

Inventory of Shellfish Restoration Permitting & Programs in the Coastal States

Prepared for The Nature Conservancy

by

Mississippi-Alabama Sea Grant Legal Program

National Sea Grant Law Center

Troy University

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INTRODUCTION

When undertaking a shellfish restoration project, it can be challenging to navigate the permitting requirements and policies of each state. Through funding from The Nature Conservancy, the Mississippi-Alabama Sea Grant Legal Program, in collaboration with the National Sea Grant Law Center, researched the regulatory framework governing shellfish restoration projects in 21 coastal states. For each state, the legal team identified the responsible agencies, the application process, and the general regulatory framework. In addition, the legal team summarized oyster harvesting requirements, tools for protecting shellfish reefs and restoration projects, and state mitigation policies that incorporate shellfish. At the request of The Nature Conservancy, information was also collected on existing restoration efforts through personal interviews with state agency personnel.

Niki Pace, Mississippi-Alabama Sea Grant Legal Program, served as project lead on this report. Other members of the legal team included Stephanie Showalter Otts, Terra Bowling, and Catherine Janasie of the National Sea Grant Law Center. Additional support was provided by Dr. Christopher Boyd of Troy University.

The phrase shellfish restoration can be defined in multiple ways. For the purpose of this project, the legal team focused on policies addressing shellfish habitat and reef creation, restoration, and conservation. The team did not include policies strictly focused on restoring the shellfish stock for commercial harvest, which may be contained within some states' aquaculture programs.

In creating a state-by-state guide to shellfish restoration permitting, the legal team identified several common areas of regulatory oversight. At the federal level, restoration projects require permits from the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act. The USACE regulates activities in wetlands and waterways including the discharge of dredged or fill material and work within tidal, navigable waterways.

The USACE issues several different types of permits depending on the project: nationwide general permits, regional general permits, and individual permits. Nationwide General Permits (NWP) are used by the USACE to authorize activities across the country that cause minimal environmental impacts. The permitted activity must satisfy all of the permit conditions, which include compliance with state or regional laws and regulations. In certain districts, states may have rejected the use of NWPs through their federal consistency review authority under the Coastal Zone Management Act. States may also impose state specific conditions on the use of NWPs within their waters.

NWPs relevant to shellfish restoration projects include NWP 13 and NWP 27. NWP 27 authorizes activities associated with the restoration, enhancement, and establishment of tidal and non-tidal wetlands. NWP 27 specifically references the construction of oyster habitat in tidal waters. NWP 13 authorizes activities necessary to prevent erosion and stabilize shorelines. Its use is limited to projects no more than 500 feet in length, unless waived by a USACE district engineer citing minimal adverse effects.

In addition, some states have worked with their local USACE District Office to develop Regional General Permits (RGPs) tailored to their state needs. RGPs usually include provisions intended to protect the environment and resources of a specific region. Where applicable, the legal team included reference to relevant RGPs within each state chapter. Projects that do not qualify for NWPs or RGPs will need to seek an individual permit from the USACE. Individual permits are issued for projects that propose extensive impacts, or impacts to rare or fragile aquatic environments. Individual permits are generally required for projects whose proposed impacts will be greater than one acre of wetland or stream. However, the USACE can choose to review any project under an individual permit, regardless of its impact or size.

Although not addressed in this report, consultations with other federal agencies may be required as part of the USACE permitting process. Federal laws such as the Endangered Species Act and the Magnuson-Stevens Fishery Management Act may trigger these consultations, particularly if the project may impact essential fish habitat or the habitat of threatened or endangered species. Likewise, any potential navigational hazards may require review by the U.S. Coast Guard or designated state agency.

At the state level, restoration projects may require permission to use state-owned submerged lands. Projects may also require permitting from state coastal programs that manage activities in coastal waters. In some states, projects may require consultation with fishery management, aquaculture, and/or shellfish sanitation agencies. Under each state chapter, the team has set forth the particulars of each state's permitting scheme and requirements of the regional USACE district office.

This report covers 21 coastal states of interest as identified by The Nature Conservancy: Alabama, California, Connecticut, Delaware, Florida, Georgia, Louisiana, Maine, Maryland, Massachusetts, Mississippi, New Hampshire, New Jersey, New York, North Carolina, Oregon, Rhode Island, South Carolina, Texas, Virginia, and Washington. The team did not review the policies of Alaska, Hawaii, Pennsylvania, and the Great Lakes states.

For each state, the following information is summarized:

Shellfish Management At a Glance

- Coastal Program
- Submerged Lands
- Fishery Management
- Shellfish Aquaculture
- Shellfish Sanitation

Submerged Lands Permitting

- State-Owned Submerged Lands
- Leasing Process
- King or Crown Grants
- Conservation Leasing

Permitting Shellfish Restoration

- Permitting Agencies
- Permitting Process
- Shellfish Restoration Permitting Snapshot
- Research and Conservation Permitting
- Restoration in Closed Waters

Protecting Existing Reefs and Restoration Projects

- Reef Closure for Non-Public Health Concerns
- Sanctuaries and Other Protected Areas
- Other Tools for Protecting Shellfish Restoration Projects

Oyster Management Generally

- Oyster Harvesting
- Public, Private, and Natural Reef Distinctions

Existing Shellfish Restoration Efforts

- Government
- Non-government

Mitigation

ALABAMA

Shellfish Management At a Glance

The following provides a quick reference to relevant state laws and regulatory programs impacting shellfish management and restoration projects in Alabama. Related permitting requirements are addressed in subsequent sections.

A. Coastal Program

- Responsible Agencies: Alabama Dept. of Conservation and Natural Resources and Alabama Dept. of Environmental Management – Coastal Program.
- Relevance: The agencies implement the Alabama Coastal Area Management Program (ACAMP). ACAMP is Alabama’s coastal program under the Coastal Zone Management Act and includes regulation of activities taking place within the coastal zone.
- Website: <http://www.adem.state.al.us/alEnviroRegLaws/files/Division8.pdf>

B. Submerged Lands

- Responsible Agency: Alabama Dept. of Conservation and Natural Resources – State Lands Division
- Relevance: Responsible for issuing easements to use state-owned submerged water bottoms.
- Website: <http://www.outdooralabama.com/state-lands>

C. Fishery Management

- Responsible Agency: Alabama Dept. of Conservation and Natural Resources – Marine Resources Division
- Relevance: Oversees management of the oyster fishery. Works in conjunction with Dept. of Public Health to manage oyster fishery.
- Website: <http://www.outdooralabama.com/marine-resources-enforcement-contacts>

D. Shellfish Aquaculture

- Responsible Agency: Alabama Dept. of Conservation and Natural Resources
- Relevance: Regulate oyster aquaculture activities.
- Website: www.outdooralabama.com

E. Shellfish Sanitation

- Responsible Agency: Alabama Department of Public Health – Seafood Branch (referred to as Seafood Public Health)

- Relevance: Seafood Public Health makes determinations regarding opening and closing of waters for harvesting.
- No website available.

Submerged Land Permitting

Shellfish restoration projects may require leasing of state-owned submerged lands. This section discusses the role of state-owned submerged lands, the availability of King’s or Crown grants, and other aspects of leasing submerged lands for restoration projects.

A. State-Owned Submerged Lands

- **Ownership of Submerged Lands:** Most Alabama tidal waters below the mean high tide line are held in trust by the state and managed for the public benefit in compliance with state law.
- **Terminology:** Alabama refers to water bottom leases as “easements.” Projects not requiring actual easements may be granted a “consent for use.”
 - Nearshore water bottom leases are referred to as Riparian Easements.
 - Aquaculture activities require Shellfish Aquaculture Easements.
- **Responsible Agency:** ADCNR State Lands Division (ADCNR-SLD)

B. Leasing Process

- *Generally:* The Riparian Easement is the functional equivalent of a state submerged lands lease for nearshore water bottoms and is required for all revenue generating activities that limit or preempt public use.
 - Activity must be in the public interest and water-dependent;
 - Easement holder must have sufficient upland interest and cannot unreasonably infringe on the riparian rights of upland property owners.
 - If applicant is not the upland owner, a letter of consent from the upland owner granting use of the riparian area will suffice.
- *Shellfish Aquaculture Easements:*
 - In 2014, Alabama adopted a shellfish aquaculture easement program. The program is targeted to aquaculture activities and may have limited application to restoration work.¹

¹ Ala. Admin. Code r. 220-4-.17

- *Leasing for Restoration:* Alabama does not have specific provisions for leasing state-owned submerged lands for restoration.
 - Consent for Use: Restoration projects have been granted Consents for Use, allowing the project to use the waterbottom without an easement.²

C. King or Crown Grants

In a few limited circumstances, property owners that are able to trace their chain of title back to before Alabama became a U.S. territory may hold title to submerged lands that were granted by a Spanish king, regionally known as Spanish land grants. Otherwise, submerged lands are held by the State.

D. Conservation Leasing

Alabama does not have a mechanism in place to implement conservation leasing. As mentioned above, current leasing conditions are tied to revenue generating activities and exclusion of public use.

Permitting Shellfish Restoration

A. Permitting Agencies

- U.S. Army Corps of Engineers (Coordinating Agency)
- AL Dept. Environmental Management
- AL Dept. Conservation and Natural Resources – State Lands Division

B. Permitting Process

Shellfish restoration projects fall within the Alabama permitting category “Projects Impacting Water Bottoms or Wetlands.” This type of project requires permits from the USACE, and consultation or permitting from ADEM and ADCNR-SLD. A joint permit application is made to USACE, who consults with ADEM for compliance with the ACAMP. In addition, restoration projects may require consultation with Seafood Public Health and may also require a water bottom lease or Consent for Use from ADCNR-SLD, as discussed above.

² The reason that Alabama does not require a riparian easement for restoration projects is that the agency requires a demarcation of the pre-project shoreline and documentation intended to insure any submerged lands impacted by fill or accretion remains public lands or it involves using living shoreline techniques to reclaim avulsed shoreline and would then still be considered private. Per agency reviewer.

USACE Permitting:

The use of NWP 27 for restoration activities is allowed in Alabama waters. An applicant must notify ADEM Coastal Section, acquire all necessary easements from ADCNR-SLD for impacts to state-owned water bottoms, and submit a pre-construction notification or proof of notification exception to the USACE prior to commencing activity.

In addition, Alabama has a regional general permit for living shorelines that may be applicable in some circumstances.

- **Regional General Permits:** Alabama has a regional general permit for living shorelines that may apply to shellfish restoration, ALG10-2011 Living Shorelines General Permit.
 - **Scope:** Applies to shoreline preservation and restoration.
 - **Application:** Allows for oyster shell and oyster shell support structures to be used in the installation of living shorelines.
 - Still requires necessary easements from ADCNR-SLD for impacts to state-owned water bottoms.

Individual Permit Applications must be made for projects that do not meet the criteria for a NWP or RGP.

State Permitting:

ADEM will review the joint permit application for consistency with the Alabama coastal program and may add conditions. These may include concerns to navigation, water quality, public health and other impacts. In addition, a state submerged lands lease (aka easement) may still be required (discussed above).

C. Shellfish Restoration Permitting Snapshot

- Joint Application submitted to USACE
 - Oyster restoration may qualify for NWP 27 but will still require pre-construction notification (PCN). Permit application serves as PCN.
 - USACE consults with ADEM and ADNCR- SLD.
 - ADEM may place conditions on permit.
- Consent for Use or Waterbottom Easement – ADNCR-SLD

D. Research and Conservation Permitting

Research and conservation activities are expressly deemed a permissible use under ACAMP for the following agencies/organizations:

- Conservation, repletion, or research activities of the Marine Environmental Science Consortium, ADCNR-MRD, and Mississippi-Alabama Sea Grant Consortium.
- Conservation, repletion, research, and management activities associated with a National Estuarine Research Reserve (currently Weeks Bay is the only NERR in AL), state or federal park, wildlife refuge, the marine mammal stranding network, the U.S. Fish and Wildlife Service, or ADCNR.

E. Restoration in Closed Waters

Alabama Dept. of Public Health has raised objections to oyster restoration in closed waters over liability concerns should the public harvest the oysters and become ill. However, use of materials other than shell, the preferred substrate for larval settlement, may be allowed for nearshore restoration projects.

Protecting Existing Reefs and Restoration Projects

A. Reef Closure for Non-Public Health Concerns

Reefs may be closed to harvest for management or public health reasons at the discretion of ADCNR and Alabama Dept. of Public Health.

B. Sanctuaries and Other Protected Areas

- Designated Wildlife Sanctuaries³
 - All state parks and recreation areas (including Gulf State Park) are designated as game and wildlife sanctuaries.
 - Includes all water under the supervision of the Division of State Parks.⁴
- Geographically Protected Areas under ACAMP include:
 - Relevant Special Management Areas that may include protections for shellfish restoration projects (all taken from ACAMP):
 - Mobile-Tensaw River Delta: includes northern Mobile Bay. Management allows for presentation, enhancement of wetlands; other uses without regional benefits may be denied.

³ Ala. Admin. Code r. 220-5-.12.

⁴ Ala. Admin. Code r. 220-5-.13.

- Designated Areas of Preservation & Restoration:
 - Point Aux Pines Wetland System
 - Dauphin Island Audubon Sanctuary
 - Weeks Bay National Estuarine Research Reserve

- Shellfish habitat protection from other activities (energy development, dredging, directed fishing, poor water quality)
 - Other than the notations above regarding sanctuaries, harvesting methods, and special management areas, no additional habitat protections were found.

C. Other Tools for Protecting Shellfish Restoration Projects

No additional mechanisms for protecting shellfish restoration projects were discovered.

Oyster Management Generally

The wild oyster fishery is managed by the Alabama Dept. of Conservation and Natural Resources – Marine Resources Division. This section does not address oyster aquaculture, which is also regulated by Alabama Dept. of Conservation and Natural Resources.

A. Oyster Harvesting

- Season: Public and private reefs are open for harvest from October 1 – April 30
 - However, opening and closing of harvest zones vary throughout the season. Harvesting zones are open from 7 am to 2 pm Monday through Friday. Press releases are used to notify the public of which zone will be open.
- Licenses:
 - Commercial – requires commercial oyster catcher license from ADCNR-MRD
 - Personal – can harvest without a license up to 100 oysters a day. If harvesting more than 100 oysters a day, must have a commercial license.
 - Dredge – use of dredge requires a commercial dredge license from ADCNR-MRD.
- Harvesting Methods: Harvest from public reefs allowed by hands, tongs, and dredges.
- Replanting/reseeding post harvest requirements:
 - All oysters culled from a reef must be replaced and scattered on the reef from which they were taken.⁵

⁵ Ala. Admin. Code r. 220-3-.40.

- There is no indication that oyster reefs are managed for habitat services although oysters have been incorporated into shoreline erosion control projects and oyster shells can be used in living shoreline installations in waters open for harvest.

B. Public, Private, and Natural Reef Distinctions

Alabama laws do not distinguish between public, private, and natural reefs; the laws do distinguish between natural reefs and oyster aquaculture. Much like shellfish restoration, oyster aquaculture is permitted by Alabama Department of Natural Resources in conjunction with other agencies including USACE, Alabama Department of Environmental Management, ADCNR State Lands Division, and Alabama Department of Public Health. Separate from oyster aquaculture, riparian landowners may hold additional harvesting privileges to natural reefs located in their riparian zone.

Alabama's Artificial Reef Program is jointly managed by the USACE and the ADCNR-MRD.

