

Atlantic Coastal State Shellfish Farming Lease or Permit Regulations

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Each Atlantic coastal state has developed distinct laws, rules, policies or programs governing leasing, licensing, or permitting of sovereign submerged lands for shellfish (oyster, clam, or mussel) culture. In addition to errors associated with interpreting state programs and summarizing complex programs, state laws, regulations and programs change frequently. This summary was completed on January 30, 2014 and readers are advised to contact the lead state agency for current information. State summaries are presented from north (Maine) to south (Florida) for the Atlantic Coast.

All states examine the proposed activities and location for potential conflicts with or impacts on other users (e.g., navigation, fishing, recreation, littoral access), natural resources (e.g., submerged aquatic vegetation, species listed under the Endangered Species Act, shellfish or fish stocks, live hard bottom) and the chemo-physical characteristics of the site (e.g., sediment, water quality, currents). Applicants may have to survey and describe potential conflicts or impacts and/or a state agency(ies) examines a production plan and conducts a site inspection. In all instances, the public is notified and invited to comment on the proposed shellfish farm.

Creating a structure and dredging and filling in U.S. navigable waters triggers permits from the U.S. Army Corps of Engineers and U.S. Coast Guard. Certain states and U.S. Army Corps of Engineers developed programmatic general permits, and as noted in the narrative, if the activity proposed by the shellfish farmer is allowable under a programmatic general permit held by a state, then the U.S. Army Corps of Engineers will issue an approval letter or the restrictions imposed by the state will satisfy the programmatic general permit. Relative to navigation, most states inform an off-bottom oyster farmer that they must acquire a permit from the U.S. Coast Guard for Private Aids to Navigation to warn mariners not to enter a marked area because of the navigational hazard posed by floating or submerged culture gear; however, one state does not allow the use of production gear that will create a navigational hazard and another state requires that an application for Private Aids to Navigation be submitted to a state agency so that the agency will inform the U.S. Coast Guard.

Shellfish production and distribution intended for human consumption is governed by the National Shellfish Sanitation Program (<http://www.fda.gov/food/guidanceregulation/federalstatefoodprograms/ucm2006754.htm>). These requirements are implemented by all of the coastal states to govern lease placement in approved or conditionally approved waters and the processes associated with shellfish harvesting, handling, and sale.

Maine

The **Department of Marine Resources** authority encompasses the ability to lease state submerged lands. They offer a license and two different leases:

A Limited-Purpose Aquaculture license is renewable annually for up to 400 square feet for designated types of gear to culture certain species of shellfish, algae, or sea urchins in a single location. The application fee is \$50. There is a limit of four licenses per person. The applicant must provide: 1) a coordinate for the center of the license site, 2) a brief site description including whether there are

eelgrass beds present nearby, 3) site plan and gear description, 4) description of commercial and recreational fishing that includes type, duration and amount of activity, 5) list riparian landowners, and 6) a signed statement by a harbormaster or municipal officer that the license activities will not impede safe navigation, will not unreasonably interfere with commercial or recreation fishing and will not unreasonably interfere with riparian ingress or egress. The applicant must also notify riparian owners within 300 feet of the site by providing a copy of the application and information about how the landowners can submit comments to the department.

An “experimental” lease is non-renewable, 3-year lease for up to four acres. The application fee is \$100. Rent is \$100 per acre per year. The applicant must provide: 1) location description with corner coordinates, map of the lease area and adjoining waters and shorelines, 2) list of riparian landowners, 3) description of research or development study to be conducted, 4) description of the degree of exclusive use of the site, 5) description of existing uses of the proposed lease (commercial and recreational fishing activity, moorings, navigation and navigational channels, use of the area by riparian landowners), 6) written permission from every riparian landowner, and 7) general description of major physical and biological characteristics as well as general shoreline and upland characteristics. A public hearing may be held at the agency’s option; a hearing is mandatory if requested by five or more people. Performance bonds are required, similar to those for standard leases (below). Annual reports of seeding and harvesting and research reports are required.

A standard lease is renewable at 10 year increments, applicable for up to 100 acres, and includes a rent of \$100 per acre per year. The application fee is \$1,500. An applicant must provide: 1) location description with corner coordinates, map of the lease area and adjoining waters and shorelines, 2) list riparian landowners that are within 1,000 feet of the site, 3) species to be cultivated, 4) an environmental characterization describing bottom characteristics, resident flora and fauna, tide levels, and current speed and direction, 5) commercial and recreational navigation use that includes type, volume, time, duration, location and direction of traffic, 6) description of the degree of exclusive use of the site, 7) commercial and recreational fishing that includes type, duration and amount of activity, 8) written permission from every riparian landowner, 9) financial capacity to obtain, operate and maintain the activities, 10) technical expertise and capability, and 11) detailed gear specifications. Applicants must attend a pre-application meeting with agency, harbormaster or municipality staff to introduce and discuss the lease application. The applicant must also conduct a pre-application scoping session to familiarize the public with the proposal. Standard leases require a performance bond based upon areal coverage by structure: ≤400 square feet is \$1,500 and >400 square feet is \$5,000. The agency determines the performance bond amount for structures in excess of 2,000 square feet. A public hearing is required for all standard lease applications. Annual reports of seeding and harvesting are required.

