

Conflict and Progress in Maryland's Aquaculture Leasing Program



Don Webster
Regional Specialist
University of Maryland Extension
College of Ag & Natural Resources

Presentation Goal – To Show

- “Aquaculture IS Agriculture”
- Aquaculture is expanding with strong growth
- Aquaculture can add thousands of acres of new production to the Maryland agriculture industry
- Aquaculture provides benefits to terrestrial agriculture because of nutrient uptake and use
- Aquaculture adds ***economic*** and ***employment*** growth while aiding the ***environment***
- Aquaculture should be supported by farmers

The Eastern Oyster

Crassostrea virginica



Our native oyster and the only one we may legally raise in most East and Gulf Coast states

Oysters Provide Many Benefits

- Oysters are prolific filtration “machines”
- Oysters use the phytoplankton that results from our nutrient enrichment problems
- Oysters are reef forming animals
- Oyster reefs provide habitat for many other important species
- Oysters are a ‘keystone’ species
- Oysters are tasty and nutritious

2 to 3 weeks

About 12 hours

Trochophore

Veliger

Pediveliger

Fertilized Egg

**SETTING
Few Hours**

Unfertilized Egg

Early Spat

SPAWNING

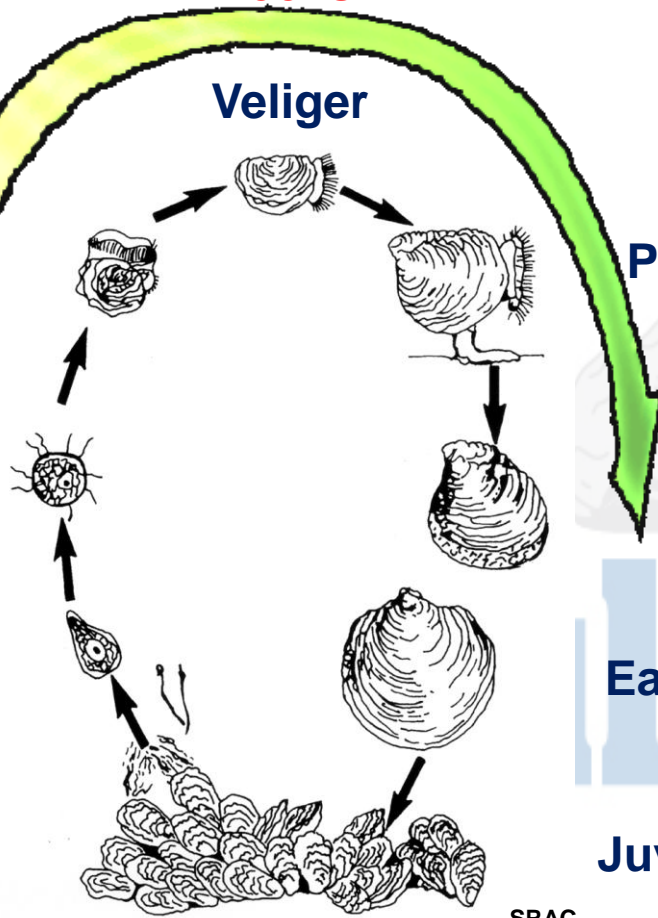
Juveniles

1 Year

MID JUNE TO AUGUST

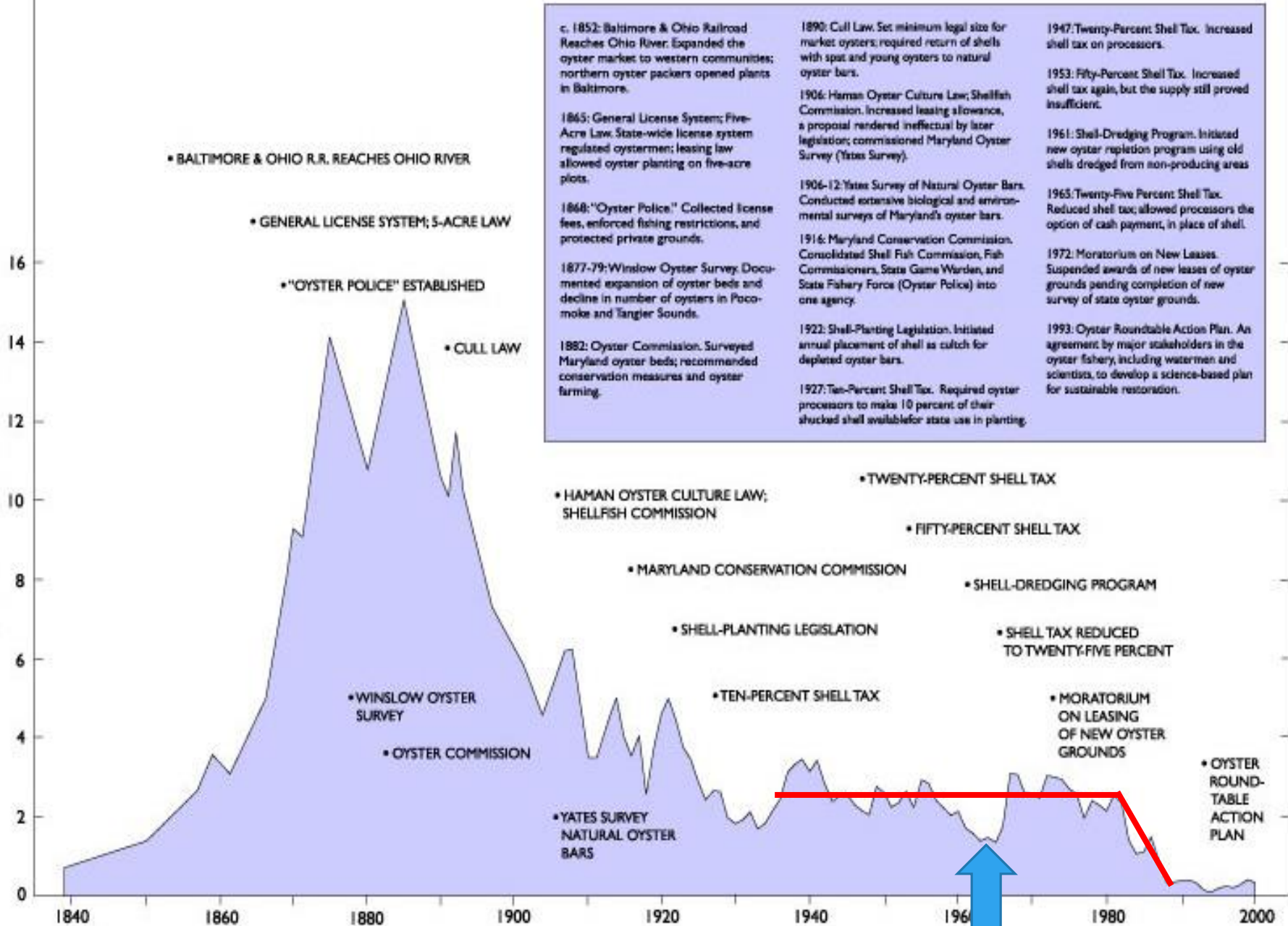
**Adult
Oysters**

SRAC



A History of Oyster Harvests and Laws in Maryland

MARYLAND BUSHELS (MILLIONS)



c. 1852: Baltimore & Ohio Railroad Reaches Ohio River. Expanded the oyster market to western communities; northern oyster packers opened plants in Baltimore.

1865: General License System; Five-Acre Law. State-wide license system regulated oystermen; leasing law allowed oyster planting on five-acre plots.

1868: "Oyster Police." Collected license fees, enforced fishing restrictions, and protected private grounds.

1877-79: Winslow Oyster Survey. Documented expansion of oyster beds and decline in number of oysters in Pocomoke and Tangier Sounds.