Existing Shellfish Restoration Efforts

A. Government

In the last several years, Alabama has undertaken numerous commercial shellfish restoration projects. Highlighted projects include:

- 2009 Portersville Bay, 300 acres planted with 15,000 cubic yards of oyster shell, oyster reef restoration, funded by Emergency Disaster Relief Programs (EDRP) (Hurricane Ivan and Katrina Disaster Relief)
- 2010 Relay Reef (created reef), 85 acres planted with 104,712 Alabama Sacks of cultch and oysters relayed from restricted waters in Upper Mobile Bay, oyster reef creation, funded by EDRP
- 2011 Relay Reef, 85 acres planted with 98,062 Alabama Sacks of cultch and oysters relayed from restricted waters in Upper Mobile Bay, oyster reef creation, funded by EDRP
- 2012 Cedar Point East and Cedar Point West, 100 acres planted with 5103 cubic yards of oyster shell, oyster reef restoration/ creation, funded by EDRP and shell management fees
- 2013 Middle Ground in Portersville Bay, 50 acres planted with 4722 cubic yards of oyster shell, oyster reef restoration, funded by NFWF and funds from lawsuit settlement Bayou La Batre suit
- 2014 Spring, Cedar Point East, Cedar Point West, Heron Bay, 400 acres planted with 13000 cubic yards of oyster shell and 15000 cubic yards of #57 limestone, oyster reef restoration, funded by NFWF

- 2014 Fall, (in progress), Relay Reef and Area VI Reef, 76 acres, planted with 5500 cubic yards of oyster shell and 5500 cubic yards of #3 Limestone, oyster reef restoration, creation, funded by NFWF
- 2015 Spring Prospective 50,000 cubic yards of material (will be a combination of limestone and oyster shell) to be planted on Cedar Point East, Cedar Point West, and Heron Bay Reefs, oyster reef restoration, funding facilitated by the NOAA/ National Resource Damage Assessment as part of settlement for the Deepwater Horizon Oil Spill restoration.

B. Non-government and Private

Private restoration projects can take advantage of living shoreline permitting that allows the use of oyster shell and cultch in living shoreline and other alternative shoreline erosion control projects.

- TNC and Dauphin Island Sea Lab have both conducted several oyster reef installations in Mobile Bay.
- Little Bay restoration project also includes an oyster structure component.

Mitigation

There are currently no programs in place for receiving mitigation credits for shellfish restoration in Alabama.

CALIFORNIA

Shellfish Management at a Glance

The following provides a brief reference to regulatory permitting programs applicable to shellfish restoration in California. Related permitting requirements are addressed in subsequent sections.

A. Coastal Program

- Responsible Agency: California Coastal Commission
- Relevance: California Coastal Commission regulates activities in the coastal zone and handles federal consistency reviews.
- Website: <http://www.coastal.ca.gov/>

B. Submerged Lands

- Responsible Agency: California State Lands Commission
- Relevance: Oversees leasing of and permitting of activities on submerged lands.
- Website: <http://www.slc.ca.gov/>

C. Fisheries Management

- Responsible Agency: California Department of Fish and Wildlife
- Relevance: Manages state fisheries.
- Website: <https://www.wildlife.ca.gov/>

D. Shellfish Aquaculture

- Responsible Agency: California Department of Fish and Wildlife
- Relevance: Regulates shellfish aquaculture. Has the authority to lease state lands for aquaculture purposes, including for kelp restoration.
- Website: <https://www.wildlife.ca.gov/>

E. Shellfish Sanitation

- Responsible Agency: California Department of Public Health
- Relevance: Manages recreational and commercial shellfish harvesting for public health purposes in accordance with the National Shellfish Sanitation Program Guidelines.
- Website: <http://www.cdph.ca.gov/>

Submerged Lands Permitting

Shellfish restoration projects may require leasing of state-owned submerged lands. This section discusses the role of state-owned submerged lands, availability of King's or Crown grants, and other aspects of leasing submerged lands for restoration projects.

A. State-Owned Submerged Lands

- State's ownership of tidelands, submerged lands, and beds of navigable waterways includes lands below the ordinary high water mark of tidal waterways and below the ordinary low water mark of non-tidal waterways.
- Public Trust Rights: commerce, navigation, fisheries, ecological habitat protection, water-oriented recreation, and preservation of land in its natural condition.⁶
- Riparian rights: No specific provisions found regarding riparian rights to shellfish resources. Leases typically granted to riparian or littoral upland owners but SLC has discretion to grant lease to the best qualified applicant.⁷

B. Leasing Process

- *Generally*: The State Lands Commission (SLC) may grant leases on state-owned submerged lands, which are lands seaward of the mean low tide line. Generally, leases must comply with the California Environmental Quality Act, although an exception from the review process may be granted for conservation projects that are aimed at the protection of natural resources.⁸ In addition, the Significant Lands Inventory by the SLC classifies lands into Class A, B, or C lands. The SLC may only approve uses for lands consistent with the use classification
 - Leasing guidelines:
http://www.slc.ca.gov/Online_Forms/LMDApplication/Lease_App_Guidelines_2011.pdf
 - Lease form:
http://www.slc.ca.gov/Online_Forms/LMDApplication/Lease_App_Form_2011.pdf
- *Aquaculture*: The California Fish and Game Commission leases state water bottoms for aquaculture purposes.
 - Information on regulations governing the lease of state water bottoms:
<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=27450&inline=true>

⁶ Nat'l Audubon Soc'y v. Superior Court, 33 Cal. 3d 419, 434, 658 P.2d 709, 719 (1983).

⁷ CAL. CODE REGS, tit. 2, 2002.

⁸ CEQA Guidelines § 15307.

C. King's or Crown Grants

Prior to statehood, the Mexican government granted land, including some tidelands, to individuals.

D. Conservation Leasing

No specific provisions authorizing the leasing of submerged lands for conservation were found.

Permitting Shellfish Restoration

A. Permitting Agencies

- California Coastal Commission
- San Francisco Bay Conservation and Development Commission
- USACE

B. Permitting Process

Restoration projects will generally require permitting for use of environmental resources, sovereign submerged lands, and federal dredge and fill. As discussed above, a lease from the SLC is required for all activities on all state-owned submerged lands. A restoration project may also require state permits. The California Coastal Act of 1976 grants the California Coastal Commission the authority to regulate activities in the coastal zone, which is defined to extend three miles offshore.⁹ The coastal zone does not include the San Francisco Bay, which is regulated by the San Francisco Bay Conservation and Development Commission.

Coastal Development Permit

Development in the coastal zone requires a coastal development permit issued by the California Coastal Commission.¹⁰ Applications should be submitted to the District in which the project is located.¹¹

San Francisco Bay Permit

To simplify permitting in the San Francisco Bay area, the San Francisco Bay Conservation and Development Commission, which has jurisdiction over areas not included in the

⁹ *Id.* § 30103.

¹⁰ *Id.* § 30600.

¹¹ See <http://www.coastal.ca.gov/cdp/cdp-forms.html>.

California Coastal Act, has combined permitting needs into one joint permit application.¹² The Joint Aquatic Resource Permit Application is for use in San Francisco, Contra Costa, Alameda counties, Marin County (except Gazos Creek Watershed), and portions of the following counties that drain to San Francisco Bay: Sonoma, Napa, Solano, and Santa Clara.

USACE Permitting:

The Sacramento District of the USACE oversees federal dredge and fill permitting in California. California allows for use of NWP 27 (aquatic habitat restoration)¹³ with the following conditions: Pre-construction Notification (PCN) required if the activity would 1) result in a discharge of dredged and/or fill material into perennial waters, intermittent waters, wetlands, mudflats, vegetated shallows, riffle and pool complexes, sanctuaries and refuges, or coral reefs or 2) result in discharge into more than 100 linear feet of ephemeral waters of the U.S.

If NWP does not apply, an individual Corps permit is required.

C. Shellfish Restoration Permitting Snapshot

- Coastal Development Permit: application submitted to California Coastal Commission.
- Joint Aquatic Resource Permit: for projects under jurisdiction of the San Francisco Bay Conservation and Development Commission.
- USACE Permitting:
 - NWP 27: Submission of PCN to USACE.
 - Individual Permit: only needed if project does not fall within NWP 27.
- State submerged lands lease from SLC maybe required.

D. Research & Conservation Permitting

No specific provisions for research or conservation permitting are available.

E. Restoration in Closed Waters

No provision was found expressly prohibiting shellfish restoration projects in closed waters.

¹² <http://www.sfestuary.org/wp-content/uploads/2013/12/JARPA1106-final.pdf>.

¹³ http://www.spk.usace.army.mil/Portals/12/documents/regulatory/nwp/2012_nwps/2012-NWP-27.pdf.

Protecting Existing Reefs and Restoration Projects

A. Reef Closure for Non-Public Health Reasons

California does not have a voluntary reef closure policy.

B. Sanctuaries & Other Protected Areas

Marine Protected Areas: Pursuant to the Marine Life Protection Act (MLPA), the Department of Fish and Wildlife has established a system of marine protected areas (MPAs) to increase its coherence and effectiveness at protecting the state's marine life, habitats, and ecosystems. For the purposes of MPA planning, a public-private partnership commonly referred to as the MLPA Initiative was established, and the state was split into five distinct regions (four coastal and the San Francisco Bay) each of which had its own MPA planning process. All four coastal regions have completed these individual planning processes. As a result the coastal portion of California's MPA network is now in effect statewide. Options for a planning process in the fifth and final region, the San Francisco Bay, have been developed for consideration at a future date.

<http://www.dfg.ca.gov/marine/mpa/index.asp>

C. Other Tools for Protecting Shellfish Restoration Projects

No additional provisions were found.

Oyster Management Generally

This section details the general requirements for oyster harvesting, including licenses, seasons, and other relevant details. This section does not address oyster aquaculture, which is regulated by the Department of Fish and Wildlife. California also regulates the following shellfish: clams, mussels, abalone, and other shellfish.

A. Oyster Harvesting

- Season: Open year round.
- License:
 - Commercial Tidal Invertebrate Permit: No shellfish may be taken, possessed aboard a boat, or landed for commercial purposes by any person in any tide pool or tidal area, including tide flats or other areas between the high tidemark and 1,000 feet beyond the low tidemark, unless a valid tidal invertebrate permit has been issued to that person that has not been suspended or revoked.

- Recreational sport fishing license available. Type dependent on residency and length required: <https://www.wildlife.ca.gov/Licensing/Fishing>
- Harvesting Requirements:
 - There are no closed seasons, closed hours, or minimum size limits for any invertebrate. The bag limit on all invertebrates for which the take is authorized and for which there is not a bag limit is 35. In San Francisco and San Pablo bays and saltwater tributaries east of the Golden Gate Bridge invertebrates may not be taken at night except from the shore.¹⁴

B. Public, Private, and Natural Reef Distinctions

The California Department of Fish and Wildlife (DFW) oversees the regulation of public, private, natural, and artificial reefs in California waters. Artificial reef construction is one aspect of the DFW's Nearshore Sport Fish Habitat Enhancement Program for restoring or enhancing sport fish habitat along the southern California coastline.¹⁵

Existing Shellfish Restoration Efforts

A. Government

A native oyster restoration project in San Francisco Bay was undertaken by the DFW and others. This project included surveying oyster distribution, collecting data on diseases and predators, and developing a baywide restoration plan. Results were summarized in the final report, Planning for Native Oyster Restoration in San Francisco.¹⁶

B. Non-government and Private

- Pacific Coast Shellfish Growers Association-California Shellfish Initiative
<http://pcsga.org/shellfish-initiative/>
- San Francisco Bay Living Shorelines Project (via Oyster Recovery Partnership)
http://www.sfbaylivingshorelines.org/sf_shorelines_about.html
- <http://www.restore-olys.org/Restore-Olys/WELCOME.html>
- TNC's Richardson Bay
http://www.mcatoolkit.org/Field_Projects/Field_Projects_US_California_1_Richardson_Bay.html
- TNC's kelp lease
http://www.mcatoolkit.org/Field_Projects/Field_Projects_US_California_2_Kelp_Research.html

¹⁴ CAL. CODE REGS. tit. 14, § 29.05.

¹⁵ <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=30191&inline=true>

¹⁶ http://opc.ca.gov/webmaster/ftp/project_pages/Subtidal/SFBayNativeOysterFinalReport.pdf

Mitigation

There are currently no programs in place for receiving mitigation credits for shellfish restoration in California.

CONNECTICUT

Shellfish Management At a Glance

The following provides a quick reference to relevant state laws and regulatory programs impacting shellfish management and restoration projects in Connecticut. Related permitting requirements are addressed in subsequent sections.

A. Coastal Program

- Responsible Agency: Connecticut Dept. of Energy and Environmental Protection
- Relevance: Regulates work in tidal, coastal and navigable waters and tidal wetlands.
- Components:
 - Connecticut Coastal Management Act, Section 22a-90 through 22a-112 of the Connecticut General Statutes
 - Structures Dredging and Fill Statutes, Section 22a-359 through 22a-363f
 - Tidal Wetlands Act, Section 22a-28 through 22a-35
- Website: <http://www.ct.gov/deep> (refer to Coastal Permits - Long Island Sound Program)

B. Submerged Lands

- Note: Connecticut does not have a submerged lands leasing program except for: shellfish and aquaculture leases and marine mining royalty payments.
- Responsible Agency for Shellfish Leasing: Connecticut Dept. of Agriculture
- Relevance: Oversees shellfish and aquaculture leases
- Website: <http://www.ct.gov/doag/site/default.asp>

C. Fisheries Management

- Responsible Agency: Connecticut Dept. of Energy and Environmental Protection – Division of Fisheries
- Relevance: Manages fishery harvests within state waters.
- Website: <http://www.ct.gov/deep>

D. Shellfish Aquaculture

- Responsible Agency: Connecticut Dept. of Agriculture – Bureau of Aquaculture
- Relevance: Regulates shellfish aquaculture within Connecticut.
- Website: <http://www.ct.gov/doag>

E. Shellfish Sanitation

- Responsible Agency: Connecticut Dept. of Agriculture – Bureau of Aquaculture
- Relevance: State counterpart to the National Shellfish Sanitation Program.
- Website: <http://www.ct.gov/doag>

Submerged Lands Permitting

Shellfish restoration projects may require leasing of state-owned submerged lands. This section discusses the role of state-owned submerged lands, the availability of King's or Crown grants, and other aspects of leasing submerged lands for restoration projects.

A. State-Owned Submerged Lands

- Connecticut holds title to lands below the mean high water mark in trust for the public.
 - The public trust area is sometimes referred to as tidelands and is defined as public beach by the Connecticut Coastal Management Act.
- Public trust rights: include fishing, boating, hunting, bathing, taking shellfish, gathering seaweed, cutting sedge, and of passing and repassing. . ." *Orange v. Resnick*, 94 Conn. 573 (1920).¹⁷

B. Leasing Process

- *Generally*: Connecticut does not currently have a submerged lands leasing program except for: shellfish and aquaculture leases and marine mining royalty payments.¹⁸ All other public trust concerns are vetted during the Coastal Permit process, discussed in the permitting section below.
- *Shellfish Leasing*: Shellfish leasing is managed by the Connecticut Dept. of Agriculture.
 - Leases underwater shellfish grounds in Long Island Sound through a competitive bidding process.
 - Leases for the purpose of planting, cultivating, and harvesting shellfish crops.
 - There is a 50-acre minimum and 200-acre maximum. Leased acreage must be rectangular or square in shape.
 - Maps of shellfish ground leasing areas are available on the agency website.¹⁹

C. King or Crown Grants

Small areas of Connecticut submerged lands may be held in private ownership through a pre-statehood king's grant. "In order for title to such submerged lands to be in the upland

¹⁷ See also: http://www.ct.gov/deep/cwp/view.asp?a=2705&q=323802&deepNav_GID=1635

¹⁸ The state also collects "facility host payment" fees for post-2004 for underwater cables and pipelines, per CONN. GEN. STAT. § 26-194(c).

¹⁹ <http://www.ct.gov/doag/cwp/view.asp?a=3768&q=458584> .

owner, a pre-statehood grant of the submerged land to the upland owner claiming ownership of the submerged lands must be established.”²⁰

D. Conservation Leasing

There is no mechanism for conservation leasing under Connecticut’s submerged lands management program.