Information about aquaculture, laws, rules, the lease process, and all lease and license application forms are available at <http://www.maine.gov/dmr/aquaculture/index.htm>. All lease and license applications are joint forms shared with the U.S. Army Corps of Engineers, which coordinates the federal agency review process. No aquaculture gear can be placed in the water without an agency aquaculture lease or license and a permit from the U.S. Army Corps of Engineers.

The application for a standard lease to use suspended shellfish production gear is available here: <http://www.maine.gov/dmr/aquaculture/documents/suspendedapplication.pdf>. This document is a joint application and a copy is provided by the applicant to the U.S. Army Corps of Engineers to acquire their permit.

Marine aquaculture policies, procedures and regulations are posted here:

<http://www.maine.gov/dmr/aquaculture/index.htm>.

New Hampshire

The lead agency is the **Fish and Game Department** which has the authority to issue a Marine Aquaculture License for shellfish aquaculture. The license does not provide exclusive use and the applicant must propose a site where there is no unacceptable infringement upon existing uses. An applicant must pay a \$200 application fee and the following information describing the species to be cultivated, production methodology, location, tides, nearby natural resources (shellfish, seagrass and finfish), sediment, recreational and commercial activities, navigational characteristics (channels, aids to navigation, vessel traffic, moorings), production gear, seed sources, drug and chemical use, and animal health treatment methods. In addition, the applicant is to provide a written statement describing ownership or permission from owners to exercise any littoral rights necessary to carry out the project, copy of current municipal tax map, and list of names/addresses of all the abutters or littoral owners. The Department has 30 days to notify the applicant that the application is complete and if so, the Department will conduct a site assessment. If acceptable, the Department will set a hearing date and the applicant will notify all abutters and littoral landowners and send copies of the application to the New Hampshire Department of Health and Human Services, Department of Environmental Services and Port Authority and the U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, U.S. Coast Guard, and National Marine Fisheries Service. The Department shall post public notice of the hearing.

If successful, the license holder pays an annual fee of \$200 per acre per year for bottom culture or \$500 per acre per year for suspended culture. Licenses are annually renewable with a \$100 fee for as long as the operation is conducted under the criteria of the license. An option for growers is a five year license of \$1,000 for bottom culture or \$2,500 for suspended culture that does not include the annual renewal fee; however, the five year fee is not refundable if the licensee decides to stop shellfish farming before his five year period has ended. Licenses cannot be sold but can be transferred or inherited. In addition, if the license holder is farming oysters, then the farmer must pay \$.015 per native oyster harvested.

The department's rule, Chapter Fis 800, The Importation, Possession and Use of All Wildlife can be accessed here: http://www.gencourt.state.nh.us/rules/state_agencies/fis800.html. The pertinent language is Part Fis 807, Aquaculture – Inland and Marine.

Massachusetts

Shellfish farming (on and off-bottom) is licensed by the local municipality. The **Division of Marine Fisheries** issues a propagation or aquaculture permit. Permits are awarded to individuals either to propagate shellfish, i.e. possess and cultivate sub-legal size shellfish while marketing only legal size shellfish (referred to as a Propagation Permit), or to aquaculture shellfish, i.e. possess, grow and market sub-legal (seed) and legal size shellfish (referred to as an Aquaculture Permit). The U.S. Army Corps of Engineers requirements are contained in a General Programmatic Permit for an area more than two acres in size and an Appendix C: Category 1 Form for areas less than two acres. Due to Massachusetts "home rule", where towns set their own regulations/requirements for aquaculture licensing, each municipality may vary somewhat from this generalized scenario, excluding the permits issued by Division of Marine Fisheries and the U.S. Army Corps of Engineers.

State statute (MGL Chapter 130 section 57) authorizes municipalities (city council, mayor or town selectmen) to issue a renewable and transferable license that allows the holder to: 1) to plant and grow

shellfish, bottom/off bottom culture; 2) to place shellfish in or under protective devices affixed directly to the tidal flats or land under coastal waters, such as boxes, trays, pens, bags, or nets; 3) to harvest and take legal shellfish; 4) to plant cultch for the purpose of catching shellfish seed; and 5) to grow shellfish by means of racks, rafts or floats.

The license may be issued with a 10 year term with an annual fee of \$5 to \$25 per acre for up to 25 acres. Whoever 1) takes shellfish from the licensed lands or waters or from said racks, rafts or floats; 2) disturbs the licensed area or the growth of the shellfish thereon in any way; 3) discharges any substance which may directly or indirectly injure the shellfish; 4) willfully injures, defaces, destroys, removes or trespasses upon said racks, rafts, or floats; or 5) willfully injures, defaces, destroys, removes or trespasses upon said protective devices affixed directly to the tidal flats, such as boxes, trays, pens, bags, or nets shall be liable in tort for treble damages and costs to the licensee injured by such acts. The authorizing statutes are available here:

<https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXIX/Chapter130/Section57-68>.