1882: Oyster Commission. Surveyed Maryland oyster beds; recommended conservation measures and oyster farming.

1890: Cull Law. Set minimum legal size for market oysters; required return of shells with spat and young oysters to natural oyster bars.

1906: Haman Oyster Culture Law; Shellfish Commission. Increased leasing allowance, a proposal rendered ineffectual by later legislation; commissioned Maryland Oyster Survey (Yates Survey).

1906-12: Yates Survey of Natural Oyster Bars. Conducted extensive biological and environmental surveys of Maryland's oyster bars.

1916: Maryland Conservation Commission. Consolidated Shell Fish Commission, Fish Commissioners, State Game Warden, and State Fishery Force (Oyster Police) into one agency.

1922: Shell-Planting Legislation. Initiated annual placement of shell as cultch for depleted oyster bars.

1927: Ten-Percent Shell Tax. Required oyster processors to make 10 percent of their shucked shell available for state use in planting.

1947: Twenty-Percent Shell Tax. Increased shell tax on processors.

1953: Fifty-Percent Shell Tax. Increased shell tax again, but the supply still proved insufficient.

1961: Shell-Dredging Program. Initiated new oyster repletion program using old shells dredged from non-producing areas.

1965: Twenty-Five Percent Shell Tax. Reduced shell tax; allowed processors the option of cash payment, in place of shell.

1972: Moratorium on New Leases. Suspended awards of new leases of oyster grounds pending completion of new survey of state oyster grounds.

1993: Oyster Roundtable Action Plan. An agreement by major stakeholders in the oyster fishery, including watermen and scientists, to develop a science-based plan for sustainable restoration.

Early Lease Laws

- ***1830 – the “One Acre Law” allowed residents to use an acre of bottom to raise oysters***
- **Other early states included New Jersey and Rhode Island with Connecticut creating a 2 acre program that was changed to larger plots in 1872 when a grower demonstrated the profitability of deeper waters shelled to attract natural spat**

Changing Laws

- **1867 “Five Acre Law”**: licensing system and expanded aquaculture but growers didn’t know how to operate effectively
- **1884 Oyster Commission**: survey of grounds; recommendations on conservation and expanding aquaculture
- **1906 Haman Act: Shellfish Commission; “modern” lease program; Yates Survey of Natural Oyster Bars**

HAMAN ACT LED TO

- Minimum and maximum acreage sizes
- Only one lease per person
- Maryland residents only
- Could not be a corporation
- Transfers allowed
- Allowed temporary bedding
- Creek opening of <100 yards wide – could not be leased but riparian owner could use to raise oysters same as a lease

Through the Century

- **1912 Price-Campbell Bill: improved Haman; increased acreage; allowed use of dredges**
- ***1914 Shepherd Act: protests allowed to block leases by opinion; effectively stopped many leases; increased NOBs***
- **1916 Maryland Conservation Commission: consolidated several advisory groups and police operations**

Status by the 1970's

- Minimum and maximum acreage sizes by location
 - Chesapeake Bay (outside county waters) 5 to 500 acres
 - Tangier Sound 1 to 100 acres
 - Worcester County 1 to 50 acres
 - All other counties 1 to 30 acres
- Counties having been closed by legislative action
 - Charles (except Patuxent River), Kent, Queen Anne's, Talbot, Dorchester and Somerset
- Transfers in closed counties still allowed

Lease moratorium

- Passed by the General Assembly in 1972
- No further leasing until a resurvey of oyster grounds had been completed
- Used to stop leasing because...
- Few funds were provided to the DNR for the purpose of completing the survey
- As interest in leasing grew again, survey was completed but...
- More acreage of NOBs than before was created by the straightening of existing lines

Later that Decade

- **1978 Maryland Oyster Resource Expansion (M.O.R.E.) Task Force**
 - **Chaired by DECD's Asst. Secretary William Pate**
 - **Led to continued disputes between watermen and growers engaged on the panel**
 - **Resulted in minority report from an oyster grower**
 - **Results provided at the "Oyster Culture in Maryland '79" conference in Annapolis by Pate noting no progress would be made until industry factions began to compromise with each other**

