Fishing and boating shall be allowed in the open areas of the lease. 3. The lower tract, Tract 1, shall be used for bottom culture only and shall not contain any structures other than marking buoys as required under condition #1. 4. The lessee shall consult with the Maine Department of Inland Fisheries and Wildlife before using any form of predator control in the lease area. 5. The lessee shall maintain a 10-foot wide corridor of open navigable water between the floating gear on the upper tract, Tract 2, and the eastern shore of the stream.

Attachment B. Virginia's lease marking regulation.

4VAC20-1130-50. Special Conditions.

J. In addition to the marking of the boundary of the lease, required by Regulation 4VAC20-335-10 et seq., the boundary of the area containing the structures shall be identified with markers meeting the description for markers identified in Regulation 4VAC20-290-30, while structures are located on the bottom. At intervals no smaller than 150 feet and along the perimeter of the area containing the temporary protective enclosures, the leaseholder shall place placards, constructed of a durable material, which shall be at least four feet above the mean high water line, and shall conform to the description established by the Commissioner.

**Attachment C. Material in support of the value of the commercial clam fishery to Delaware's
Inland Bays (Indian River & Rehoboth Bays).**

Year	Number of Trips	Little Necks	Top Necks	Cherry-stones	Chowder Clams (Quohog)	Number of Hard Clams Harvested	Number of Hard Clams Harvested/Trip	Ex-vessel Value	in Ex-vessel Value from the Previous Year
2000	1,654	566,784	-	326,776	291,036	1,184,596	716	\$128,650	-
2001	1,740	603,672	20,378	612,249	296,203	1,532,502	881	\$157,335	22.3%
2002	2,363	667,895	4,378	1,107,970	686,638	2,466,881	1,044	\$256,520	63.0%
2003	2,102	512,256	5,299	968,461	549,223	2,035,239	968	\$215,829	-15.9%
2004	2,288	458,829	-	927,538	434,623	1,820,990	796	\$197,143	-8.7%
2005	2,409	487,248	-	1,022,825	561,694	2,071,767	860	\$220,259	11.7%
2006	2,384	386,187	-	853,059	548,684	1,787,930	750	\$199,641	-9.4%
2007	2,247	393,132	1,136	905,786	239,911	1,539,964	685	\$181,350	-9.2%
2008	1,570	216,506	74,120	630,008	257,565	1,178,199	750	\$135,502	-25.3%
2009	1,495	219,144	61,232	455,270	209,874	945,519	632	\$111,860	-17.4%
2010	942	119,528	147,765	488,379	184,885	940,557	998	\$110,379	-1.3%
2011	1,529	148,303	201,223	616,118	279,170	1,244,814	814	\$146,004	32.3%
2012	1,403	87,896	225,736	530,051	177,439	1,021,122	728	\$122,920	-15.8%
2013	1,461	274,686	252,579	636,212	260,639	1,424,116	975	\$176,761	43.8%