An in-depth regulatory description is provided in a publication entitled, *Best Management Practices for the Shellfish Culture Industry in Southeastern Massachusetts*, and available here:

<http://www.mass.gov/eea/docs/agr/aquaculture/shellfish-bmps-v09-04a.pdf>.

Rhode Island

The **Coastal Resources Management Council** offers a marine aquaculture lease that can be acquired via two different processes.

A one-time, per site Commercial Viability Permit allows a farmer to conduct a limited study of a proposed site to determine its suitability. The application fee is \$25 for a three year permit and 1,000 square feet that allows a one-time sale of any product grown on the site. The initial 1.5 year period is approved administratively. The second 1.5 year period requires Council approval. Because of the opposition to sequestering state waters, this permit is rarely acquired (except by true novices) since most applicants realize they might as well fight the battle for a three acre lease.

If the applicant has proven commercial viability either through a permit, or the initial permit is not necessary, the first step to acquire a lease is to file for a Preliminary Determination. The fee is \$25. The Preliminary Determination consists of a meeting between the applicant, state agencies (Department of Environmental Management and Council), fishing industry associations, township (harbor committee, harbor master and planning department) and federal agencies (U.S. Army Corps of Engineers, National Marine Fisheries Service) to review and discuss that applicant's proposal. The Council's Aquaculture Coordinator prepares a report summarizing the meeting that may include recommendations.

Given a positive outcome to the Preliminary Determination, an application is made for a 10-year lease with an application fee based upon an estimated project cost. Minimum fee is \$50 with a sliding fee scale such that, for example, a project costing between \$10K and \$25K incurs an application fee of \$250. The applicant provides a site and operational plan, detailed production gear description, and temporarily marks the location with buoys for Council site inspection. The application is subject to internal and external review (essentially the parties and anyone else that participated in the Preliminary Determination). A 30-day public comment period occurs and, if contested, a public hearing. If all goes well, the Council grants a lease after which the candidate leaseholder provides a performance bond and pays the lease fee. The performance bond is determined by the Aquaculture Coordinator and because the majority of leases are three acres in size and located in shallow water the average bond is \$5,000.

The lease fee is \$150 for the first acre and \$100 for each additional acre. Leases are renewed annually and the leaseholder must file a report. This report entails planting number, seed source, inventory, number harvested, number sold, and number sold to retail and/or wholesale.

The **Department of Environmental Management** offers an annual Aquaculture License with a fee of \$200. Applications are submitted to the Coastal Resources Management Council and must include an operational plan that describes the location and boundaries of the lease, types and locations of structures, species to be cultured, record maintenance and harvest methods. The operational plan is subject to review by the department and the Department of Health. A permanent record is maintained by the Council.

A *Guide to Aquaculture Lease Application* is available here:

<http://www.crmc.ri.gov/applicationforms/AquaApp.pdf>.

Connecticut

The **Department of Agriculture's** authority encompasses leasing submerged lands within state jurisdiction waters. Applicants nominate a lease site that does not interfere with any established right of fishing. Lease applications include a fee of \$100, which includes an advertising fee of \$90, and a recording fee of \$10. The department then publically advertises the lease for sealed bid. Agency policy requires a minimum bid of \$4 per acre and a lease is granted for a three year period. The lease may be renewed provided the lessee has paid the yearly rental fee. The bidders, including the applicant, submit a bid (i.e., first year rental fee) for the lease along with a lease application. If the applicant is unsuccessful, the application fee (minus the advertising cost) and first year rental fee are returned.

Applicants intending to culture shellfish off the bottom must submit a no-fee application for a Joint Programmatic General Permit for Aquaculture. Before completing the application, a pre-screening meeting with the State Aquaculture Coordinator, is recommended. If the proposed project area is within town waters, the proposed project plan must be reviewed by the township shellfish commission.

The application is forwarded to: Department of Environmental Protection-Office of Long Island Sound Programs, DEP-Marine Fisheries, DEP-Boating, U.S. Army Corps of Engineers, and to the local Shellfish Commission, if applicable. If the aquaculture gear has the potential to interfere with navigation, and/or will not be located within a lease, franchise or designated shellfish areas, the activity will likely require a Structures, Dredging & Fill and Tidal Wetlands Permit or Certificate of Permission from DEP-Office of Long Island Sound Programs. The Structures, Dredging & Fill and Tidal Wetlands permit is issued by DEP-Office of Long Island Sound Programs for new work conducted seaward of the high tide line in tidal, coastal or navigable waters of the state, including dredging and the placement of structures or fill material. The Certificate of Permission is issued by DEP-Office of Long Island Sound Programs for certain minor activities involving dredging, erection of structures, or fill in any tidal, coastal or navigable waters of the state. If a boat is able to transit the area where structure(s) is proposed to be placed, the applicant will likely be required to obtain a Marker Permit Application from DEP-Boating.

The U.S. Army Corps of Engineers review may result in an Individual Permit or a letter of approval as provided for under a Programmatic General Permit. A copy of the U.S. Army Corps of Engineers approval letter, when issued, will be forwarded to the department and the DEP-Office of Long Island Sound Programs. If the project is permitted within town waters, the local shellfish commission will also receive a copy.