1992 Oyster Roundtable

- Formed by DNR Secretary Torrey Brown
- Professionally facilitated
- Membership of widely diverse interests
- Rule -> total consensus or no agreement; “No one gets all; all get some”; had to agree
- Led to action plan that developed **Oyster Recovery Partnership, tributary zones, managed reserves** and other concepts

2003 Task Force on Seafood and Aquaculture

- Created by General Assembly
- Two sections with 44 members
 - a) Seafood and b) Aquaculture
- 18 month investigation
- Supported by funding for an Aquaculture Development Conference by Director of the MD Ag Experiment Station
- Legislation submitted to 2005 legislature based on Task Force analysis of problems

Analysis of Problems

- Lack of coordination between agencies
- Untimely delays in off bottom permits
- Historic disregard for private culture
- Lack of input to highest levels of state government on regular basis
- Constrained by archaic laws and regulations accumulated over years
- Previous legislation only defined roles and responsibilities of MDA, DNR, and UMD

Aquaculture Review Board

- Membership (initial) – state agencies responsible for permitting (Agriculture, Natural Resources, Health & Mental Hygiene, Environment, Board of Public Works)
- Now minus BPW and Ag but added NOAA, USACOE & USCG
- Regular meetings to keep permits moving
- Pre-application meeting for applicants
- Chaired by DNR Aquaculture Division Director
- *Coordinate, streamline, track and document*

Aquaculture Coordinating Council

- **17 members**
 - MDA, DNR, MDE, DHMH, DBED, NRP, UMCP, UMCES, UME, 3 TFL, 3 Industry, House, Senate
- **Statutory advisory body by act of the legislature**
- **Annually reports to the Governor and chairs of legislative environmental committees**
- **Tasked with wide range of issues including Best Management Practices**
- **Looking to expand by legislative act in 2016 by adding seats for the MD Farm Bureau and Oyster Recovery Partnership**

August 2008

Governor O'Malley visits shellfish farms and calls for revised lease laws to spur development of aquaculture



May 2009

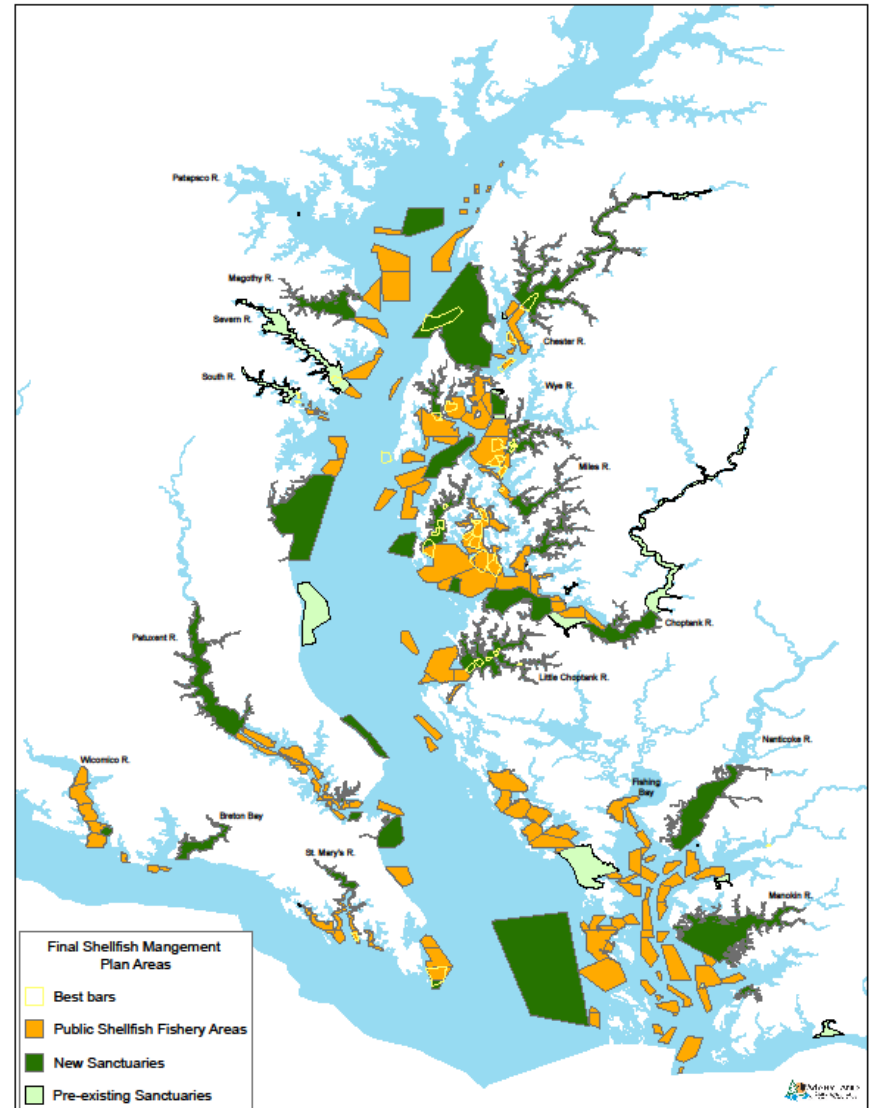
Lease law revision bill signed after unanimous passage by the legislature