Indian River Bay

Month	Trips	Chowder Clams		Cherry-stone		Top Neck		Little Neck		Total Hard Clams	
		Number	Value	Number	Value	Number	Value	Number	Value	Number	Value
January	96	17,804	\$1,252	36,786	\$3,679	17,601	\$3,054	5,499	\$935	77,690	\$8,920
February	55	10,590	\$741	22,830	\$2,283	10,132	\$1,724	3,986	\$678	47,538	\$5,426
March	41	4,665	\$330	13,633	\$1,370	8,259	\$1,404	2,712	\$461	29,269	\$3,565
April	57	8,149	\$570	21,765	\$2,177	12,727	\$2,164	4,351	\$740	46,992	\$5,650
May	92	17,294	\$1,460	37,746	\$3,937	21,619	\$3,677	6,424	\$1,092	83,083	\$10,165
June	98	19,227	\$1,555	43,472	\$4,782	18,679	\$3,299	10,817	\$1,639	92,195	\$11,275
July	131	18,636	\$1,556	57,506	\$6,285	43,333	\$7,315	13,599	\$2,389	133,074	\$17,545
August	125	17,234	\$1,379	65,303	\$7,183	31,811	\$5,211	17,553	\$2,880	131,901	\$16,653
September	99	18,806	\$1,508	39,127	\$4,284	18,983	\$3,036	8,222	\$1,316	85,138	\$10,144
October	78	21,355	\$1,708	21,040	\$2,327	10,921	\$1,747	6,407	\$1,025	59,723	\$6,807
November	67	14,494	\$1,159	22,420	\$2,462	10,865	\$1,743	3,722	\$595	51,501	\$5,959
December	103	18,784	\$1,479	33,590	\$3,621	13,277	\$2,169	4,678	\$771	70,329	\$8,040
Totals	1,042	187,038	\$14,697	415,218	\$44,390	218,207	\$36,542	87,970	\$14,520	908,433	\$110,150

Rehoboth Bay

Month	Trips	<u>Chowder Clams</u>		<u>Cherrystone</u>		<u>Top Neck</u>		<u>Little Neck</u>		<u>Total Hard Clams</u>	
		Number	Value	Number	Value	Number	Value	Number	Value	Number	Value
January	11	1,357	\$95	3,313	\$331	193	\$33	802	\$136	5,665	\$597
February	12	1,564	\$109	5,378	\$538	305	\$52	896	\$152	8,143	\$852
March	31	4,963	\$351	15,250	\$1,533	165	\$28	5,168	\$879	25,546	\$2,790
April	33	5,370	\$376	19,806	\$1,981	1,818	\$309	90,188	\$15,332	117,182	\$17,998
May	50	4,737	\$400	28,563	\$2,979	42	\$7	76,293	\$12,970	109,635	\$16,356
June	35	4,943	\$400	19,280	\$2,121	147	\$26	5,600	\$848	29,970	\$3,395
July	50	7,752	\$647	34,155	\$3,733	7,439	\$1,256	5,096	\$895	54,442	\$6,532
August	33	3,607	\$289	23,057	\$2,536	11,058	\$1,811	1,798	\$295	39,520	\$4,931
September	34	6,199	\$497	21,974	\$2,406	4,740	\$758	242	\$39	33,155	\$3,700
October	44	7,822	\$626	31,627	\$3,498	5,000	\$800	129	\$21	44,578	\$4,944
November	27	5,240	\$419	14,879	\$1,634	1,934	\$310	35	\$6	22,088	\$2,369
December	15	1,501	\$118	3,712	\$400	1,531	\$250	469	\$77	7,213	\$846
Totals	375	55,055	\$4,327	220,994	\$23,690	34,372	\$5,641	186,716	\$31,650	497,137	\$65,308

Attachment D. Evidence of newly detected pathogens and assay recommendations.

Oyster Pathogen Advisory - Message (HTML)

Message: McAfee E-mail Scan

Ignore, Delete, Reply, Forward, More, Reply & Delete, Create New, Move, Move, Mark, Categorize, Follow Up, Translate, Related, Select, Zoom

From: John Ewart <cewart@udel.edu>
To: Clark, John (DMREC); Michels, Stewart (DMREC); Heron, Zina O (DMREC)
Cc:
Subject: Oyster Pathogen Advisory

Sent: Thu 9/12/2013 11:29 AM

John/Stew/Zina - FYI see advisory on *Bonamia axillosa* <http://darc.cms.udel.edu/liba/BonilliosaAdvisory.pdf>

recently detected and not causing a problem with oyster populations but VIMS and Rutgers are recommending including in assays for interstate transfers of shellstock

John

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Resource Center Home page: <http://darc.cms.udel.edu>

Attachment E. Approximate location of SADA LA-B relative to 35548 Coastal Hwy, Fenwick Island, DE.