Once the appropriate permit(s) or exemption letters from the Department of Environmental Protection and/or U.S. Army Corps of Engineers are granted, the department issues a Certificate for Aquaculture Operations to the applicant. Written authorization from all three agencies is required before aquaculture activities can commence or gear can be placed in the water.

Towns, cities or boroughs can lease coastal waters located inside the “town line” and create shellfish commissions to govern such activities. As a general statement, these municipalities charge a flat fee for leases and lease fees vary between towns.

Marine aquaculture policies, procedures and regulations for state waters are posted here:
<http://www.ct.gov/doag/cwp/view.asp?a=3768&q=451508&doagNav=|>

A Guide to Marine Aquaculture Permitting in Connecticut is available here:
<http://seagrant.uconn.edu/publications/aquaculture/permitguide.pdf>. This document includes state and town regulations.

New York

The lead agency is the **Department of Environmental Conservation**, Division of Fish, Wildlife and Marine Resources, Bureau of Marine Resources. The department issues an on/off-bottom shellfish culture permit to authorize commercial shellfish culture activities. In addition to the department’s own review of on/off-bottom shellfish culture permit applications, any culture operation where the applicant proposes off-bottom culture (i.e., deployment of any demersal, suspended or floating gear) is also reviewed by the Department of State’s Coastal Management Program and the U.S. Army Corps of Engineers for consistency with coastal regulations and the Nationwide Permit 48, respectively. In most cases, applicants must also secure a Private Aids to Navigation permit from the U.S. Coast Guard for properly marking an operation to alert mariners. If the application is approved by all involved state and federal agencies, this annual and renewable permit is issued by the department with an annual fee of \$100. The permit holder must also obtain a \$50 annual Commercial Shellfish Harvester license.

An integral part of the shellfish culture permit application process involves the applicant demonstrating to the department that they have secured the rights to site a culture operation at a given location, whether through direct ownership of the underwater land, or through a lease agreement, letter of permission, etc., from the underwater land owner. A few programs do exist where prospective culturists can gain access to underwater lands in New York for shellfish culture. The largest program is Suffolk County’s Aquaculture Lease Program for Peconic and Gardiners Bays, wherein the state has ceded control of 110,000 acres of underwater land in Peconic and Gardiners Bays to Suffolk County for management of shellfish culture leasing only. Suffolk County’s program makes no distinction on what types of shellfish culture activities can occur on a lease, whether on- or off-bottom culture. Another much smaller program is administered by the Town of Islip, which, along with the Towns of Babylon and Brookhaven, effectively controls the majority of underwater lands in Great South Bay. Islip’s aquaculture lease program involves approximately 100 acres and specifies off-bottom culture methods only. Once a lease applicant is approved for a site in either of these programs, they can initiate the on/off- bottom culture permit application process with the department and the other involved agencies.

An in-depth description of the Suffolk County Aquaculture Lease Program is found here:
<http://www.suffolkcountyny.gov/Departments/Planning/Divisions/EnvironmentalPlanning/AquacultureLeaseProgram/LeaseProgramOverview.aspx>. The Town of Islip’s Aquaculture Lease Program is described here: <http://www.townofislip-ny.gov/news-archives/34-uncategorised/1997-lottery-recipients-set-to->

[farm-bay-bottoms-of-great-south-bay-program-reinforces-environmental-stewardship-tradition-and-new-profit-opportunities](#). The Towns of Babylon and Brookhaven also appear to be working with a few shellfish culturists interested in leasing small parcels of the towns' underwater lands in Great South Bay, though to date, neither municipality has indicated plans for establishing a formal leasing program comparable to Islip's program.

The department also administers its own small program to aid prospective culturists in gaining access to state-controlled underwater lands, typically in Long Island Sound. A shellfish culture permit applicant can apply concurrently for a Temporary Marine Area Use Assignment for off-bottom shellfish culture only (i.e., contained, gear-based culture only; no broadcast seeding). An Assignment is defined as a five acre circular-shaped area that must be located at least 1,250 feet from the shoreline and one mile distant from any other Assignment holders. The applicant identifies the site by providing a center point and the department works with the applicant to determine if the site is suitable for shellfish culture and not in conflict with other users. A public notice describing the proposed operation and where it would be sited is published for one day in the legal notices of the local newspaper and in the department's Environmental Notice Bulletin. The notice establishes a public comment period of 30 days. If there are no regulatory issues or adverse public comment, the Assignment will be approved concurrently with the off-bottom culture permit. There is no additional fee for the Assignment and it is renewable annually along with the off-bottom culture permit.

New Jersey

The **Department of Agriculture** issues a no-fee Aquatic Farmers License and recommends implementation of Agricultural Management Practices. By statute (Title 4), the Department of Agriculture is the lead state agency for aquaculture advocacy and marketing. See <http://www.jerseyseafood.nj.gov/aquaculture.html>.