New Lease Law Provisions

- **Goal** – MORE oysters **in** the bay; more oysters **out** of the bay
- Changed from **legislative** to **regulatory** management
- Deleted **all county prohibitions** on leasing
- Deleted **acreage limitations**
- Allowed **corporations** to hold leases
- Allowed **nonresident** leasing
- Replaced with **“use or lose”** program with production and reporting requirements
- Combined with **oyster management plan**

Oyster Management Plan

- Expanded sanctuaries
- Public Shellfish Fishery Areas (PSFA) created for harvest instead of NOBs
- Study areas to test effects of power dredging
- Expanded technology for theft prevention
- New laws targeted theft
- New applications accepted beginning in September 2010



Support Programs for Development

- **Oyster Aquaculture Education and Training Program**
 - UMD Extension and UMCES Horn Point
- **Low Interest Financing & Grants**
 - MARBIDCO and USDA/NRCS
- **Remote Setting Training for Seed Production**
 - Oyster Recovery Partnership. Horn Point & UMD Extension
- **Business Innovation Research**
 - Maryland Technology Extension Service
- **Promotion and Marketing**
 - DNR Fisheries Marketing Program

Remote Setting Training (RST) Program

- Setting systems in two-week blocks June - Sept
- No charge for use; larvae provided at NO COST
- Grower provides aged, clean containerized shell; labor to move through the process and clean tanks at end
- Assistance from Horn Point Hatchery crew to set and determine success
 - 2011 – 5 locations; 12 growers
 - 2012 – 6 locations; 18 growers
 - 2013 – 9 locations, 27 growers
 - 2014 – 9 locations; 31 tanks
 - 2015 – 9 locations; 32 tanks

2011 Initiatives

- Reorganized state government
- Moved authority from MDE and MDA
- Centralized aquaculture permitting
- Created Aquaculture Division in DNR
 - Karl Roscher, Aquaculture Division Director
 - six staff positions for support
- Regional General Permit 1 (RGP-1) from US Army Corps Of Engineers
 - 50 acre bottom lease
 - 5 acre bottom cages
 - 3 acre surface float
 - 20,000 acre total

2012 Initiatives

- Set Maximum seed size as 1"
- Set Minimum aquaculture oyster as 2" in response to expanding raw bar demand
- Shortened & combined public notification period
- Developed new water column lease application fees and annual rental rate (\$300 & \$25/ac)
- Expanded setting systems in RST program
- Expanded Education & Training Program
- Goal - Shorten permit process to 120 days