Permitting Shellfish Restoration

A. Permitting Agencies

- Dept. of Energy and Environmental Protection (DEEP)
 - Office of Long Island Sound Programs (OLISP)
- U.S. Army Corps of Engineers (USACE)

B. Permitting Process

The State of Connecticut does not have a joint permit application process with the USACE New England District. Shellfish restoration project proponents must submit separate state and federal permit applications.

State Permitting:

The Connecticut Coastal Management Act, Structures Dredging and Fill Act, and Tidal Wetlands Act make up Connecticut’s Coastal Management Program. These laws apply to all activities conducted in tidal wetlands and in tidal, coastal or navigable waters in Connecticut. Permitting under these laws is overseen by Connecticut DEEP’s Office of Long Island Sound Programs (OLISP). There are three types of permits available, depending on the activity and nature of work: Individual Permits, Certificates of Permission, and General Permits.

Certificates of Permission are available for certain environmentally beneficial activities such as wetland restoration. The Certificate of Permission may be available for shellfish restoration projects, particularly if they are undertaken by DEEP or supervised by DEEP. However, no projects have been undertaken to-date.²¹ General Permits are available for several listed activities, but none are applicable to shellfish restoration projects.

²⁰ McNally v. City of Norwalk Zoning Com'n, 1991 WL 169540, Superior Court of Connecticut, Judicial District of Stamford-Norwalk, at Stamford (August 21, 1991) (Not Reported in A.2d, citing *Shively v. Bowlby*, 152 U.S. 1, 24 (1894)).

²¹ Per agency reviewer comments.

Projects not qualifying for a Certificate of Permission or a General Permit will need to seek a Structures, Dredging, Fill and/or Tidal Wetland Permit (referred to as a full permit or individual permit) from OLISP.²²

Any person considering a restoration project should contact the DEEP before beginning the project, regardless of permitting requirements.²³

USACE Permitting:

Restoration projects require permits from the USACE under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act. The New England District of the USACE regulates activities in wetlands and waterways including the discharge of dredged or fill material and work within tidal, navigable waterways. Nationwide Permits have been suspended in New England. Regional general permits with state-specific conditions are used instead. In Connecticut, the relevant general permit will be revisited by the July 15, 2016 expiration date.

Shellfish restoration projects may fall within either Category 1 or Category 2 of the general permit (coastal waters). Shellfish restoration activities may qualify for a Connecticut general permit under the following sections provided the work meets the eligibility requirements and terms and conditions of the permit:

- Aquaculture Projects & Fisheries, Category 1 activity: shellfish seeding/spatted-shell or cultch for the purposes of enhancement or restoration of a native shellfish population.
- Miscellaneous, Category 2 activity: aquatic habitat restoration or enhancement that results in net increases in aquatic resource functions.

Otherwise, restoration activities will require an individual permit.²⁴

C. Shellfish Restoration Permitting Snapshot

- Coastal Permit: Shellfish restoration activities could require the submittal of a Certificate of Permission and/or a Structures, Dredging, Fill and Tidal Wetlands Permit and an Aquaculture Certificate.²⁵

²² More details and permit applications can be found on the Dept.'s website:
http://www.ct.gov/deep/cwp/view.asp?a=2705&q=323582&deepNav_GID=1622

²³ Per agency reviewer comments.

²⁴ See:

<http://www.nae.usace.army.mil/Missions/Regulatory/StateGeneralPermits/ConnecticutGeneralPermit.aspx>

²⁵ Connecticut has an Aquaculture Permitting workgroup that is made up of the following agencies: CT Dept. of Agriculture – Bureau of Aquaculture, CT DEEP (OLISP, Fisheries, and Boating) and USACE.

- All coastal permit requests should be submitted to Connecticut DEEP-OLISP
- Use of state-owned submerged lands is evaluated through this permitting process.
- USACE Permit: Connecticut General Permit Category 1 or Category 2 (coastal waters). Otherwise, individual permit.
- Projects may also require permissions from Dept. of Agriculture – Bureau of Aquaculture (for aquaculture certificate) and DEEP Boating Division (for markers).²⁶

D. Research & Conservation Permitting

The Coastal Permit Program does not include research or conservation permitting exceptions. The USACE Connecticut General Permit program allows use of a Category 2 General Permit for shellfish and aquaculture research activities.

E. Restoration in Closed Waters

No provisions were found that would expressly prohibit shellfish restoration activities in closed waters, though the Dept. of Agriculture – Bureau of Aquaculture may place limitations on the type of oysters used.

Protecting Existing Reefs and Restoration Projects

A. Reef Closure for Non-Public Health Concerns

Local shellfish commissions may close waters for up to one year, as discussed below.

B. Sanctuaries & Other Protected Areas

Wildlife sanctuaries and fish and game refuges are managed by the Connecticut DEEP-Division of Wildlife and/or the Division of Fisheries as well as the U.S. Fish and Wildlife Service.

- Long Beach and Penfield Reef

No person shall draw, set, or use any net, seine, pound net, fyke net, or set net in any waters of Long Island Sound or any creek or tributary thereof, lying north of a line drawn from the breakwater on what is known as Long Beach to the Penfield Reef lighthouse, and thence

²⁶ Per agency reviewer.

along said Penfield Reef to the shore or mainland in the town of Fairfield.²⁷ However, this reef protection has limited applicability to shellfish restoration protections.

C. Other Tools for Protecting Shellfish Restoration Projects

- Local shellfish commissions may prohibit the taking of shellfish from certain designated areas for periods not in excess of one year.²⁸

Oyster Management Generally

The wild oyster fishery is managed by the Connecticut DEEP-Division of Fisheries. This section does not address oyster aquaculture, which is regulated by the Connecticut Dept. of Agriculture – Bureau of Aquaculture. In addition to oysters, Connecticut also regulates the harvest of other shellfish including clams.

A. Oyster Harvesting

- Season: Varies
- Licenses:
 - Recreational: local municipalities may issue recreational shellfishing licenses, or no license may be required. Check with local officials.
 - Commercial: Commercial License and if applicable Commercial Fishing Vessel Permit.
- Additional Resources:
 - 2008 Guide to Shellfishing Along the Coast of Connecticut, available: <http://www.ct.gov/doag/cwp/view.asp?a=1369&q=259178>

Local Shellfish Commissions

Any town, city or borough may establish a shellfish commission or may join with one or more other towns, cities or boroughs, in establishing such a commission. The commission will have charge of all the shellfisheries and shellfish grounds lying in such municipality, including all rivers, inland waters and flats adjacent to all beaches and waters within the limits and marine bounds of the municipality or municipalities. The commission may designate suitable places in the navigable waters within its jurisdiction for planting or cultivating oysters, clams or mussels. The commission may issue licenses for the taking of shellfish and may designate the quantities of such shellfish to be taken, the sizes of such shellfish and the methods of taking. The commission may prohibit the taking of such

²⁷ CONN. GEN. STAT. § 26-175. The Niantic River Gateway Conservation Area is another conservation area but has limited application to shellfish, per agency reviewer.

²⁸ *Id.* § 26-257a.

shellfish from certain designated areas for periods not in excess of one year. All moneys collected by the commission shall be paid to the commission and used by it for the protection and propagation of the shellfish under its control. The commission must prepare and periodically update a shellfish management plan. The plan shall be submitted to the Commissioner of Agriculture for review and comment.²⁹

A list of local shellfish commissions is available online.³⁰

B. Public, Private, and Natural Reef Distinctions

- Private Ownership of Cultivated Shellfish:

Each person who plants or cultivates oysters, clams or mussels, in any place lawfully designated, shall own them and also all other oysters, clams or mussels on such place, and have the exclusive right of taking up and disposing of them and of using such place for the purpose of planting or cultivating oysters, clams or mussels therein, which place shall be transferable by written assignment; but nothing herein contained shall affect the rights of any owner of lands in which there may be saltwater creeks or inlets, or which may be opposite or contiguous to such navigable waters; nor authorize any shellfish commission or selectmen to designate, nor any person to mark, stake out or enclose, any natural oyster or clam bed, or infringe upon the free navigation of such waters, or interfere with the drawing of seines in any place established and customarily used for seine fishing.³¹

Existing Shellfish Restoration Efforts

A. Government

State coastal habitat restoration efforts do not include specific reference to shellfish restoration (focus on wetlands, coves, barrier beaches).³² However, state agencies may pursue shellfish habitat restoration in the future.³³

²⁹ *Id.* § 26-257a.

³⁰ List of local shellfish commissions available at:

http://www.ct.gov/deep/lib/deep/permits_and_licenses/land_use_permits/long_island_sound_permits/shellfish_commission.pdf

³¹ CONN. GEN. STAT. § 26-249.

³² Available at:

http://www.ct.gov/deep/cwp/view.asp?a=2705&q=323538&deepNav_GID=1622

³³ Per agency reviewer.

- Seed Oystering Program: The seed oystering program is a program within the Department of Agriculture for the purchase of cultch (shells) for planting on Connecticut's public seed oyster beds.³⁴ The cultch program was established in 1987 with an initial bond authorization of \$1.3 million. Subsequently, an additional \$4,000,000 was bonded and harvesters taking seed from enhancement areas paid a 10% assessment on the sale value of their harvests. The money, collected by the Department of Revenue Services, was deposited in a dedicated fund to help sustain this program. The program enhanced over 3,000 acres of beds with approximately 5.2 million bushels of shells. The program has not been funded in the last 5 years due to economic limitations of the state budget.

B. Non-government and Private

- Connecticut Shellfish Initiative: Recognizing the potential for growth among important shellfish sectors, Connecticut Sea Grant/UCONN Extension is facilitating the development of a Visioning Plan for Connecticut's Shellfish Resources. The three focus areas are: natural shellfish resources, recreational harvest, and commercial shellfish production.³⁵

Mitigation

There are currently no programs in place for receiving mitigation credits for shellfish restoration in Connecticut.

³⁴ Conn. Gen. Stat. § 26-237(a).

³⁵ See: <http://shellfish.uconn.edu/>

DELAWARE

Shellfish Management at a Glance

The following provides a brief reference to regulatory permitting programs applicable to shellfish restoration in Delaware. Related permitting requirements are addressed in subsequent sections.

A. Coastal Program

- Responsible Agency: Delaware Department of Natural Resources and Environmental Control – Delaware Coastal Program
- Relevance: Manages coastal resources and handles federal consistency reviews.
- Website: <http://www.dnrec.delaware.gov/coastal/Pages/CoastalMgt.aspx>

B. Submerged Lands

- Responsible Agency: Delaware Department of Natural Resources and Environmental Control – Wetlands and Subaqueous Lands
- Relevance: Oversees leasing of and permitting of activities on submerged lands and tidelands.
- Website: <http://www.dnrec.delaware.gov/wr/Services/Pages/WetlandsAndSubaqueousLands.aspx>

C. Fisheries Management

- Responsible Agency: Delaware Department of Natural Resources and Environmental Control – Division of Fish & Wildlife
- Relevance: Manages the state's fish and wildlife resources.
- Website: <http://www.dnrec.delaware.gov/fw/Pages/FWPportal.aspx>

D. Shellfish Aquaculture

- Responsible Agency: Delaware Department of Natural Resources and Environmental Control – Division of Fish & Wildlife.
- Relevance: Regulates shellfish aquaculture in Delaware's Inland Bays.
- Website: <http://www.dnrec.delaware.gov/fw/Fisheries/Pages/Fisheries.aspx>

E. Shellfish Sanitation

- Responsible Agency: Delaware Department of Natural Resources and Environmental Control – Division of Watershed Stewardship, Shellfish and Recreational Water Program
- Relevance: Manages recreational and commercial shellfish harvesting for public health purposes in accordance with the National Shellfish Sanitation Program

Guidelines. Responsible for determining the classification of waters (Approved, Prohibited or Conditional) for the harvest, planting (including restoration), or relay of oysters.

- Website:
<http://www.dnrec.delaware.gov/swc/wa/Pages/Watershed%20Assessment%20Shellfish%20Program.aspx>

Submerged Lands Permitting

Shellfish restoration projects may require leasing of state-owned submerged lands. This section discusses the role of state-owned submerged lands, availability of King or Crown grants, and other aspects of leasing submerged lands for restoration projects.

A. State-Owned Submerged Lands

- In Delaware, state-owned submerged lands and tidelines are referred to as “subaqueous lands.” Subaqueous lands include: “(1) Lands lying below the line of mean low tide in the beds of all tidal waters within the boundaries of the State; [and] (2) Lands lying below the plane of the ordinary high water mark of nontidal rivers, streams, lakes, ponds, bays and inlets within the boundaries of the State as established by law.”
- Public Trust Rights: Commerce, navigation, and fishing rights on navigable and tidal waters.³⁶
- Riparian rights to shellfish: Delaware law states that the leasing subaqueous land is not intended to limit any riparian rights.³⁷ Riparian rights in Delaware give riparian landowners the right to “wharf out” which means to have access to the water usually with a pier and dock. Riparian rights do not give riparian owners any specific rights regarding the harvest or planting of shellfish. It is unlawful “to take any shellfish from any waters or shellfish grounds ... unless specifically authorized by statute or regulation.”³⁸

B. Leasing Process

- *Generally:* A subaqueous lands lease from DNREC must be obtained prior to the placement of any structure (dock, pier, pipeline, shoreline stabilization, etc.) or any

³⁶ Bickel v. Polk, Delaware Supr. 5 Harr. 325 (1851).

³⁷ 7 DEL. CODE ANN. § 7213.

³⁸ *Id.* §1904(a).

fill placed in underwater lands below the mean low water line. Projects that involve fill below the mean low water line are also subject to an annual lease fee.

- A person seeking a subaqueous lands permit, lease, or other authorization from DNREC must complete and submit the Basic Application Form and the appropriate Appendix (e.g., fill, vegetative stabilization).
 - <http://www.dnrec.delaware.gov/wr/Information/Permits/Pages/WetlandsandSubaqueousLandsPermittingInfo.aspx>
- *Aquaculture*: DNREC is authorized to lease tracts or parcels of shellfish grounds to be used for protecting, planting, and harvesting shellfish. Except in the case of shellfish aquaculture leases in Delaware's Inland Bays:
 - Leases may not be issued for (1) shellfish grounds within 1,000 feet of the natural shoreline (mean high water) of any state waters or (2) natural oyster beds.
 - No new shellfish grounds shall be leased to any person in tracts consisting of less than 50 or more than 100 acres.
 - DNREC shall annually advertise the general locations of shellfish grounds which may be leased and are not currently subject to a valid lease.
 - Any person wishing to lease shellfish grounds in accordance with this section shall make application to DNREC prior to March 15. If more than 1 application is received for the same grounds, the grounds will be leased on a competitive sealed bid over and above the base fee for the first year.
 - Leasing of submerged lands for shellfish aquaculture in Delaware's Inland Bays was authorized by the Delaware Legislature in 2013 and is governed under separate regulatory provisions that are similar to the general shellfish aquaculture leasing provisions.
 - The Shellfish Aquaculture Regulation was approved in 2014 and is available at:
<http://regulations.delaware.gov/AdminCode/title7/3000/3800/3801.shtml#TopOfPage>.

C. King or Crown Grants

Delaware notes the existence of privately owned subaqueous lands. Delaware law requires private lands owners to obtain a subaqueous lands permit from DNREC before using their lands in a way that may pollute public waters, infringe on public rights or other private owners rights, or will connect to public subaqueous lands.³⁹

³⁹ *Id.* § 7203.

D. Conservation Leasing

There are no provisions expressly authorizing the leasing of submerged lands for conservation purposes.

Permitting Shellfish Restoration

A. Permitting Agencies

- Delaware Department of Natural Resources and Environmental Control
- USACE

B. Permitting Process

Restoration projects will generally require permitting for use of environmental resources, sovereign submerged lands, and federal dredge and fill. As discussed above, a subaqueous lands lease is required for all activities on all state-owned tidal underwater lands in Delaware. The same authorization, referred to as a subaqueous lands permit, is required for activities on private tidal underwater lands. Delaware does not require additional permits for activities in coastal waters.