Pursuant to the shellfish statutes at N.J.S.A. 50 et seq., the Commissioner of the **Department of Environmental Protection** (through the Division of Fish and Wildlife's Bureau of Shellfisheries), has full control and direction of the shellfish industry and resource throughout the entire State, which includes shellfish aquaculture. The agency assesses the suitability of submerged land, surveys potential leases, collects fees and vacates leases for nonrenewal. As funding permits, the agency conducts a benthic resource survey for state waters and this data is used, in part, to assist in identifying new potential lease areas. The Atlantic Coast and Delaware Bay Councils cover two sections of the State and have exclusive authority to lease bottom to individuals for the cultivation of shellfish, upon approval from the Commissioner. The agency provides biological advice on the prospective leases to the Council at a public meeting. The Council then decides whether a lease will be granted, upon approval of the Commissioner. An applicant proposes a lease site to the agency, pays a \$15 biological resource assessment fee and a biologist will review the proposed lease area data and assigns a density value (high, moderate and low) for wild shellfish, year classes and for submerged aquatic vegetation of regulatory significance. Leases are not approved where shellfish with "moderate" or "high" shellfish densities or where submerged aquatic vegetation are observed. The review process also weighs other issues such as user group conflicts, recreational use and navigation, etc. If the application is acceptable, it is discussed at two consecutive meetings of the Council. A decision on the application is made at the second meeting. The applicant is required to appear at one of the two meetings. If they do not appear, the application is denied.

The Council history of lease application approval is very high (greater than 95%). However, this is mainly due to the Bureau and Council preemptively screening areas that can't be leased, such as naturally

productive shellfish habitat or other environmentally sensitive areas (i.e., submerge aquatic vegetation). If the Council approves a lease application, the applicant will receive a letter that he/she has 30 days to pay their lease fees (\$2 per acre/year (\$5 minimum)) and hydrographic survey fees (\$30 per corner for hydrographic survey). The applicant must also sign their lease agreement in person. Once the fees are paid and the lease agreement is signed, the applicant may begin to utilize their lease and the agency then conducts a hydrographic field survey to temporarily mark the lease corners. The leaseholder must install and maintain permanent marks within a time period established within the regulations. Leases are renewed annually. If a user does not renew the lease by December 31st the lease is vacated and made available to the public.

Hard clam aquaculture in New Jersey began in earnest in the early 1970s. The Atlantic Coast Section of the Council makes decisions primarily for hard clam leases that are a maximum of two acres in size and has granted ~2,500 acres with a lease fee of \$2 per acre. Oyster culture leasing in Delaware Bay started in the 1800s. The Delaware Bay Section of the Council, the agency, and potential oyster farmers are very familiar with suitable lease locations. There are ~33,000 acres under lease in Delaware Bay. The Councils will grant a lease up to a maximum of 200 acres with a fee of \$0.50 per acre. Oyster production on these leases is typically by cultch planting and oyster seed transplant from public beds.

U.S. Army Corps of Engineers permitting changes in 2007 required individual permit coverage for all existing shellfish culture leases and all traditional culture activities (such as predator screening and shell planting). The Department of Environmental Protection applied for and obtained blanket Nationwide Permit 48 coverage on behalf of shellfish industry. New leases (obtained after March 17, 2007) are required to obtain a U.S. Army Corps of Engineers Nationwide Permit 48 directly and are not covered under the blanket. This federal permit also triggered state permits. The department, once again on behalf of shellfish industry, obtained state coverage for existing leases and future leases in all shellfish culture lease sections along New Jersey's Atlantic Coast and in Delaware Bay.

Recently, the department identified three Aquaculture Development Zones that allows the use of structure (e.g., cages, racks, bags, floats, etc.) for grow-out culture operations. Their coastal zone management regulations were also streamlined to allow this practice on traditional leases. An experimental ~40 acre intertidal Aquaculture Development Zone (each lease is 1.5 acres) is dedicated to rack-and-bag culture on an intertidal flat along the bayside shore of Cape May. A lease within this Zone is for an approximate five year period and the applicant must acquire a lease through a lottery and waiting list. This area had an initial fee of \$1,000 and annual renewal of \$100/acre. Two additional 'deepwater' Aquaculture Development Zones, totaling 1,100 acres, are dedicated to culturing oysters in subtidal bottom cages. No one has applied for a lease within these Zones and the agency representative thought the lack of interest may be related to the \$1,000 permit fee. Limited information about shellfish leasing is available at: <http://www.nj.gov/dep/fgw/shelhome.htm>

Delaware

During August 2013, the Governor signed into law a bill authorizing the **Department of Natural Resources and Environmental Control** "to direct and control the shellfish aquaculture activities within the Inland Bays and to set criteria for the approval of lease sites and applications for leasing." Prior to this bill, sub-aqueous (bottom) leases were discontinued in 1979 and provisions in the Delaware Statutory Code prohibited shellfish aquaculture. The new law established: 1) leases to between one and five acres, 2) an application fee of \$300, 3) an annual lease fee of \$100 per acre (\$1,000 per acre for non-residents), 4) an annual renewal for a maximum of 15 years (leaseholder is reserved the first right of refusal to lease the area for another 15 years), and 5) limits the amount of bottom that may be leased

within two of the several identified water bodies. The agency is currently identifying potential lease areas and creating regulations that govern eligibility, inspection, species, mechanical harvesting gear, marking, and other issues. These rules are to be announced on July 1, 2014. The authorizing legislation can be accessed here: http://openstates.org/de/bills/147/HB160/?show_all_sponsors=True.