Laws pertaining to aquaculture

- Natural resources article 4-11-a
 - General industry guidelines for the department
 - Lease application review procedures and guidelines
 - General provisions
 - Demonstration leases
- In addition to a md lease, permit required from US Army Corps Of Engineers, Baltimore District
 - Rivers and harbors act of 1899
 - Section 404 of the clean water act
 - RGP-1 is Up for renewal in 2016; political leaders assisting with making the federal relationship work more smoothly

GETTING A LEASE

- OYSTER LEASE SITING TOOL ON DNR WEBSITE – SHOWS WHERE YOU CAN'T LEASE
- FEES - \$300 APPLICATION; \$3.50/AC BOTTOM, \$25/AC WATER COLUMN
- FILE PRODUCTION PLAN; REPORT AGAINST IT ANNUALLY
- CHECK FOR NATURAL RESOURCES VIOLATIONS
- State AGENCY REVIEWS
- PUBLISHED OVER A TWO WEEK PERIOD
- PROTESTS RECEIVED AND HANDLED BY DNR AQUACULTURE DIVISION AND OFFICE OF THE ATTORNEY GENERAL

Areas that cannot be leased

- Public shellfish fishery areas (PSFA)
 - Can be petitioned for change based on **quantitative means**
- Yates bars within sanctuaries; otherwise 10% of area (to begin)
- Harvest reserves
- Submerged aquatic vegetation (SAV) beds
- 50' from shoreline unless approved by owner at time of initial application
- 150' clearance from registered pound net sites
- 150' clearance from Federal navigation channels and buoys
- Restricted waters (without a relay site in approved water)
- Prohibited water classifications and buffers around marinas
- Commercial fishing conflicts

Public Notification

- Publication occurs through local newspaper, DNR website and other appropriate means
- Within 30 days of last advertisement any person who has a “right, duty, privilege, or interest that is different from that held by the general public and may be adversely affected by the proposed lease may file a petition with the department protesting issuance...’
- Protest is heard in accordance with the administrative procedures act under Title 10, Subtitle 2 of the state government article

LEASE PROTESTS

- Vast majority are advertised and issued without comment
- Of those protested, two main categories of issues:
 - Riparian/shoreline landowners concerned about enjoyment of their property and impact on view and recreational use
 - Commercial watermen concerned about fishing impacts
- Recent issues for Aquaculture Coordinating Council
 - Leases in Commercial clamming areas
 - Coexisting with waterfowl hunting and blinds
 - Leases adjoining parks and wildlife management areas
 - Assessing development of a 'merit' process for protests

LEASE PROTESTS

- Protest received – contact protestant to clarify concerns and urge applicant to reach out for possible resolution
- Schedule a public information meeting about lease with posters, DNR personnel and applicant to address questions
 - Many protests are withdrawn after this stage
- May invite protestant(s) and applicant to a meeting to address issues and attempt solution through informal conference; these have often been successful
- If resolution is not possible, DNR transmits protest to the Maryland Office of Administrative Hearings for adjudication; 15 to date
- DNR has been successful in defending in court

Recent Major Case

- Worcester county – 18.7 acres of leases
- 25 neighborhood residents and 2 watermen protested regarding negative impacts on navigation and fishing
- ALJ held issuance would violate public trust doctrine, impacting protestants ability to navigate and fish
- Case appealed to Anne Arundel Circuit Court which reversed the decision holding the lease legal
- Appealed to Court of Special Appeals which held the lease legal, reasoning that DNR ensures compliance with statutory requirements of the General Assembly and is not required to apply additional analysis of impacts to navigation and fishing under the public trust doctrine

Time to completion

- 2009 – lease applied for; area revised 3 times to address concerns and 3 public hearings held; many state & federal agencies involved in project review
- February 2013: OAH contested case hearing
- March 2014: Circuit Court judicial review hearing
- February 2015: Court of Special Appeals hearing
- April 2015: Court of Special Appeals decision issued
- August 2015: Court of Appeals denies to hear additional appeal; decision stands

How are we doing?