- A shellfish lease would require additional authorization from the DNREC Division of Fish & Wildlife. Shellfish restoration in state waters, if done by an entity other than the state, would require authorization from the DNREC Division of Fish & Wildlife if the work would involve stocking live shellfish.

USACE Permitting:

The Philadelphia District of the USACE oversees federal dredge and fill permitting in Delaware. Delaware allows for use of NWP 27 (aquatic habitat restoration) with the following condition: “Any activity involving shellfish seeding, such as, the placement of shell material or any other habitat development or enhancement, is restricted to shellfish species that are native to that waterbody.” Any restoration work done under NWP 27 requires pre-construction notification (PCN) in most circumstances.

C. Shellfish Restoration Permitting Snapshot

- DNREC Subaqueous Lands Lease: Shellfish restoration project will require a lease if placement of structure or fill is involved.
- DNREC Division of Fish & Wildlife authorization for restoration projects involving stocking of live shellfish.

- USACE Permitting:
 - NWP 27: Submission of PCN to USACE. USACE will issue letter of verification if applicant in compliance with NWP.
 - Individual Permit: only needed if project does not fall within NWP 27.

D. Research & Conservation Permitting

- DNREC is authorized to issue leases “to educational and/or scientific institutions or their designees for tracts or parcels of shellfish grounds to be used for scientific and/or educational purposes determined by [DNREC] to be in the best interests of the shellfisheries aquaculture industry.”⁴⁰
 - The authorization must set forth: Seasonal dates, seasonal harvest, size limits and the reason for the permit.
 - Aquaculture products produced on shellfish grounds leased for scientific purposes may not be sold or traded or offered for sale or trade.
 - Equipment must be removed upon the termination of the scientific investigation.

E. Restoration in Closed Waters

Restoration of shellfish in any waters not classified as “Approved” must be reviewed and approved by DNREC’s Shellfish and Recreational Water Programs.

- Oyster gardening is conducted in waters closed to shellfishing in the Inland Bays. Those participating must agree to neither eat nor sell their oysters.

Protecting Existing Reefs and Restoration Projects

A. Reef Closure for Non-Public Health Concerns

Delaware does not have a voluntary reef closure policy. Reefs may be closed for health concerns.

- **Note:** The DNREC Division of Fish & Wildlife is exploring rotating commercial harvest from the public oyster beds in Delaware Bay. This would involve directing all commercial harvest to certain beds in a given year while putting other beds off limits.⁴¹

⁴⁰ *Id.* § 2005(b).

⁴¹ Personal communication with John Clark, Delaware Division of Fish & Wildlife.

B. Sanctuaries & Other Protected Areas

There are two wildlife refuges in Delaware that are managed by the U.S. Fish and Wildlife Service that protect marsh and nearshore habitats.

- Bombay Hook National Wildlife Refuge
- Prime Hook National Wildlife Refuge

C. Other Tools for Protecting Shellfish Restoration Projects

No provisions found.

Oyster Management Generally

The wild oyster fishery is managed by the DNREC Division of Fish & Wildlife. This section does not address oyster aquaculture, which is also regulated by the DNREC Division of Fish & Wildlife.

A. Oyster Harvesting

This section details the general requirements for oyster harvesting, including licenses, seasons, and other relevant details.

- Season:
 - Delaware sets the oyster harvest season annually. In 2014, it was open from May 5-June 23 and September 1-December 31. Additional information can be found at:
 - <http://www.dnrec.delaware.gov/fw/Fisheries/Pages/CommercialFishing.aspx>
- Licenses:
 - The direct harvesting of oysters from the state's natural oyster beds is a limited fishery. Certain requirements must be met in order to receive a license and there is a harvest fee. State law prohibits DNREC from granting licenses to new licensees after June 30, 2011.
 - See: <http://www.dnrec.delaware.gov/fw/Services/Pages/Com-Fish.aspx>
- Harvesting Requirements:
 - Quotas are established annually.
 - 2.75 inch minimum size.
 - Methods allowed: It is unlawful to harvest oysters from natural oyster beds with any gear other than an oyster dredge that measures no more than 52 inches in length along the tooth bar. Prohibited methods includes:

- An oyster dredge with teeth measuring more than four inches in length;
 - Operating more than two oyster dredges overboard at the same time; and
 - Operating any dredge that is attached to another dredge.
 - All oysters harvested from Delaware must be sold to a Delaware certified dealer who has received a dealer license annually from the Shellfish and Recreational Water Programs. No oysters harvested by Delaware watermen can enter intrastate or interstate commerce unless they are purchased from a Delaware certified dealer.
- Replanting/Reseeding Requirements:
 - Delaware law provides that it is “unlawful for a person to harvest oysters from the State's natural oyster beds without immediately culling said live oysters from all shell and other materials and returning said shell and other materials to the State's natural oyster beds. Oysters shall be culled as aforesaid so that 2 bushels of oysters shall not contain more than 5 percent shells and other materials.”⁴²

B. Public, Private, and Natural Reef Distinctions

DNREC Division of Fish & Wildlife oversees regulation of natural oyster beds and private shellfish aquaculture leases.

- Natural oyster beds are “those shellfish grounds located to the North of the ‘East Line’ in Delaware Bay and River and shellfish grounds located upstream of the entrances of all tributaries entering the Delaware River and Delaware Bay under the jurisdiction of the State.”⁴³

Existing Shellfish Restoration Efforts

A. Government

The Delaware Bay Oyster Restoration Task Force is a partnership between Delaware and New Jersey agencies and other organizations that are working on restoring oyster beds in Delaware Bay.

- During the summer of 2005, the Task Force initiated a large-scale oyster shell-planting and transplant program that by 2011 had deposited almost 2.4 million bushels of shell onto existing oyster reefs. See, <http://delawareestuary.org/node/85>

⁴² 7 DEL. CODE ANN. § 2104.

⁴³ 7 DEL. ADMIN. CODE § 3766.

B. Non-government and Private

The Delaware Center for Inland Bays (CIB) operates an Oyster Gardening Program demonstration project.

- The Oyster Gardening Program is a cooperative effort between the CIB, the Delaware Sea Grant Marine Advisory Program, Delaware State University, Sussex County Council, Town organizations, and Volunteers.
- The program started in 2003 and currently has 120 sites throughout the three inland bays.
- Website: <http://www.inlandbays.org/oyster-gardening/>

Mitigation

The Wetlands and Subaqueous Lands Section does not currently require mitigation for shellfish impacts. There are currently no programs in place for receiving mitigation credits for shellfish restoration projects in Delaware.

FLORIDA

Shellfish Management At a Glance

The following provides a quick reference to relevant state laws and regulatory programs impacting shellfish management and restoration projects in Florida. Related permitting requirements are addressed in subsequent sections.

A. Coastal Program

- Responsible Agency: Florida Dept. of Environmental Protection
- Relevance: Governs activities impacting wetlands and taking place in coastal waters.
- Components:
 - Beach and Shore Preservation Act
 - The Environmental Resource Permit Program
- Website: <http://www.dep.state.fl.us/cmp/>

B. Submerged Lands

- Responsible Agency: Florida Dept. of Environmental Protection – Division of State Lands
- Relevance: Oversees leasing of state-owned submerged lands in coordination with the environmental resource permitting program.
- Components:
 - Sovereignty Submerged Lands Management, Rule 18-21, F.A.C.
- Website: <http://www.dep.state.fl.us/lands/>

C. Fisheries Management

- Responsible Agency: Florida Fish and Wildlife Conservation Commission – Division of Marine Fisheries Management
- Relevance: Oversees the management and regulation of Florida's marine fisheries resources, including regulation of oysters.
- Website: <http://myfwc.com/about/inside-fwc/mfm/>

D. Shellfish Aquaculture

- Responsible Agency: Florida Department of Agriculture and Consumer Services - Division of Aquaculture
- Relevance: Manages state aquaculture activities.
- Components:
 - Florida Aquaculture Policy Act
- Website: <http://www.freshfromflorida.com/Divisions-Offices/Aquaculture>

E. Shellfish Sanitation

- Responsible Agency: Florida Department of Agriculture and Consumer Services - Division of Aquaculture
- Relevance: Manages recreational and commercial shellfish harvesting for public health purposes in accordance with the National Shellfish Sanitation Program Guidelines.
 - Information about open and closed waters can be found at: www.floridaaquaculture.com.

Submerged Lands Leasing

Shellfish restoration projects may require leasing of state-owned submerged lands. This section discusses the role of state-owned submerged lands, the availability of King or Crown grants, and other aspects of leasing submerged lands for restoration projects.

A. State-Owned Submerged Lands

- State-Owned Submerged Lands: All lands below the mean high-water line, with the area below the mark being held by the state in trust for the benefit of the public and the area above being subject to private ownership.⁴⁴
 - Florida defines sovereignty submerged lands as lands including but not limited to, tidal lands, islands, sand bars, shallow banks, and lands waterward of the ordinary or mean high water line, beneath navigable fresh water, or beneath tidally-influenced waters, to which the State of Florida acquired title on March 3, 1845, by virtue of statehood.⁴⁵
- Public Trust Rights: Recreation, navigation, commerce, fishing, bathing, and other easements allowed by law.⁴⁶ Goals for public trust lands include the maintenance of essentially natural conditions, the propagation of fish and wildlife, and public recreation.⁴⁷ Activities taking place on sovereign submerged lands must not interfere with the public interest.
- Riparian Rights to Shellfish: Riparian owners may plant shellfish in their riparian zone.⁴⁸ Shoreline and nearshore restoration projects may require permission from the affected riparian owners before permits are issued.

B. Leasing Process:

⁴⁴ FLA. STAT. § 177.28(1); FL. Const. Art. 10 § 11.

⁴⁵ FLA. ADMIN. CODE r. 18-21.003(61).

⁴⁶ Broward v. Mabry, 58 Fla. 398, 50 So. 826, 829 (1909).

⁴⁷ FLA. STAT. § 253.034(2)(b).

⁴⁸ *Id.* § 597.010.

- *Generally:* Sovereignty Submerged Lands are leased through the Environmental Resource Permitting Program (discussed below).
 - Projects applying for an ERP will be reviewed for permission to use state submerged lands. No additional permit or leasing process is required.
- *Aquaculture:* The leasing of Sovereignty Submerged Lands for aquaculture activities is handled by the Florida Department of Agriculture and Consumer Services – Division of Aquaculture (DACS)
 - For aquaculture leases, Fl. Stat. 597.003 directs DACS to work with state and local agencies to identify and designate sovereign lands and waters that are suitable for aquaculture development.
 - Although DACS identifies suitable areas, the applicant can identify other areas as well.
 - Areas leased for oyster aquaculture must be 10 acres or less.
 - If the leased area is in an aquatic preserve, research reserve, marine sanctuary, or state park, the activity needs to be compatible with the area’s management plan and other statutory requirements.
 - The leased area must be setback from other activities, channels, or structures to ensure safety and resource management and facilitate enforcement.

C. King or Crown Grants

Private individuals may own submerged lands in limited circumstances through a grant from the Spanish crown (also referred to as a King’s grant or a Spanish land grant).⁴⁹ Activities taking place on those privately owned submerged lands do not require authorization to use submerged lands but must comply with all other regulatory requirements.

D. Conservation Leasing

Florida has established a Water Protection and Sustainability Program that includes the establishment of conservation leases as a method for achieving water quality improvement.⁵⁰

⁴⁹ Spanish Land Grants were first issued in the late 1700’s by the Spanish government, which at the time owned the colony of Florida, as a way to encourage settlement. When Spain transferred the territory to the United States in 1821, it was agreed that any valid land grants were to be honored.

⁵⁰ FLA. STAT. § 403.890.

Permitting Shellfish Restoration

A. Permitting Agencies

- Florida Department of Environmental Protection (FLDEP) (Lead Agency)
 - Bureau of Beaches and Coastal Systems
- USACE

B. Permitting Process

Restoration projects will generally require permitting for use of environmental resources, sovereign submerged lands, and federal dredge and fill. To simplify permitting, the state has combined these needs into one joint permit application under the Environmental Resource Permitting program.⁵¹

The Environmental Resource Permit (ERP) program regulates activities in wetlands and state sovereign submerged lands, such as oyster restoration projects. This program applies to all dredge and fill activities in wetlands and other surface waters, as well as upland construction that generates stormwater runoff.

The Environmental Resource Permit (ERP):

The district offices of FLDEP oversee the ERP permitting process. Through operating agreements with FLDEP, six water management districts also oversee certain aspects of ERP permitting: St. Johns River, Suwannee River, Northwest Florida, South Florida, and Southwest Florida Water Management Districts.

With limited exception, an ERP is required anytime materials are deposited in surface waters or wetlands. Materials refer to “matter of any kind, such as sand, clay, silt, rock, dredged material, construction debris, solid waste, pilings or other structures, ash, and residue from industrial and domestic processes.”⁵² Note: The placement of oyster cultch is exempt from this definition.

The regulations adopt the permitting forms as part of the state rules. FLDEP has created a helpful overview of the ERP and state-owned submerged lands (SSL) permitting programs. Numerous evaluation criteria are considered when evaluating permit applications, including:

- Activities cannot cause adverse impacts to waters, flooding, or wetland functions for fish and wildlife;

⁵¹ Available at: <http://www.dep.state.fl.us/water/wetlands/erp/forms.htm>

⁵² FLA. ADMIN. CODE r. 62-341.021(14).

- Consideration of direct, secondary, and cumulative impacts; and
- Consideration of upland buffers.

In addition, activities must not be contrary to the public interest, and if the activity is located in an Outstanding Florida Water (a water designated worthy of special protection because of its natural attributes), it must be clearly in the public interest.⁵³ FLDEP may impose conditions on development to ensure that state waters are protected.⁵⁴ Special provisions protect waters used for shellfish harvesting. Issuance of an ERP serves as a waiver of a separate stormwater permit (Clean Water Act § 401).

There are three types of permits under the ERP program: general permits, individual permits, and conceptual approval permits (for large projects in which the final product is uncertain or subject to change).⁵⁵

Activities that may qualify for general permits include:

- Restoration, establishment, and enhancement of low profile oyster habitat⁵⁶
- Minor activities (impacting less than 100 square feet of wetlands or surface waters)
- Installation of riprap
- Construction of artificial reefs
- Clam and oyster culture on sovereignty submerged lands aquaculture leases⁵⁷

Shellfish restoration activities that are less than a quarter acre in size may qualify for the oyster habitat restoration general permit. Otherwise, shellfish restoration does not fall clearly within the available general permits.

Restoration projects may also qualify for a de minimus exception for activities that have only a minimal or insignificant individual or cumulative impact on water resources.⁵⁸

- Applies to projects that would otherwise require an ERP.
- Allows any district to exempt qualifying projects on a case-by-case basis.
- To qualify, applicants must request the exemption in writing and no activity may begin until the District issues a written decision.
- This exemption has been used in the FLDEP Central District for restoration activities.

Living shorelines breakwaters made of native vegetation that are less than 500 feet long are exempt from ERP requirements.⁵⁹ An oyster breakwater can be installed if

⁵³ *Id.* r. 62-302.700.

⁵⁴ FLA. STAT. § 373.4143.

⁵⁵ FLA. ADMIN. CODE r. 62-343.060.

⁵⁶ *Id.* r. 62-330.632.

⁵⁷ *Id.* r. 62-341.475, 62-341.431, 62-341.600, 62-341.601.

⁵⁸ FLA. STAT. § 373.406(6).

⁵⁹ FLA. ADMIN. CODE r. 62-346.051(14)(e).

permanent wave attenuation is needed to maintain the health of planted native vegetation. The outer edge of the oyster breakwater shall not extend more than 10 feet waterward of the approximate mean high water line. The project must include 3-foot gaps for every 20 feet of oyster reef. In addition, the reefs must be constructed of predominantly natural oyster shell or fossilized oyster shell, although unconsolidated boulder, rocks, and clean concrete rubble can be associated with the oyster shell. The applicant would still have to submit an application to the USACE.