The **Delaware Sea Grant Program** published *Shellfish Aquaculture in Delaware's Inland Bays Status, Opportunities, and Constraints* just prior to the Governor signing the authorizing bill that provides an in-depth and excellent analysis. See <http://darc.cms.udel.edu/ibsa/Inland%20Bays%20Shellfish%20Aquaculture%20White%20Paper%202013.pdf>.

Maryland

Since 2009, Maryland reorganized its leasing program to create a new Aquaculture Division in the **Department of Natural Resources** with the intent of attracting new aquaculture producers and rebuilding its farm-raised shellfish industry. The revised program has an active use requirement that allows growers to apply for as much acreage as they need but with the stipulations that they file a production plan and meet established planting requirements, maintain corner markers and report their activities annually. Nonresidents and business entities are also allowed to apply for leases.

Commercial shellfish aquaculture leases in Maryland's Chesapeake Bay or Coastal Bays are granted for a term of 20 years and are renewable for an additional term. After a 40-year leasehold, continuous use of the same ground requires reapplication by the leaseholder. A non-refundable application fee of \$300 is required for each site. Annual lease rent is \$3.50 per acre for a Submerged Land Lease and \$25 per acre for a Water Column Lease.

The department and the U.S. Army Corps of Engineers, Baltimore District, streamlined Department of the Army authorizations for shellfish aquaculture projects no larger than 50 acres for a Submerged Land Lease, 5 acres for a Water Column Lease utilizing cages on bottom and 3 acres for a Water Column Lease utilizing floats. Applications exceeding the thresholds established in the RGP-1 are reviewed through an Individual Permit process which includes more comprehensive review by federal agencies, including issuance of a Federal public notice, and may require additional processing time. A \$100 fee is required by the U.S. Army Corps of Engineers when an Individual Permit is issued.

The department's Aquaculture Division has created an on-line *Maryland Aquaculture Siting Tool* to aid lease applicants in identifying suitable lease sites and create the proper maps to accompany an application. The tool is an interactive online map viewer that displays potential conflicts with existing commercial and recreational uses and environmentally sensitive areas. Applications are tracked by regular meetings of an interagency Aquaculture Review Board, which completes a preliminary review to identify potential problems and recommend modifications that may minimize post-application review and processing time.

Water Column Lease holders must maintain insurance throughout the term of the lease against loss or liability in connection with 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. Required coverage is a minimum of \$1,000,000 per occurrence, \$2,000,000 annual aggregate, and shall contain broad form Commercial General Liability endorsement or its equivalent. Each such policy must name the lessee, the State of Maryland and the Department of Natural Resources

as insured parties. A bond is not required; however, culture equipment must be marked with the name of the leaseholder and he or she is expected to retrieve lost or derelict gear.

Joint lease and federal permit application, siting tool, and other information are available here: <http://www.dnr.state.md.us/fisheries/oysters/industry/aquaculture/>.

Virginia

The **Marine Resources Commission's** Habitat Management Division manages the leasing of state waters for shellfish culture and the Fisheries Management Division regulates activities associated with culturing shellfish. Please see http://www.mrc.virginia.gov/Shellfish_Aquaculture.shtm.

Virginians interested in leasing submerged lands for shellfish culture pay a \$25 application fee and can nominate ≤250 acres. The agency advertizes the application over a four week period and the applicant pays the advertising fee. If no opposing comments are received, the agency surveys the site, installs applicant provided corner markers and produces a plat for a fee of \$675. Following corner marker installation, there is a 30-day wait period for the public to physically inspect and comment on the potential lease. If no opposition is received the agency records and assigns the lease for fees of \$1.50 and \$12, respectively. The annual lease rental is \$1.50 per acre. A lease has a 10 year term. Lessees must prove that shellfish production activity is occurring on the lease or it will be canceled.

If the application is protested and the protest cannot be adequately addressed by agency staff, the application is scheduled for a public hearing before the Marine Resources Commission (citizens appointed by the governor) for final resolution. Commission decisions can be appealed at the circuit court level.

Farmers wanting to grow shellfish in cages that extend no more than 12-inches off the bottom on a regular oyster ground lease and cause minimal interference with navigation must comply with Habitat Management regulations that prohibit placing cages on submerged aquatic vegetation and the use of any cage material that might leach toxic substances. The requirements are posted here: <http://www.mrc.virginia.gov/regulations/onbottom.shtm>.

Farmers wanting to grow shellfish in cages or containers that are greater 12-inches above the bottom and/or to be marked on the surface with buoys must acquire a General Permit from the Fisheries Management Division. A container shall not: leach toxic materials, be stacked or placed to create a navigational hazard, exceed 70 cubic feet in volume, exceed 250 containers per acre, and exceed 250 arrays of containers within the permitted area. Permit fees are associated with the number of containers: ≤ 500 is \$125, >500≤1000 is \$250, >1000≤2500 is \$625 and >2500 is \$1,000. Permit regulations and requirements can be found here <http://www.mrc.virginia.gov/regulations/fr1130.shtm>.