- ✓ Made lease laws more attractive for investment
- ✓ Created single point and assistance for applicants
- ✓ Lowered legal size limits for aquaculture oysters
- ✓ Authority to issue separate nursery permits; exemption from NPDES permit recently granted by MDE
- ✓ OAG gained important legal precedent
- ✓ Revised 'active use' provisions and shellfish aquaculture harvester permits
- ✓ Watermen are part of almost 66% of applications
- ✓ New processing plants established; existing expanding

How are we doing?

Bottom Leases (SLL)

- 294 leases / 4,389 acres
- Dorchester, St. Mary's, Talbot highest of 11
- Spat on shell on bottom
- Hatchery seed from remote setting spat on shell production; natural seed
- Diploid and some triploid
- Processing and half shell

Water Column leases (WCL)

- 63 active leases / 294 acres
- St. Mary's, Dorchester, Talbot highest of 11
- Cages, floats & longlines
- Cultchless seed from downwellers; contained production gear
- Triploid and some diploid
- Half-shell and processing

Oyster Aquaculture Components

- **Broodstock Conditioning**
 - Can be simple or complicated
- **Spawning**
 - Mass Spawn or Strip Spawn
- **Larval Rearing**
 - Expensive, requires training and facilities
- **Algae Production**
 - Expensive, requires training and facilities
- **Setting**
 - Should be simple, equipment, training, cost
- **Nursery**
 - Optional
- **Grow-out**
 - Management depends on method and markets

University of Maryland Horn Point Hatchery



Original oyster hatchery built 1975 after Tropical Storm Agnes to develop research, outreach and education for aquaculture

Replaced by state-of-the-art Aquaculture & Restoration Ecology Lab (AREL) in 2003 boosting production to billions of spat and larvae for restoration and industry



Remote Setting Tank



WHAT HAS BEEN DONE TO DATE

- ✓ Renovated state laws and regulations inhibiting private production
- ✓ Addressed acreage limitations, prohibition of corporations, NOB exclusions
- ✓ Addressed water column issues
- ✓ Streamlined permitting
- ✓ Attracted investment capital
- ✓ Modified production criteria and permits
- ✓ Increased acreage and production annually

NEEDED TO DO: RESEARCH AND DEVELOPMENT

- Develop private hatcheries
- Create methods for large-scale shell renovation
- Expand oyster lines and field trial
- Develop additional aquaculture crops
- Develop nutrient trading credits and payments
- Develop mechanized processing
- Create processed products for large-scale use
- Integrate aquaculture with erosion control
- Develop better harvest methods and equipment

“The Oyster Team”

Agencies, institutions and NGOs working together for the future of the industry



MARBIDCO
growing rural ventures™



STATE OF MARYLAND
DHMH



SPECIAL RECOGNITION TO

MARYLAND DEPARTMENT OF NATURAL RESOURCES

KARL ROSCHER, DIRECTOR, AQUACULTURE DIVISION
JULIA G. SOLOMON, OFFICE OF THE ATTORNEY GENERAL
SHARA M. ALPERT, OFFICE OF THE ATTORNEY GENERAL

UNIVERSITY OF MARYLAND HORN POINT HATCHERY

DON "MUTT" MERITT AND HIS CREW OF DEDICATED WORKERS WITH
SPECIAL RECOGNITION TO STEPHANIE ALEXANDER,
STEVEN WESCHLER AND ALAN ROACHE

UNIVERSITY OF MARYLAND EXTENSION

MATT PARKER, AQUACULTURE BUSINESS SPECIALIST
SHANNON DILL, AGRICULTURE SCIENCE EDUCATOR

Contact Information

Maryland
Aquaculture

Maryland



UNIVERSITY OF
MARYLAND
EXTENSION

Solutions in your community

Don Webster

Regional Specialist

University of Maryland Extension

Wye Research & Education Center

Queenstown Md

Phone: 410-827-8056

Email: dwebster@umd.edu