The shellfish restoration project will require an individual ERP unless the project qualifies for the small-scale oyster restoration general permit or for an exemption.⁶⁰

The Joint Coastal Permit:

If restoration projects are located along Florida's sandy beaches, then a Joint Coastal Permit (JCP) will be required. The JCP combines permitting for coastal construction permits, environmental resource permits, wetland resource (dredge and fill) permits, and sovereign submerged lands authorizations; the JCP is issued by FLDEP's Bureau of Beaches and Coastal Systems.⁶¹

A JCP is required for activities that meet the following four criteria:

- Located along Florida's natural sandy beaches facing the Atlantic, Gulf of Mexico, Straits of Florida, or associated inlets;
- Extends seaward of the mean high water line;
- Extends into sovereign submerged lands; and
- Is likely to affect the distribution of sand along the beach.

USACE Permitting:

The Jacksonville District of the USACE oversees federal dredge and fill permitting in Florida. The ERP application process combines the federal wetlands permitting needs into a joint application. The FLDEP district office will review the permit application first and then forward the application on to the applicable USACE office. Florida allows for use of NWP 27 (aquatic habitat restoration) with conditions. Any restoration work done under NWP 27 requires pre-construction notification in most circumstances. In addition, the Jacksonville District has used NWP 13 for Bank Stabilization to permit shoreline restoration projects in certain circumstances. In most cases, a shellfish restoration project should qualify for either NWP 27. An individual permit will only be needed if the project does not qualify for one of the applicable NWPs.

⁶⁰ FLA. STAT. § 373.406.

⁶¹ Available at: <http://www.dep.state.fl.us/beaches/programs/envpermt.htm> .

C. Shellfish Restoration Permitting Snapshot

- Environmental Resource Permit: Shellfish restoration projects will require an ERP.
 - Oyster Restoration General Permit:
 - Only available for small-scale low profile oyster restoration projects.
 - Living Shoreline Oyster Breakwater Exception: must meet the exception requirements.
 - Still requires a USACE permit.
 - De Minimus Exemption: for activities that have only a minimal or insignificant individual or cumulative impact on water resources.
 - Determined on case-by-case basis.
 - Must be requested in writing.
 - ERP Joint Application:
 - Submit to regional office.
 - Includes:
 - Sovereign submerged lands authorization request;
 - USACE permit for minor activities through the State Programmatic General Permit;
 - Coastal zone consistency; and
 - Water quality.
- Joint Coastal Permit: only needed if activity takes place along sandy beaches and meets the other triggering factors. If required, the joint application incorporates the elements of the ERP.
- USACE Individual Permit: only needed if project does not fall within NWP 27 or NWP 13. Coordinated through the ERP joint application.

D. Research & Conservation Permits

- Conservation Permitting: Florida regulations do not provide for conservation permitting. However, restoration projects may qualify for a de minimus exemption for activities that have only a minimal or insignificant individual or cumulative impact on water resources.⁶²

⁶² FLA. STAT. § 373.406(6).

- Research Permits: The Florida Fish and Wildlife Conservation Commission provides Special Activity Licenses for various activities including research, education, and exhibition. These licenses provide a waiver of marine fisheries regulations.⁶³
 - Persons seeking to utilize this provision can apply for a Scientific Research Special Activity License.
 - “Scientific Research” is defined to include: “restoration activity that facilitates mitigation or recovery of hard bottom marine organisms and includes subsequent monitoring to measure the success of the restoration effort.”
 - “Hard bottom” means any living natural or artificial reef (including coral reefs, oyster reefs, and worm reefs) or varying biological assemblages of marine organisms attached to hard substrate.⁶⁴

E. Restoration in Closed Waters

Shellfish restoration can occur in any classification of waters, including closed waters. The use of oyster shells in bags can be installed in closed waters. However, the Florida Department of Agriculture and Consumer Services Division of Aquaculture is somewhat cautious with this type of project, due to the potential public health risks associated with harvesting oysters in unapproved waters.

Protecting Existing Reefs and Restoration Projects

A. Reef Closure for Non-Public Health Concerns

Florida does not have a voluntary reef closure policy. Reefs may be closed for health concerns or emergency conditions (such as red tides, hurricanes, and tropical storms).

B. Sanctuaries & Other Protected Areas

Florida has a large aquatic preserve system managed by the Department of Environmental Protection – Office of Coastal and Aquatic Managed Areas. Aquatic preserves refer to state-owned submerged lands in areas which have exceptional biological, aesthetic, and scientific value that have been set aside as aquatic preserves or sanctuaries for the benefit of future generations.⁶⁵ Generally speaking, privately owned lands are excluded from designation as aquatic preserves except by specific agreement with the landowner.⁶⁶

⁶³ FLA. ADMIN. CODE r. 68B-8.001.

⁶⁴ For more detail, see: <http://myfwc.com/license/saltwater/special-activities/>

⁶⁵ FLA. STAT. § 258.36.

⁶⁶ *Id.* § 258.40.

Creation of new aquatic preserves requires public notice and comment as well as legislative confirmation.⁶⁷

- Everglades

Florida has several provisions that are Everglades specific. This includes the Everglades Forever Act,⁶⁸ the Comprehensive Everglades Restoration Plan Regulation Act,⁶⁹ and the Northern Everglades and Estuaries Protection Program.⁷⁰ More information is available here: <http://www.dep.state.fl.us/water/wqssp/everglades/permit.htm> .

C. Other Tools for Protecting Shellfish Restoration Projects

The state prohibits the dredging of dead shell deposits. The state has programs for coral reef protection and wetland protection, but no provisions were found related to shellfish reef protections.

Oyster Management Generally

The wild oyster fishery is managed by the Florida Fish and Wildlife Conservation Commission – Division of Marine Fisheries Management. This section does not address oyster aquaculture, which is regulated by Florida DACS - Division of Aquaculture.

A. Oyster Harvesting

This section details the general requirements for oyster harvesting, including licenses, seasons, and other relevant details.

- Season:
 - Commercial: September 31 – June 30, with minor exceptions.⁷¹
 - Recreational: Year round with minor exceptions.⁷²
 - All harvest closed on Friday, Saturday, and Sundays.
- Licenses:
 - Commercial: Commercial saltwater fishing license.
 - Recreational: Saltwater fishing license.
 - Specific license may be required for certain areas such as Apalachicola Bay.
 - Special Activity License: available for research activities.

⁶⁷ *Id.* § 258.41; FLA. ADMIN. CODE r. 18-20.001 et seq.

⁶⁸ FLA. STAT. § 373.4592.

⁶⁹ *Id.* § 373.1502.

⁷⁰ *Id.* § 373.4595.

⁷¹ See: <http://myfwc.com/fishing/saltwater/commercial/oyster/>

⁷² See: <http://myfwc.com/fishing/saltwater/recreational/shellfish/>

- Harvesting Requirements:
 - Commercial: limit of 5 bags of unshelled oysters per person, per day.
 - Recreational: limit of 5 gallons (1/2 bag) of unshelled oysters per person, per day.

B. Public, Private, and Natural Reef Distinctions

The Florida Fish and Wildlife Conservation Commission – Division of Marine Fisheries Management oversees the regulation of public, private, natural, and artificial reefs in Florida waters. Artificial reefs are managed by the Florida Fish and Wildlife Conservation Commission through the Florida Artificial Reef Program.

- It is unlawful to use a dredge or any means or implement other than hand tongs in removing oysters from the natural or artificial state reefs. Oysters may be harvested from natural or public grounds by common hand tongs or by hand, by scuba diving, free diving, leaning from vessels, or wading.⁷³ The state also prohibits the dredging of dead shell deposits.
- The harvest of oysters from submerged lands which have been leased for shellfish culture must comply with all state harvest requirements unless the harvest is exempted from such compliance by specific provisions in valid lease(s) applicable to particular parcels in question.⁷⁴

Existing Shellfish Restoration Efforts

A. Government

- Project GreenShores was constructed using limestone, recycled concrete, wave attenuation devices, and marsh planting to restore more than 15 acres of estuarine habitat composed of seven acres of oyster reef and eight acres of salt marsh/seagrass habitat. This multi-million dollar habitat restoration and creation project is located in Downtown Pensacola along the urban shoreline of Pensacola Bay and was constructed by FLDEP's Ecosystem Restoration Section with the City of Pensacola, Escambia County, the Ecosystem Restoration Support Organization, the EPA Gulf of Mexico Program, the National Fish and Wildlife Foundation, the U.S. Fish and Wildlife Service, NOAA, Gulf Power, local agencies, businesses, and volunteers.
- Since 1994, the Ecosystem Restoration Section (ERS) of the FLDEP Northwest District has been working to restore coastal habitats throughout the Florida panhandle by creating, restoring, and enhancing coastal dune systems, oyster reefs, salt marsh, and

⁷³ FLA. STAT. § 379.2525.

⁷⁴ FLA. ADMIN. CODE r. 68B-27.020.

submerged aquatic vegetation. Funding for these activities is provided almost entirely through competitive grants. The ERS Oyster Restoration program (Offer Your Shell To Enhance Restoration; OYSTER) utilizes recycled oyster shell, donated by partner restaurants/seafood suppliers, to restore/create oyster reefs in the Pensacola Bay System. Recycling oyster shell reduces the input of valuable shell into local landfills and utilizes the resource to restore critical oyster habitat. To date the OYSTER program has recycled 173 tons/6,275 bushels from 28 partner restaurants which have built 11 reefs throughout the Florida panhandle.

- The Northwest Florida Aquatic Preserves and the FLDEP Northwest District has constructed 10 oyster restoration projects from small to large scale over the last 20 years. One project of interest is located in Garcon Point in Santa Rosa County. Approximately 900 oyster reefs were created to restore 22 acres of oyster habitat along 2 miles of shoreline. This project was funded by the National Fish and Wildlife Federation.
- The Northwest Florida Aquatic Preserves and the FLDEP Northwest District has constructed over 50 living shorelines projects using constructed offshore oyster reefs to reduce erosion while enhancing ecosystems through promoting oyster recruitment on the reefs. These projects are located in Pensacola Bay, Choctawhatchee Bay, Perdido Key, and Panama City.

B. Non-government

- The Oyster Reef Restoration project in Martin and Palm Beach Counties, Florida planted 30 million pounds of cultch material. The cultch material was composed of fossilized oyster shell, coral, and other similar material. The project was located in the St. Lucie Estuary and the Northwest Fork of the Loxahatchee River. The project was funded by NOAA through the American Recovery and Reinvestment Act of 2009. The main goal of the project was to improve water quality in the St. Lucie Estuary.
- The Nature Conservancy has restored 42 oyster reefs since 2005 from grants funded by TNC, NOAA Community Based Restoration Program, NERRs, the State of Florida, and private individuals.
- The Tampa Bay Watch Community Oyster Reef Enhancement Program (CORE) creates oyster bars on spoil banks and on natural shorelines located within Tampa Bay. They typically create the oyster reefs from fossilized oyster shell.
- The University of South Florida created a 600-foot oyster reef in 2005 using fossilized shell, oyster shell, and limestone boulders.

- The MacDill Airforce Base has installed a half-mile oyster reef using oyster domes and oyster shell bags.
- Other oyster restoration projects and programs include the Sarasota Bay Estuary Program, U.S. Coast Guard, Florida Oceanographic Society, New Smyrna Beach Marine Discovery Center, St. Johns River Water Management District, Edgewater Landing Homeowners Association on Indian River, and many others.

Mitigation

Florida includes the common provisions for mitigating wetland impacts related to projects but does not include any reference to the use of shellfish restoration as a mitigation factor. Florida has developed TMDLs for many of its water bodies and has a statewide mercury TMDL. However, the TMDLs do not provide for use of shellfish as a mitigation factor to water quality standards. Florida has established a Water Protection and Sustainability Program that includes the establishment of conservation leases as a method for achieving water quality improvement.⁷⁵ This may be a mechanism to incorporate shellfish restoration work into mitigation programs.

⁷⁵ FLA. STAT. § 403.890.

GEORGIA

Shellfish Management At a Glance

The following provides a brief reference to regulatory permitting programs applicable to shellfish restoration in Georgia. Related permitting requirements are addressed in subsequent sections.

A. Coastal Program

- Responsible Agency: Georgia Department of Natural Resources – Coastal Resources Division (GADNR-CRD)
- Relevance: Manages coastal resources, handles federal consistency reviews, and regulates activities and structures that will impact jurisdictional marsh, beach and shore areas, and tidal water bodies.
- Components:
 - Coastal Marshland Protection Act (GA CODE ANN. § 12-5-280 *et seq.*)
- Website: <http://www.coastalgadnr.org/cm>

B. Submerged Lands

- Responsible Agency: Georgia Department of Natural Resources – Coastal Resources Division (GADNR-CRD)
- Relevance: Issues public trust tidelands leases for marinas and revocable licenses for all other activities involving use of state-owned tidelands.
- Website: <http://coastalgadnr.org/msp/ap/mlp>

C. Fisheries Management

- Responsible Agency: Georgia Department of Natural Resources – Coastal Resources Division (GADNR-CRD)
- Relevance: Oversees management of the commercial and recreational fisheries in Georgia, including shellfish and oysters.
- Website: <http://www.coastalgadnr.org/fb>

D. Shellfish Aquaculture

- Responsible Agency: Georgia Department of Natural Resources – Coastal Resources Division
- Relevance: Issues leases of state shellfish beds for exclusive harvest of shellfish.
- Website: <http://coastalgadnr.org/fb/shell/csh>

E. Shellfish Sanitation

- Responsible Agency: Georgia Department of Natural Resources – Coastal Resources Division (GADNR-CRD)
- Relevance: Through this program GADNR- CRD performs water quality monitoring, permits shellfish harvests, does sanitary surveys, and prepares reports.
- Websites: <http://www.coastalgadnr.org/fb/shell/> and <http://www.coastalgadnr.org/ha/wq/sf>

Submerged Lands Permitting

Shellfish restoration projects may require leasing of state-owned submerged lands. This section discusses the role of state-owned submerged lands, availability of King or Crown grants, and other aspects of leasing submerged lands for restoration projects.

A. State Owned Submerged Lands

- In Georgia, the submerged lands underlying navigable tidal waters below the ordinary high water mark and the foreshore (the strip of land between the high and low water marks) is owned by the state and held in trust for the public.
- Public trust rights: Includes fishing, passage, navigation, commerce, and transportation. Coastal activities must be in the public interest to be permitted. Particular public interest concerns identified in permitting include impacts to erosion, conservation of wildlife, water quality, and navigation.
- Riparian Rights: Riparian owners along tidewaters hold the exclusive right to harvest oysters and clams in adjacent waters.

B. Leasing Process

- *Generally:* Georgia does not have general provisions for the leasing of water bottoms related to shellfish restoration. The state authorizes the use of state-owned tidelands through a “Revocable License Request” that is submitted as part of the joint DNR/USACE wetlands permit application (discussed below).
- *Leasing of State Shellfish Beds:* The Department of Natural Resources is authorized to issue leases for state shellfish beds. Any person interested in leasing state shellfish beds for the exclusive right to harvest those shellfish must submit an application to the DNR.

- If DNR determines the area is suitable for leasing and such lease would be in the best interest of the state, the DNR may offer the lease through a public competitive bidding process.⁷⁶

C. King or Crown Grants

Georgia presumptively holds title to the beds of all tidelands within its boundaries, but in limited circumstances marshlands may be privately held through a state or crown grant. Although owned privately, activities occurring in those wetlands are still subject to federal and state environmental regulations.

D. Conservation Leasing

Georgia does not have regulations specifically addressing conservation leasing of water bottoms.