Farmers wanting to grow shellfish in floating cages on the surface above state-owned subaqueous bottomlands, whether they possess an oyster ground lease or not, must submit a Joint Permit Application, with a detailed plan of the operation, to the Habitat Management Division. The joint application is with the U.S. Army Corps of Engineers and other state agencies. If a permit is granted, the lessee pays a royalty "for encroaching on the bottom" of \$.005 per square foot per year (\$217.80 per acre per year) which has a five year term.

Riparian landowners that own at least 205 feet of coastal land can also lease <.5 acre. Their application is not advertized and there is no annual lease fee.

Farmers harvesting aquaculture products must possess an Aquaculture Product Owners License and any commercial oyster aquaculture operation taking oysters from riparian, fee-simple, or privately leased ground must pay a user fee of \$50 a year.

North Carolina

The **Department of Environment and Natural Resources**, Division of Marine Fisheries, Habitat and Enhancement Section, manages shellfish leasing and regulates shellfish culture activities associated with leasing under the authority granted by General Statutes and rules adopted by an appointed Marine Fisheries Commission. The agency offers an application for both bottom culture and water column. The bottom lease currently allows for the grow out of oysters (eastern) and clams (hard, blood, venus ray, etc) , using cultch (shell or rock) as well as seed spread on the bottom or with the use of clam bags planted/bedded in the bottom. The water column lease allows for the use of gear within the water column (cages, racks, stacked bags, floating gear, strings, lantern nets, etc).

Bottom culture application involves the applicant: 1) identifying a location (≥ 0.5 acre ≤ 5 acres that are harvested by manually labor or ≥ 0.5 acre ≤ 10 acres in locations where mechanical harvest is allowed), 2) a \$200 fee that is imposed if the application is accepted and returned if the lease application is denied, and 3) a simple production description. The agency assesses the site and reviews the production methods to determine acceptability. Upon acceptance the applicant pays the application fee, a prorated lease rental fee of \$10.00 per acre and provides a lease site survey prepared by a licensed surveyor. Leases are renewed at five year intervals and renewal includes a fee of \$100. No more than 50 aggregated acres are allowed per person, corporate entity, corporate shareholder, or single family unit. Lease holders must produce and market 10 bushels per acre of shellfish each year, plant 25 bushels per acre of shellfish seed or 50 bushels per acre of cultch per year or a combination of seed and cultch. New leaseholders, lease transfers, or non-productive leaseholders must pass a written examine ($\geq 70\%$ correct) to finalize or retain their lease. This examination covers: 1) shellfish lease application process, 2) shellfish lease planting and production requirements, 3) lease marking requirements, 4) lease fees, 5) shellfish harvest area closures due to pollution, 6) safe handling practices, 7) lease contracts and renewals, 8) lease termination criteria, and 9) shellfish cultivation techniques.

Water column applicants must already possess a shellfish bottom lease, or have submitted a bottom lease application in conjunction with the water column application. Water column application procedure and examination are the same as bottom leases but require a \$100 application fee, \$100 per acre rental fee, and \$100 renewal fee every five years. In addition to the production description, applicants must provide a plan view and cross section drawing of the structures proposed that includes mean low and mean high water lines. Production targets are to harvest 40 bushels of shellfish per acre per year or to plant 100 bushels of seed or cultch per acre per year. Production within a water column area of a bottom lease negates bottom lease production requirements for that lease.

Proposed shellfish lease locations can not contain more than 10 bushel of shellfish per acre or contain any submerged aquatic vegetation or have historically contained submerged aquatic vegetation within the last ten years. Proposed shellfish lease locations are investigated, sampled and reviewed prior to issuance.

Franchises are deeded bottom locations that were issued in the past by a prior Shellfish Commission or other public entity, and that were previously recognized as submerged land claims. The franchise

bottom is deeded in perpetuity; however, the agency can cancel these franchises if there are not being productively managed.

Agency staff provide bottom and water column lease application packages. There is no webpage dedicated to shellfish leasing, but there is a link to find the Marine Fisheries Commission rules for leasing (15A NCAC 03O.0201 - .211 and G.S. 113-201.1-202.2): <http://portal.ncdenr.org/web/mf/rules-and-regulations>. Agency staff plans to have a dedicated website for Shellfish Leases by December 2014. Applications can be found at: http://portal.ncdenr.org/c/document_library/get_file?uuid=be849a63-3480-48c0-96a6-0919865d1cba&groupId=38337.