Permitting Shellfish Restoration

A. Regulating Agencies

- Georgia Department of Natural Resources – Coastal Resources Division (GADNR-CRD) (Lead Agency)
- USACE

B. Permitting Process

Shellfish restoration projects will generally be required to obtain federal and state environmental permits and other authorizations from the State. To simplify permitting, Georgia has combined these needs into one joint permit application under the Coastal Marsh Protection Permitting program.⁷⁷

The Coastal Marshlands Protection Act (CMPA) permit program regulates structures and activities that will impact jurisdictional marsh and tidal water bodies. Structures covered under the CMPA include, but are not limited to, marinas, community docks, bridges, dredging, bank stabilizations longer than 500', modification to any such structure, and any construction or activity not exempted from the CMPA.

⁷⁶ GA. CODE. ANN. §27-4-198(b).

⁷⁷ Available at: <http://coastalgadnr.org/sites/uploads/crd/pdf/permitapps2011/CMPAApp.pdf>.

Coastal Marshland Protection Act (CMPA) Permit:

- “No person may remove, fill, dredge, drain, or otherwise alter any marshlands or construct or locate any structure on or over marshlands” within the estuarine area of the state without first obtaining a permit from the GADNR-CRD.⁷⁸
- Applicants must submit one copy of the Joint Application for USACE Permit and GA CMPA permit to the GADNR-CRD, Habitat Management Program, USACE Savannah District, and GADNR-EPD, Water Protection Branch (Water Quality Certification).
 - Projects proposing impacts below the high water mark in coastal counties must include a signed State of Georgia Revocable License Request to obtain permission to use publicly owned submerged lands.
- Permit applications are reviewed by the Coastal Marshland Protection Committee, which must consider the public interest, among other considerations. The public interest considerations are as follows:
 - “Whether or not unreasonably harmful obstruction to or alteration of the natural flow of navigational water within the affected area will arise as a result of the proposal;
 - Whether or not unreasonably harmful or increased erosion, shoaling of channels, or stagnant areas of water will be created; and
 - Whether or not the granting of a permit and the completion of the applicant’s proposal will unreasonably interfere with the conservation of fish, shrimp, oysters, crabs, clams, or other marine life, wildlife, or other resources, including but not limited to water and oxygen supply.”⁷⁹

USACE Permitting:

The Savannah District of the USACE regulates structures and activities within the waters of the U.S. in Georgia under the authority of the Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act. Georgia has provided Federal Consistency use of NWP 27 (aquatic habitat restoration) with conditions. Any restoration work done under NWP 27 requires pre-construction notification (PCN) in most circumstances. In most cases, a shellfish restoration project should qualify for NWP 27. Georgia’s conditions require that DNR be notified prior to an applicant beginning work on any and all NWP authorized projects. An individual permit will only be needed if the project does not qualify for one of the applicable NWPs.

⁷⁸ GA. CODE ANN. § 12-5-286.

⁷⁹ *Id.* § 12-5-286(g).

C. Shellfish Restoration Permitting Snapshot

- Joint Application: Shellfish restoration projects will require the submission of a Joint Application.
 - Submit to GADNR-CRD, GADNR-EPD, and USACE – Savannah District.
Includes:
 - CMPA Permit Application (GADNR-CRD)
 - CWA § 404 Permit Application or PCN if required (NWP 27 projects) (USACE)
 - Revocable Licenses Request, if applicable (GADNR-CRD)
 - Coastal Zone Consistency (GADNR-CRD) – currently not needed for NWP 27 projects.
 - Water Quality Certification Request (GADNR-EPD- delegated from EPA) – currently not needed for NWP 27 projects.
- USACE Permitting:
 - Separate USACE Permitting is only required if not submitting a joint CMPA Permit Application.
 - NWP 27: Submission of PCN to USACE. A copy of the PCN with project plans must also be submitted to the GADNR-EPD and, where applicable, to GADNR-CRD. USACE will issue letter of verification if applicant is in compliance with NWP.
 - Individual Permit: only needed if project does not fall within NWP 27.

D. Research & Conservation Permitting

No provisions found.

E. Restoration in Closed Waters

Shellfish restoration is permitted in closed waters.

Protecting Existing Reefs and Restoration Projects

A. Reef Closure for Non-Public Health Concerns

GADNR is authorized to open or close any portion of state waters for the purposes of taking shellfish anytime during the year if the agency determines that such action is in accordance with current, sound principles of wildlife research and management.⁸⁰

⁸⁰ *Id.* § 27-4-195.

B. Sanctuaries & Other Protected Areas

- The Wildlife Resources Division of the GADNR manages the Sapelo Island National Estuarine Research Reserve. The reserve encompasses 6,100 acres along the western perimeter of Sapelo Island.
 - Website: <http://www.sapelonerr.org/about-us/>

C. Other Tools for Protecting Shellfish Restoration Projects

GADNR is authorized to issue permission to Master Collectors without entering into a shellfish bed lease to remove shellfish from areas where they might be destroyed by dredging, developing, or other destructive activities.⁸¹ GADNR is also authorized to issue permission to Master Collectors to remove shellfish from unapproved growing areas without entering into a lease as described above. Although these provisions do not specifically mention shellfish restoration, this authority might be a mechanism by which to authorize some restoration activities.

Oyster Management Generally

The wild oyster fishery is managed by the GADNR - CRD. This section does not address oyster aquaculture, which is also regulated by the GADNR - CRD.

A. Oyster Harvesting

This section details the general requirements for oyster harvesting, including licenses, seasons, and other relevant details.

- Season:
 - Season can be open from Jan. 1 to Dec. 31 at the discretion of the Commissioner.
 - Recreational harvest is only allowed in designated public harvest areas.
- Licenses:
 - Commercial: Master Collecting Permits are required to take or possess shellfish in commercial quantities or for commercial purposes.⁸² A Master Collector may request, by application, that GADNR-CRD grant a “pickers permit” to authorize an individual working for the Master Collector to harvest shellfish on specified leased shellfish areas.
 - Recreational: A Georgia Fishing License is required to harvest shellfish.
- Harvesting Requirements:

⁸¹ *Id.* § 27-4-198.

⁸² *Id.* § 27-4-190.

- Shellfish can only be harvested from ½ hour before official sunrise and ½ hour after official sunset.
- Minimum Size: 2” (Commercial); 3” (Recreational)
- Harvest Limits:
 - Commercial: None
 - Recreational: 2 bushels per person with up to 6 bushels per boat per day.
- Methods Allowed:
 - Commercial harvesting of shellfish is limited to the following methods: hand or handheld methods. GADNR may authorize the use of the following equipment if certain conditions are met: rock dredges, escalator dredges, hydraulic dredges, mechanical tongs, patent tongs, and any power drawn or driven device.
 - Recreational harvest is limited to the following methods: hand or hand-held implement.
- Replanting/Reseeding Requirements:
 - Master Collectors gathering oysters from beds other than those leased from the state must do one of the following each year:
 - Distribute upon GADNR-designated areas at least 33 1/3% by volume of oyster shells taken by permittee during the harvest season;
 - Transplant at least such amount by volume of oysters from unapproved growing areas in accordance with the GADNR requirements; or;
 - Distribute or transplant at least such amount by volume of culch material.⁸³
 - Master Collectors taking oysters from beds leased from the state must return to the beds the shells taken from such beds in such amounts as are specified in the lease agreement.⁸⁴

B. Public, Private, and Natural Reef Distinctions

GADNR oversees regulation of public shellfish beds and shellfish beds leased from the state. GADNR also oversees Georgia’s artificial reef program. Living shorelines are permitted through the GADNR, as well as the USACE.

⁸³ *Id.* § 27-4-196(b).

⁸⁴ *Id.* § 27-4-196(c).

Existing Shellfish Restoration Efforts

A. Government

GADNR-CRD's Habitat Work Group is addressing shellfish restoration efforts in multiple programs: through shellfish enhancements, oyster reef restoration, and through living shoreline projects.

- Shellfish enhancement projects are constructed in approved harvest areas for the purposes of maintaining and improving harvest opportunities and improving water quality. Materials used include both oyster shell and other proven cultch materials that have been approved by the DNR.
- Oyster reef restoration projects are constructed in closed waters for the primary purpose of increasing fish habitat. Materials used also include oyster shell and proven cultch materials that have been approved by DNR.

GADNR has completed over 10 oyster restoration projects since 2008.

- It recently partnered with Coastal Conservation Association-GA (CCAGA) to complete an oyster restoration project on Oatland Island, Richardson Creek in Savannah adjacent to the Oatland Island Wildlife Center nature trail.
- The project was funded by state fishing license fees, Federal Aid in Sport Fish Restoration and the Georgia Natural Resources Foundation. Material donations were provided by CCAGA.
- GADNR manages 8 oyster shell recycling centers in partnership with the CCAGA and the University of Georgia's Marine Extension Program. Recycled shells are cured, bagged, and then planted along intertidal waters to restore oyster reefs.
- Website: <http://www.coastalgadnr.org/node/100410>

B. Non-government and Private

- The Generating Enhanced Oyster Reefs in Georgia's Inshore Areas (GEORGIA) program is a community based oyster restoration project run by University of Georgia's Marine Extension Program. The program recycles oyster shells from restaurants, operates 2 recycling centers at Tybee Island and the Skidaway Institute of Oceanography, and participates in oyster reef creation and monitoring.
 - Since 2003, the GEORGIA program has used bagged recycled oyster shell to restore approximately 1 acre of oyster habitat coast-wide.
 - Currently, all of the GEORGIA oyster reefs have been installed in closed water sites.
 - Website: <http://marex.uga.edu/georgia/>

Mitigation

There are currently no programs in place for receiving mitigation credits for shellfish restoration in Georgia.

LOUISIANA

Shellfish Management At a Glance

The following provides a quick reference to relevant state laws and regulatory programs impacting shellfish management and restoration projects in Louisiana. Related permitting requirements are addressed in subsequent sections.

A. Coastal Program

- Responsible Agency: Louisiana Dept. of Natural Resources – Office of Coastal Management
- Relevance: Regulates coastal wetlands and uses in the state’s coastal zone.
 - Component:
 - State and Local Coastal Resources Management Act, La. R.S. 49:214.21 et seq.
 - Caveat: MOU with Louisiana Dept. of Wildlife & Fisheries regarding oyster leasing establishes that OCM defers to DWF for that coastal use.
 - [Restoration Efforts: Separate from the coastal program regulation, Louisiana also has the](#) Coastal Restoration and Protection Authority, created in 2005.
 - <http://coastal.la.gov/about/structure/>
- Website: <http://dnr.louisiana.gov/>

B. Submerged Lands

- Responsible Agency: Louisiana Division of Administration – State Land Office
- Relevance: Leasing of state-owned submerged lands
 - OCM will not issue a Coastal Use Permit that involves encroachment on state water bottoms without permission from SLO.
- Website: <http://doa.louisiana.gov/slo/>

C. Fisheries Management

- Responsible Agency: Louisiana Dept. of Wildlife and Fisheries
- Relevance: Governs oyster leasing on state owned water bottoms, shellfish harvesting, and oversees compliance with the Interstate Shellfish Sanitation Conference’s National Shellfish Sanitation Program
- Website: <http://www.wlf.louisiana.gov/>

D. Shellfish Aquaculture

- Responsible Agency: Louisiana Department of Wildlife and Fisheries
- Relevance: Regulates alternative oyster culture
- Website: <http://www.wlf.louisiana.gov/>

E. Shellfish Sanitation

- Responsible Agency: Louisiana Dept. of Wildlife and Fisheries and the Louisiana Dept. of Health and Hospitals
- Relevance: Oversees compliance with the Interstate Shellfish Sanitation Conference's National Shellfish Sanitation Program
- Website: <http://www.wlf.louisiana.gov/>;
<http://www.dhh.state.la.us/index.cfm/page/629/n/210>

Submerged Lands Leasing

Shellfish restoration projects may require leasing of state-owned submerged lands. This section discusses the role of state-owned submerged lands, the availability of King or Crown grants, and other aspects of leasing submerged lands for restoration projects.

A. State-Owned Submerged Lands

- Louisiana refers to its submerged lands below natural navigable water bodies as navigable water bottoms and the sea.
 - For sea and arms of sea, state owned property is seaward of the highest winter tide.
 - For navigable rivers and streams, of which there are many in the coastal area, the state owns the beds below the Ordinary Low Water mark.
 - For Navigable lakes the boundary is the Ordinary High Water mark.⁸⁵
- Public Trust Rights: Include public navigation, fishery, recreation, and other interests.⁸⁶

B. Leasing Process

Louisiana leases water bottoms for oyster cultivation, bedding, harvesting and related matters distinctly and separately from general water bottom leasing.

- *Generally:* The Lands and Water Bottoms section of the State Lands Office (SLO) issues leases for the encroachments upon public lands, including beds and bottoms of all navigable waters.⁸⁷
 - SLO may not grant leases without approval from the governing authority of the parish in which the encroachment is located, the attorney general, and

⁸⁵ It is an important distinction because it is often difficult to classify water bodies in the coastal zone. (Per reviewer).

⁸⁶ LA. REV. STAT. § 41:1701.

⁸⁷ *Id.* § 41:1701.

such other parochial or state agencies, as may have jurisdiction in the premises.⁸⁸

- Louisiana issues five types of water bottom lease permits: Class A, B, C, D and E.
 - None of the five water bottom lease types are particularly on point to restoration activities. If a water bottom lease is required, the closest fit is either Class B permits for construction of bulkheads or flood protection structures in proximity to the bank or shore or Class D for permits to construct structures other than wharves or piers.
 - Application and forms available:
<http://www.doa.louisiana.gov/SLO/sloforms.htm>
- *Oyster Leasing*: The Louisiana Department of Fish and Wildlife (LDFW) oversees oyster leasing.⁸⁹
 - Traditional oyster leases last for fifteen years and the owners have the first right of renewal of their leases, as long as the lease is capable of supporting oysters. If renewed, the renewal will be for another fifteen-year period.⁹⁰
 - A lessee has the exclusive use of the water bottoms leased and all oysters and cultch grown or placed thereon. However, this exclusive right is subordinate to the rights and responsibilities of the state, any political subdivision of the state, the United States, or any agency or agent thereof, to take action in furtherance of coastal protection, conservation, or restoration.⁹¹ They are also subservient to preexisting oil and gas leases.
- *Leasing for Restoration*: Louisiana does not have a specific mechanism for leasing water bottoms for shellfish restoration activities.
 - Louisiana exempts: (1) shore or bank stabilization works and (2) regulation of oyster beds, fish, and other wildlife, or collection of payment for fill materials exercised by the LDWF.⁹²

⁸⁸ *Id.* § 41:1711

⁸⁹ *Id.* § 41:1225

⁹⁰ *Id.* § 56:428. Along with the right of first refusal, the leases are heritable and transferable. In addition, there may be provisions for shorter lease terms when the activity conflicts with coastal restoration activities.

⁹¹ *Id.* § 56:42

⁹² *Id.* § 41:1705.

- The LDWF requires that impacts to the water bottoms of the Public Oyster Areas associated with construction activities be compensated. Compensation may be in the form of replacing impacted habitat using oyster cultch material (limestone, crushed concrete, oyster shell, etc.) or by making a payment directly to the Public Oyster Seed Ground Development Account.
- This suggests that shellfish restoration projects would be exempt from water bottom leasing requirements, particularly if compensation was paid to LDWF for impacts.

C. King or Crown Grants

Prior to statehood, public lands may have been conveyed to private individuals through Spanish, British, or French land grants. Historical land title records are maintained by the SLO, which includes a searchable database. In addition, the Swamplands Grants Acts of 1849 and 1850 are another potential source of private ownership of public water bottoms. However, the civil law upon which the state was founded did not recognize ownership of such water bottoms though accidental conveyances may have occurred.

<http://doa.louisiana.gov/slo/records.htm>

D. Conservation Leasing

Louisiana does not have provisions specifically for conservation leasing. However, provisions governing water bottom reclamation activities may apply to restoration in limited circumstances, as discussed here.