South Carolina

The **Department of Natural Resources**, Department of Health and Environmental Control (**Ocean and Coastal Resource Management**) and **U.S. Army Corps of Engineers** offer a joint shellfish mariculture permit application package. Applicants are encouraged to contact the Department of Natural Resources, Office of Shellfish Management for guidance and assistance. Applications that include an operational plan are submitted to the Department of Natural Resources with a \$25 fee. If the Ocean and Coastal Resource Management or U.S. Army Corps of Engineers determines the proposal does not qualify for a General Permit or Nationwide Permit 48, respectively, then an Individual Permit will be required. The Ocean and Coastal Resource Management General Permit is only applicable for a farm \leq .25 acre. A farm with a larger footprint must apply for an Individual Permit. There is a \$1,000 fee associated with the Ocean and Coastal Resource Management Individual Permit and a \$100 fee associated with the U.S. Army Corps of Engineers Individual Permit. Production issues that may delay permitting include culture of shellfish other than oysters and clams and use of production gear other than soft bags, on- or off-bottom cages. A prospective permittee can only propose to conduct operations in Approved Shellfish Waters. Use conflicts are resolved on a case-by-case basis. If the proposal appears to qualify, then the applicant must place a classified ad for three weeks to inform the public of the proposed activity and location and allow public comment to the Department. Once the advertising requirement is satisfied, the applicant notifies the Department and, if Ocean and Coastal Resource Management and U.S. Army Corps of Engineers have issued permits and there are no adverse public comments, the Department will issue a Shellfish Mariculture Permit. The permit has a renewable five year life and an annual rent of \$5 per acre. The permittee must report planting and harvest activities, acquire a special permit if acquiring seed from out-of-state and acquire Wholesale Seafood Dealer's License and Shellfish Dealers License from the department.

This is a link to the Joint Mariculture Application for South Carolina:

http://www.sac.usace.army.mil/Portals/43/docs/regulatory/Mariculture_Joint_App_7.25.13.pdf.

Georgia

The **Department of Natural Resources**, Coastal Resources Division, is the lead agency for leasing sovereign submerged lands. A complicating factor is that approximately 60% of Georgia submerged lands are Crown Grants and determining ownership requires an expensive title search. The agency recognizes two types of leases: Private and State. Private leases are usually based upon a Crown Grant and State leases are within areas of state jurisdiction and probably have a history of prior use to produce shellfish. An additional complication is the tidal amplitude, six to seven feet, which results in large lease areas, 170 to 4,500 acres, because much of the area may be usable and broken up by salt marshes, tidal creeks, and mudflats. Leaseholders are referred to as "stewards" and control of salt marsh and existing shellfish resources (clam flats and oyster bars) within the lease boundaries. Applicants for leases bid in a public forum and fees are based upon the public bids for the entire lease. A minimum bid of \$500 is

required. Applicants are also required to submit a five-year management plan to the department and a five-year business plan to the **Department of Agriculture**. A committee is established to review the bids and the management plan can be a deciding factor in selecting the steward. Leases have no maximum term and are renewable. Stewards are limited to using one meter from the bottom to prevent navigational or other negative interactions with the public. Gear configuration and construction is not regulated, the agency will regulate on a case-by-case basis. There is little to no information posted on Georgia websites: <http://coastalgadnr.org/fb/shell/csh>.

Florida

The **Department of Agriculture and Consumer Services**, Division of Aquaculture, is the lead agency. An application for an aquaculture lease (bottom and/or water column) consists of the lease location, description of the proposed activity and species, and a business plan. The application package is reviewed by the department, Fish and Wildlife Conservation Commission and Department of Environmental Protection. As part of the review process, a site inspection will be made by department staff to determine whether or not the site is appropriate for the proposed use. In cases where the proposed location is not suitable, additional field surveys and site inspections may be necessary to modify the initial site boundaries. When the application is deemed to be complete, and acceptable to the other state agencies, the applicant pays a \$200 application fee and notice of the lease application is provided to local entities.

The department has acquired, on behalf of all Florida shellfish farmers, a Programmatic General Permit from the U.S. Army Corps of Engineers for bivalve mollusc and live rock culture except for an applicant that proposes to lease state submerged lands within the boundaries of listed species critical habitat (Gulf of Mexico sturgeon, smalltooth sawfish or Johnson seagrass). An applicant interested in leasing within listed species critical habitat must acquire an Individual Permit from the U.S. Army Corps of Engineers.

Leaseholders that intend to culture oysters off-bottom, adjustable long line or floating cages, will have to acquire a permit from the U.S. Coast Guard to install approved Private Aids to Navigation. The permitting process results in National Ocean Service modification to coastal navigational charts that identify their location as being a hazard to navigation and navigational marking visible to the boating public that is installed and maintained by the leaseholder.

Any state-owned submerged lands lease must be authorized by the Governor and Cabinet in their role as the Board of Trustees of the Internal Improvement Trust Fund. The applicant appears before the Governor and Cabinet to receive approval. Leases are renewable for 10 year terms with a \$16.73 annual per acre fee for bottom culture, \$33.46 annual fee for water column culture and a \$10 surcharge per acre for both. Leaseholders must abide by the provisions of the lease agreement, acquire an annual Aquaculture Certificate of Registration that includes a \$100 annual fee, implement environmentally-oriented Best Management Practices, are subject to unannounced department site inspections, and must respond to an annual production audit from the department.

A description of the lease application process and application form can be found here: <http://www.freshfromflorida.com/Divisions-Offices/Aquaculture/Agriculture-Industry/Aquafarm-Program/Aquaculture-Leasing>. Information about and application to obtain the Aquaculture Certificate of Registration and Best Management Practices can be found here: <http://www.freshfromflorida.com/Divisions-Offices/Aquaculture/Agriculture-Industry/Aquafarm-Program/Aquaculture-Certification>.

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