- Water Bottom Reclamation: Owners of land abutting coastal waters may apply to Louisiana Department of Natural Resources (LDNR) to reclaim land lost through erosion, compaction, subsidence, or sea level rise.⁹³
- LDNR is also authorized to permit reclamation by abutting land owners where the reclamation will further the implementation of coastal conservation, restoration, and protection plans in accordance with the state master plan.⁹⁴ Limited applicability to shellfish restoration unless undertaken by adjacent property owner as a reclamation activity.

⁹³ *Id.* § 41:1702.

⁹⁴ *Id.*

Permitting Shellfish Restoration

A. Permitting Agencies

- Department of Natural Resources – Office of Coastal Management (LDNR-OCM) (Lead Agency)
- USACE

B. Permitting Process

LDNR-OCM is the lead state agency in permitting activities in the coastal zone and also coordinates permitting with the USACE.⁹⁵ The Louisiana State and Local Coastal Resources Management Act (SLCRMA) of 1978 is Louisiana’s approved Coastal Zone Management Act (CZMA) program that sets criteria and establishes guidelines for protecting, developing, and restoring the natural resources of the delineated coastal zone.⁹⁶ A Coastal Use Permit is required for certain activities in the coastal zone, including, but not limited to: dredging or discharges of dredged or fill material; levee siting, construction, operation, and maintenance; hurricane and flood protection facilities; urban developments; energy and mining activities; shoreline modification; recreational and industrial development, and any activity that requires authorization or approval from the USACE.⁹⁷

Coastal Use Permit:

Restoration activities will require a state Coastal Use Permit through LDNR-OCM. Although there are a variety of general permits for activities under the Coastal Use Permit program, none of these general permits are specific to shellfish restoration activities. Therefore, restoration activities will have to go through the full permitting process unless the project meets an exemption.

To aid the permitting process, Louisiana has developed a Coastal User’s Guide explaining coastal use regulations in the state. The guide was recently updated in 2014 and is available on the agency’s website along with the joint permit application. In addition, any person uncertain as to whether or not a particular activity requires a permit may submit a written request to the agency for a formal determination. The request must set out reasons why the activity: is exempt from coastal use permitting; does not have a direct and significant impact on coastal waters; or is outside the coastal zone boundary.⁹⁸

⁹⁵ Though using a joint application, the two agencies process their respective permits independently.

⁹⁶ LA. REV. STAT. § 49:214.21 et seq.

⁹⁷ LA. ADMIN CODE. tit. 43, pt. I, § 723.

⁹⁸ *Id.* tit. 43, pt. I, § 723 (G)(1).

- Coastal Use Permit Exemption: Available for activities which do not have a direct and significant impact on coastal waters.⁹⁹
 - The preservation of scenic, historic, and scientific areas and wildlife preserves generally do not require a permit.

Louisiana allows coastal zone parishes that have developed approved local coastal management plans to regulate “uses of local concern” within their boundaries. These uses must directly and significantly affect coastal waters and be in need of coastal management, but are not uses of state concern. Jurisdictions with an approved Local Coastal Program may review permit applications and applicants in those parishes should submit their application to the local authorities who will review and forward to LDNR-OCM.¹⁰⁰ Ten coastal parishes currently have these plans.

USACE permitting:

Louisiana allows use of NWP 27 for aquatic habitat restoration unless the activity would convert tidal wetlands to another aquatic habitat type. Use of NWP 27 in areas of concentrated shellfish populations is limited but is allowed for habitat restoration. To apply for use of NWP 27, the applicant must submit the application to LDNR-OCM, as discussed above. LDNR-OCM will process the state requirements and submit the request to USACE. If the project will convert tidal wetland habitat, the project will require an individual permit from the USACE.

C. Shellfish Restoration Permitting Snapshot

- Coastal Use Permit Exemption:
 - If activity will not have a direct or significant impact on coastal waters.
 - If project does not qualify for exemption, then Coastal Use Permit will be required.
- Coastal Use Permit Joint Application
 - Submitted to LDNR-OCM
 - Includes review and coordination with the USACE.
 - Restoration project may qualify for NWP 27 from the USACE unless the project will convert tidal wetland habitat to another aquatic habitat type.
- May require submerged land lease from SLO.

D. Research & Conservation Permitting

⁹⁹ *Id.* tit. 43, pt. I, § 723.

¹⁰⁰ LA. REV. STAT. § 49:214.30.

No specific permitting options are available for research or conservation activities. However, conservation projects may qualify for a coastal use permit exemption if it will not have a direct or significant impact on coastal waters, as discussed above.

E. Restoration in Closed Waters

No prohibitions on shellfish restoration in closed waters were found.

Protecting Existing Reefs and Restoration Projects

A. Reef Closure for Non-Public Health Concerns

Mechanisms for closure other than public health were not found, with the exception of public oyster grounds discussed below.

B. Sanctuaries & Other Protected Areas

- Marsh Island Wildlife Refuge and Game Preserve: No public use allowed, includes a 1-mile buffer.
- Oyster Seed Grounds:
 - The LDFW may designate areas of state water bottoms for the planting, propagation, growth, and policing of seed oysters. These areas of oyster seed grounds may be excluded for oyster leasing. The grounds are maintained for the benefit of the oyster industry. Permits are required for the taking of oysters, seeds, or cultch from these areas.¹⁰¹
 - Maps available at: <http://www.wlf.louisiana.gov/fishing/oyster-maps>

C. Other Tools for Protecting Shellfish Restoration Projects

- Limitation of Traditional Oyster Leases in Coastal Protection Acquisition Areas:
 - Traditional oyster leases may not be granted for any water bottom for which any lease was previously acquired by the state for integrated coastal protection, unless the executive director of the Coastal Protection and Restoration Authority approves such lease.¹⁰²

¹⁰¹ *Id.* § 56:434.

¹⁰² *Id.* § 56:425.

- The Louisiana Coastal Protection and Restoration Authority can acquire in whole or in part any oyster lease for dredging, direct placement of dredged or other materials, or other work or activities necessary for the construction or maintenance of a project for coastal protection. The leaseholder may seek compensation from the Coastal Protection and Restoration Authority pursuant to La. R.S. 56:432.1.
- Local parishes may adopt Local Coastal Management Programs under the State and Local Coastal Management Resources Act. These programs may provide an opportunity to include shellfish restoration activities. Ten coastal parishes currently have these plans.

Oyster Management Generally

The wild oyster fishery is managed by the Louisiana Department of Wildlife and Fisheries. This section does not address oyster aquaculture, which is also regulated by the Louisiana Department of Wildlife and Fisheries.

A. Oyster Harvesting

- Season
 - Set by the Louisiana Wildlife & Fisheries Commission, varies by region. The oyster harvest season for state public oyster beds (seed grounds and reservations) generally runs from the first Wednesday following Labor Day in September through April 30 of the following year; however, there are often exceptions to this for certain seed grounds.
 - Available: <http://www.wlf.louisiana.gov/oyster-seasons>
- License:
 - Any person harvesting oysters in Louisiana must possess a valid oyster harvesting license, except a Louisiana resident sixteen years old or younger and the spouse of a vessel's owner while on that vessel.¹⁰³
 - The captain of a vessel that is harvesting or possessing oysters in state waters must purchase an oyster harvesting license. This license requirement applies only to commercial fishermen and recreational fishermen who take more than two sacks of oysters a day.¹⁰⁴
- Harvesting Methods:
 - Oysters may be taken from public grounds by dredges, scrapers and tongs. Dredges and scrapers shall be no longer than six feet in width measured along the tooth bar. The dredge teeth shall be no longer than five inches and there shall be no more than seven dredges in use on any one vessel. Dredges

¹⁰³ *Id.* § 56:424.

¹⁰⁴ *Id.* § 56:303.6.

shall not be used in such a manner as to remove excessive non-living reef material with seed oyster loads or as to cause physical destruction to the natural reefs.

- Reseeding and replanting requirements: No requirements found.

B. Public, Private, and Natural Reef Distinctions

Louisiana distinguishes regulation of traditional oyster reefs from alternative oyster aquaculture.

- Traditional Oyster Leases: A traditional oyster lessee has the exclusive use of the water bottoms leased and all oysters and cultch grown or placed thereon. However, this exclusive right is subordinate to the rights and responsibilities of the state, any political subdivision of the state, the United States, or any agency or agent thereof, to take action in furtherance of coastal protection, conservation, or restoration.¹⁰⁵

In addition, Louisiana distinguishes between activities on public oyster areas and oyster lease areas when issuing Coastal Use Permits.

- Public Oyster Areas: Public Oyster Areas include public oyster seed grounds, public oyster seed reservations, and public oyster tonging areas (Sabine Lake). Before a Coastal Use Permit will be issued for activities affecting currently productive public oyster areas, the applicant must provide a water bottom assessment to LDWF and LDWF must approve the assessment. Compensation for water bottom impacts will be assessed by LDWF and will be paid by the permit holder.
- Oyster Lease Areas: Before a Coastal Use Permit will be issued for activities affecting an oyster lease, the applicant must provide notice to the oyster lessee and an oyster assessment to LDWF.

The state also makes harvesting distinctions between public and private oyster grounds.

- When removing oysters from natural reefs, oysters measuring less than three inches and any dead shell must be immediately returned back to the natural reefs from which they were taken. This does not apply if you are lawfully removing seed oysters from natural reefs or if you are a lessee of private bedding grounds harvesting your own oysters.

The state has an Artificial Reef Program that has been used to create oyster reefs. The program is managed by the LDWF and uses obsolete oil and gas structures as materials. The reef program has also developed 30 inshore reefs in Louisiana's state waters, primarily

¹⁰⁵ *Id.* § 56:423.

low profile reefs composed of shell or limestone. Seven inshore reefs were constructed by LDWF and twenty-three others were constructed in partnership with public conservation, private groups and other governmental entities.¹⁰⁶

Existing Shellfish Restoration Efforts

A. Government

- Private Oyster Lease Rehabilitation: A program that provides reimbursement assistance to participating oyster leaseholders who perform documented oyster rehabilitation activities on their oyster leases. The project period lasted from May 2007 to June 2009. More details of the program are available here: <http://www.wlf.louisiana.gov/private-oyster-lease-rehabilitation>
- The Louisiana Department of Wildlife and Fisheries has been planting cultch material consisting of limestone, shell material, and crushed concrete to enhance commercial oyster production for many years. Typical restoration and enhancement projects deploy 30,000 to 40,000 yd³ of cultch material to a 200 acres site. There have been 6 sites of this magnitude constructed over the last 3 years using early National Resource Damage Assessment Funding. The number of restoration and enhancement projects are funding dependent.
- The Louisiana Coastal Protection and Restoration authority has constructed 2 pilot projects using alternative engineering designs “living shorelines” to protect fringe marshes while creating habitat for shellfish and oysters as a secondary goal. These type of projects should receive funding through this department in the near future using Restore Act Funding to help protect eroding shorelines. Living shorelines is a new concept compared to traditional marsh creation projects using dredge material and water diversions.
- Lake Sabine’s water quality has improved over the last decade and monitoring has shown that the 1,600 oyster acre reef is suitable for commercial harvest. The Louisiana Coastal Protection and Restoration has requested that the reef remains closed in order to buffer the shoreline from erosion.¹⁰⁷

B. Non-government and Private

¹⁰⁶ See: <http://www.wlf.louisiana.gov/fishing/artificial-reef-program>

¹⁰⁷ Per unofficial interview. This site would not be considered a sanctuary due to it is not actually connected to the greater coastal system.

There has been a number of living shoreline projects installed in Louisiana since 2010 that include oyster reef and/or habitat components.

- From 2010 to 2012 3,050 feet of oyster reefs were created by the Nature Conservancy. The oyster reefs were built using stackable concreted rings built by Wayfarer Environmental Technology.
- In 2012, two breakwaters were constructed using pre-cast Oyster Break Armor Units in the Rockefeller Wildlife Refuge located in Cameron Parish to protect 1000 feet of shoreline from erosion and to accumulate oyster biomass to create an oyster reef.
- In 2013, 1,250 feet of Oyster Break Armor Units were used and 1,200 feet of Wave Attenuation Devices were used to protect the Cheniere au Tigre Center's shoreline from erosion as the primary project goal of the project with oyster recruitment as the secondary goal.
- In May 2014 bioengineered oyster reefs were constructed to protect 1,350 linear feet of Lake Athanasio's Shoreline from erosion.
- In July 2014, 2,200 feet of shoreline was protected from long-term erosion while creating oyster habitat by creating oyster reefs using bioengineered structures to protect the Buras Marina Shoreline in Plaquemines Parish.
- In October 2014, 3,500 feet of shoreline was protected using living shoreline techniques to protect the Tiger Point Shoreline in Vermillion Parish from erosion while creating an offshore oyster reef.

Mitigation

Louisiana's state mitigation program makes no specific reference to the use of oyster restoration as a mitigation option for offsetting ecological values. However, LDNCR-OCM will consider recommendations of state and federal agencies and parishes with approved local programs when selecting compensatory mitigation. Advocates of oyster restoration as mitigation may consider working with these agencies and parishes to develop recommendations for inclusion of oyster restoration in the development of mitigation options.

Louisiana does require mitigation to impacts to public oyster grounds. LDWF requires that impacts to the water bottoms of the Public Oyster Areas associated with construction activities be compensated. Compensation may be in the form of replacing impacted habitat using oyster cultch material (limestone, crushed concrete, oyster shell, etc.) or by making a payment directly to the Public Oyster Seed Ground Development Account.

MAINE

Shellfish Management at a Glance

The following provides a brief reference to regulatory permitting programs applicable to shellfish restoration in Maine. Related permitting requirements are addressed in subsequent sections.

A. Coastal Program

- Responsible Agencies: Maine's coastal program is run by the Maine Department of Agriculture, Conservation and Forestry, with the following partners:
 - Maine Department of Marine Resources
 - Maine Department of Environmental Protection
 - Maine Geological Survey
 - Office of Attorney General
- Relevance: Manages coastal resources and handles federal consistency reviews.
- Website: <http://www.maine.gov/dacf/mcp/about/index.htm>

B. Submerged Lands

- Responsible Agency: Maine Department of Agriculture, Conservation and Forestry, Bureau of Parks and Land
- Relevance: Administers submerged lands leasing program which provides limited use leases and easements for structures located on publicly owned submerged lands.
- Website: http://www.maine.gov/dacf/parks/about/submerged_lands.shtml

C. Fisheries Management

- Responsible Agency: Maine Department of Marine Resources
- Relevance: Manages commercial and recreational marine fisheries.
- Website: <http://www.maine.gov/dmr/index.htm>

D. Shellfish Aquaculture

- Responsible Agency: Maine Department of Marine Resources
- Relevance: Oversees the permitting of aquaculture operations.
- Website: <http://www.maine.gov/dmr/aquaculture/index.htm>.

E. Shellfish Sanitation

- Responsible Agency: Maine Department of Marine Resources, Bureau of Public Health
- Relevance: Manages recreational and commercial shellfish harvesting for public health purposes in accordance with the National Shellfish Sanitation Program Guidelines. Also administers the state's Municipal Shellfish Management Program.

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

Submerged Lands Permitting

Shellfish restoration projects may require leasing of state-owned submerged lands. This section discusses the role of state-owned submerged lands, availability of King's or Crown grants, and other aspects of leasing submerged lands for restoration projects.

A. State-Owned Submerged Lands

- In Maine, submerged lands are owned by the state and held in trust for the public. Publicly owned submerged lands include:
 - All land from the mean low water mark out to the three-mile territorial limit;
 - All land below the mean low water mark on tidal rivers upstream to the farthest reaches of the tide.
- Public Trust Rights: Fishing, fowling, and navigation rights on navigable and tidal waters.¹⁰⁸
- Riparian Rights to Shellfish: There are no riparian rights to shellfish resources.

B. Leasing Process

- *Generally:* The private use of publicly owned submerged lands requires an easement or lease from the Department of Agriculture, Conservation, and Forestry – Bureau of Parks and Lands.
 - Activities and structures covered under aquaculture leases and regulated by the Maine Department of Marine Resources are exempt from the Bureau's leasing requirements.
 - The Bureau will not usually approve leases or easement for filling submerged lands. Leases or easements for "filling of Submerged Lands will not be granted unless they are for an essential but subsidiary part of a commercial fishing use, water-dependent use, shoreland stabilization, cable, or pipeline and the applicant has demonstrated that there is no other reasonable alternative site available."¹⁰⁹

¹⁰⁸ *Bell v. Town of Wells*, 510 A.2d 509 (Me.1986).

¹⁰⁹ 01-670-53 ME. CODE R. § 6.

- *Aquaculture*: The Maine Department of Marine Resources (DMR) is authorized to lease publicly owned submerged lands for finfish aquaculture and the suspended culture of shellfish.¹¹⁰
 - Standard aquaculture leases are granted for a period of up to 10 years and up to 100 acres in area.
 - DMR may issue an experimental lease or a limited-purpose aquaculture license (LPA) for commercial aquaculture research and development or scientific research.¹¹¹
 - Experimental leases are issued for projects up to 4 acres in size for three-year terms.
 - Through LPAs, DMR authorizes small projects (up to 400 square feet surface area of certain types of gear) to culture certain types of oysters and clams. **Note:** Bottom culture is not included.
 - Areas within a municipality with a shellfish conservation program may not be leased by DMR without the consent of the municipal officials.

C. King or Crown Grants

According to Maine Department of Marine Resources personnel, “kings grants” apply to some intertidal lands. Such lands, however, are still subject to the public trust. Access to the shellfish resource and the intertidal zone is allowed for fishing, fowling, and navigation.

D. Conservation Leasing

Maine does not have regulations specific to leasing waterbottoms for restoration.

Permitting Shellfish Restoration

A. Regulating Agencies

- Maine Department of Environmental Protection (DEP) (State Lead)
- Maine Department of Marine Resources (DMR)
- U.S. Army Corps of Engineers (USACE)

B. Permitting Process

The State of Maine does not have a joint permit application process with the USACE New England District for this activity. Shellfish restoration project proponents must submit separate state and federal permit applications and receive separate authorizations.

¹¹⁰ ME. REV. STAT. tit. 12, § 6072.

¹¹¹ *Id.* 6072-A.

However, submittal of a copy of the DEP application is generally an acceptable surrogate for the Corps permit application. Although the DEP will usually send applications for individual Natural Resources Protection Act permits to the USACE for review, the applicant remains responsible for ensuring that the Corps receives the application materials.

State Permitting: Natural Resource Protection Act Permit

Pursuant to authority set forth in the Natural Resources Protection Act, the DEP issues permits for activities occurring activities in, on, or over any protected resource and adjacent to coastal wetlands. Protected resources include coastal wetlands, which by definition include all tidal and subtidal land.¹¹²

- Activities requiring a permit include, among other things,:
 - Dredging, bulldozing, removing or displacing soil, sand, vegetation or other materials;
 - Filling, including adding sand or other material to a sand dune; or
 - Any construction, repair or alteration of any permanent structure.¹¹³
- The DEP authorizes alterations of coastal wetlands through individual permits and Permit by Rule.
 - All coastal wetlands and great ponds are considered wetlands of special significance. Alterations of wetlands of special significance usually require an individual permit.¹¹⁴
 - A pre-application meeting is required for some projects, and is available on request for others.
 - The DEP has a simplified permit process known as Permit by Rule (PBR) for certain activities. The DEP has issued PBRs for various classes of activities, including: shoreline stabilization, restoration of natural areas, and habitat creation or enhancement, and water quality improvement activities.¹¹⁵ Shellfish restoration activities may in some cases qualify to proceed under a PBR.
 - Project proponents must first submit a notification to DEP. In some cases, such as restoration of natural areas in tidal waters, the applicant must also obtain approval from DMR.
 - The permit is not valid until approved by DEP or 14 days after receipt, whichever is less.

¹¹² ME REV. STAT., tit. 38, § 480-B.

¹¹³ *Id.* § 480-C.

¹¹⁴ 06-096-310 ME. CODE R. § 4.

¹¹⁵ 06-096 ME. CODE R. Ch. 350.

- Website: <http://www.maine.gov/dep/land/nrpa/>

USACE Permitting:

The New England District of the USACE oversees federal dredge and fill permitting in Maine. Nationwide Permits have been suspended in New England. State-specific general permits are used instead.

The Maine General Permit is available for activities that have no more than minimal individual, secondary, and cumulative adverse effects on the aquatic environment within the boundaries of and off the coast of the State of Maine.

- Aquatic habitat restoration, establishment, and enhancement activities, if they are proactive and result in net increases in aquatic resource functions and services, may qualify as a Category 2 project.¹¹⁶ Category 2 projects require the submission of an application to the USACE and written approval must be received before commencing work.
 - The USACE states that it may look to NWP 27 for reference when making a determination about whether a project qualifies.
- A USACE individual permit is required for projects that do not meet the terms and conditions of the Maine General Permit.
- Website: <http://www.nae.usace.army.mil/Missions/Regulatory.aspx>

C. Shellfish Restoration Permitting Snapshot

- State Submerged Land Lease or Easement: Shellfish restoration projects may require a submerged land lease or easement.
 - Application submitted to Maine Bureau of Lands and Parks
 - According to DMR personnel, a person may plant oysters directly on the bottom without a lease. No protection from harvest, however, is provided without a lease. The protections afforded by a lease might not be necessary if oysters are planted in closed areas, as no harvest is allowed. Project location and goals, therefore, may impact whether a lease is sought.
- Natural Resources Act Permit: NRPA permit is only required if a Submerged Lands Lease or Easement is not obtained.
 - NRPA Individual Permit Application submitted to DEQ.
 - PBR Notification submitted to DEQ if project qualifies.

¹¹⁶ See: <http://www.nae.usace.army.mil/Portals/74/docs/regulatory/StateGeneralPermits/MEGP.pdf>

- USACE Permitting:
 - General Permit: Submission of Notification Form (Category 1) or Application (Category 2) to New England District. For Category 2 projects, USACE will issue written approval to applicant if activity qualifies under General Permit.
 - Individual Permit: only needed if project does not fall within General Permit.

D. Research & Conservation Permitting

In addition to issuing experimental leases for aquaculture research and development as discussed above, DMR is authorized to issue special licenses for research, aquaculture, or education that exempt activities from state marine resources laws as to the time, place, length, condition, amount and manner of taking or possessing a marine organism.¹¹⁷ USACE permitting of any such proposals will be activity and work specific.

E. Restoration in Closed Waters

No provision was found expressly prohibiting shellfish restoration projects in closed waters.

Protecting Existing Reefs and Restoration Projects

A. Reef Closure for Non-Public Health Concerns

Maine does not have a voluntary reef closure policy. Mussel beds and clam flats may be closed for health concerns.

B. Sanctuaries & Other Protected Areas

- The Maine Legislature has designated the Great Salt Bay Marine Shellfish Preserve as a marine shellfish preserve in which the harvesting of any shellfish species and other harvesting activities involving bottom disturbance are prohibited.¹¹⁸
 - The DMR may authorize research activities in the area.
- DMR has established conservation areas where it is unlawful to dig or take certain shellfish. Species restrictions (e.g., mussels, oysters, clams, etc.) vary among conservation areas.
 - Lincoln County¹¹⁹
 - Hancock County¹²⁰

¹¹⁷ ME. REV. STAT. tit. 12, § 6074.

¹¹⁸ *Id.* § 6961.

¹¹⁹ 13-188-90 ME. CODE R. § 90.02.

¹²⁰ *Id.* § 90.20.

- DMR has designated 4 seed mussel conservation areas to conserve and provide for effective management of unique mussel areas. It is unlawful to take mussels (*Mytilus edulis*) by any method or manner from designated seed mussel conservation areas without a permit issued by DMR.¹²¹

C. Other Tools for Protecting Shellfish Restoration Projects

- State law authorizes the deposit of oyster shell cultch in intertidal zones to promote growth of oysters with the written permission of DMR.¹²²
- Under the Municipal Shellfish Conservation Program, local governments in Maine may develop shellfish conservation programs to manage shellfish resources to the lower tide line (i.e., soft-shelled clams) through the adoption and enforcement of a town shellfish conservation ordinance.¹²³
 - Municipalities can apply for a conservation closure to close a shellfish flat for specific reasons, including shellfish seeding, flat rotation, or winter harvesting.¹²⁴

Oyster Management Generally

The wild oyster fishery is managed by the DMR. This section does not address oyster aquaculture, which is also regulated by the DMR. Maine also regulates the following shellfish: clams, quahogs, scallops, mussels, whelks, and periwinkles.

A. Oyster Harvesting

This section details the general requirements for oyster harvesting, including licenses, seasons, and other relevant details.

- Season:
 - The European oyster (*Ostrea edulis*) season is closed from June 15 to September 15 of each year. Individuals holding aquaculture leases or limited-purpose aquaculture licenses may harvest during the closed season.¹²⁵
- Licenses:
 - A commercial shellfish license is required to harvest, possess, or transport shellfish in Maine.

¹²¹ 13-188-12 ME. CODE R. § 06.

¹²² ME. REV. STAT. tit. 12, § 6521(1)(A).

¹²³ *Id.* § 6671.

¹²⁴ 13-188-7 ME. CODE R. § 7.50.

¹²⁵ *Id.* § 14.10.

- No provisions for recreational harvest of oysters were found.
- Harvesting Requirements:
 - Minimum Size for European oysters is 3 inches.
- Replanting/reseeding: None

B. Public, Private, and Natural Reef Distinctions

Maine has limited provisions governing oyster harvest. There are no distinctions between public, private, or natural reefs. American oysters (*Crassostrea virginica*) may be grown in suspended culture operations under an aquaculture lease.

Existing Shellfish Restoration Efforts

A. Government

- Little oyster restoration has occurred in Maine since native oyster *Crassostrea virginica* populations have been low for a long time. Numerous restoration efforts of both soft and hard clams and mussels occur annually in many communities along Maine's 7,500 miles of shoreline.

B. Non-government and Private

- The Down East Institute for Applied Marine Research and Education sells soft shell clam seed for depleted clam beds for communities in the state of Maine. In addition they conduct shellfish research and offer many marine educational opportunities.
 - Website: <http://www.downeastinstitute.org/home>

Mitigation

There are currently no programs in place for receiving mitigation credits for shellfish restoration in Maine.

MARYLAND

Shellfish Management at a Glance

The following are relevant state laws that may impact shellfish management and restoration projects in Maryland. Related permits are discussed in subsequent sections.

A. Coastal Program

- Responsible Agency: Maryland Department of Natural Resources
- Relevance: Regulates activities taking place in the coastal zone.
- Components:
 - Chesapeake Bay Critical Area Protection Act, Md. Code Ann., Nat. Res. § 8-1801 et. seq.
 - Maryland Regulations, Title 27
- Website: <http://dnr2.maryland.gov>

B. Submerged Lands

- Responsible Agencies: Maryland Department of the Environment-Tidal Wetlands Division and the State Board of Public Works
- Relevance: Issues licenses and permits required for filling or dredging for projects not associated with shellfish aquaculture.
- Components:
 - Tidal Wetlands Act, Md. Code Ann., Envir. § 16-101 et. seq.
- Website: <http://www.mde.state.md.us>

C. Fisheries Management

- Responsible Agency: Department of Natural Resources, Fisheries Service
- Relevance: Manages state's wild fisheries.
- Website: <http://dnr2.maryland.gov/Fisheries>

D. Shellfish Aquaculture

- Responsible Agency: Department of Natural Resources, Fisheries Service
- Relevance: Manages submerged land and water column leasing for shellfish aquaculture.
- Website: <http://dnr2.maryland.gov/fisheries/Pages/aquaculture/index.aspx>

E. Shellfish Sanitation

- Responsible Agency: The Control Authority for Maryland consists of the Maryland Department of Natural Resources, Maryland Department of the Environment and Maryland Department of Health and Mental Hygiene

- Relevance: All three agencies act cooperatively as the State’s Control Authority to implement laws, regulations and policies in accordance with the Model Ordinance under the National Shellfish Sanitation Program.
- Websites: <http://www.mde.state.md.us>;
<http://www.dhmh.maryland.gov/SitePages/Home.aspx> ;
<http://dnr2.maryland.gov/fisheries/Pages/oysters/index.aspx>

Submerged Land Leasing

Shellfish restoration projects may require leasing of state-owned submerged lands. This section discusses the role of state-owned submerged land, the availability of King’s or Crown grants, and other aspects of leasing submerged lands for restoration projects.

A. State-Owned Submerged Lands

- State waters begin at mean high tide and extend three miles seaward.
- Public Trust rights include navigation, fishing, and hunting.
- Riparian Rights to Shellfish: riparian and wharf owners have exclusive use, for the purpose of **non-commercial** growing and harvesting shellfish, of the area below the structure and in certain counties, oyster containers that are attached and within 5 feet of the structure.¹²⁶

B. Leasing Process

- *Generally*: The state will not lease bottoms from the state for the sole purpose of shellfish restoration. Shellfish restoration projects must be approved by the DNR’s Shellfish Division and the Maryland Board of Public Works and located on areas permitted by the Corps of Engineers and the Maryland Board of Public Works (see permitting section below.)
- *Aquaculture*: The Department of Natural Resources (DNR) may generally issue an aquaculture lease in waters of the Chesapeake Bay that MDE has classified as 1) approved, conditionally approved, or restricted for harvest or 2) prohibited, provided that the lease is used exclusively for the planting and gathering of seed for aquaculture and the leaseholder complies with the requirements of the National Shellfish Sanitation Program as implemented by the MDE.¹²⁷ Please note that

¹²⁶ MD. CODE ANN., Nat. Res. § 4-11A-17.

¹²⁷ *Id.* §§ 4-11A-06, -07 and -08.

Aquaculture Enterprise Zones, though authorized by statute,¹²⁸ have never been established and therefore are not available for leasing at this time.

- Areas closed to leasing include:
 - Within a minimum of 50 feet of shoreline or any pier without the written permission of the riparian owner at the time of initial application for the lease;
 - Within 150 feet of the public shellfish fishery or a registered pound net site;
 - Within 150 feet of an oyster reserve or any Yates Bar located in an oyster sanctuary;
 - Within 150 feet of a federal navigational channel;
 - Excepting to the riparian owner, within any creek, cove, bay or inlet less than 300 feet wide at its mouth at mean low tide;
 - In a setback or buffer from the Assateague Island National Seashore established by the Department; or
 - Within an SAV Protection Zone.
- Leases of submerged lands within a sanctuary must be compatible with oyster restoration and must satisfy the criteria for permissible leasing within a sanctuary as provided in regulations.

C. King or Crown Grants

While most submerged lands in Maryland are state owned, there are some patents to submerged lands conveyed prior to 1862.

D. Conservation Leasing

- DNR may issue a “demonstration lease,” which is defined as a lease of submerged land for the purpose of demonstrating the ecological benefits of growing shellfish or for research or education.¹²⁹
- Demonstration Lease (Please note, this program has not yet been implemented. Regulations are scheduled to take effect sometime in 2015.)
 - DNR may issue a demonstration lease to a public high school, an incorporated college or university within the State, a 4-H club, or a nonstock, nonprofit corporation organized under the laws of the State exclusively for educational, conservation, or ecological purposes.
 - The leaseholder must actively use the lease for the purpose of demonstrating the ecological benefits of growing shellfish or for research or education. A

¹²⁸ *Id.* § 4-11A-05.

¹²⁹ *Id.* § 4-11A-01.

person may not harvest shellfish for commercial or consumption purposes from an area that is subject to a demonstration lease.

- The size of the lease may not exceed 5 acres.
- There are no application or rental fees.
- Lease may not be assigned or transferred.
- DNR is currently developing regulations pertaining to these leases.

Permitting Shellfish Restoration

A. Permitting Agencies

- Maryland Department of the Environment (MDE) (Lead state agency)
- U.S. Army Corps of Engineers (USACE)

B. Permitting Process

Restoration projects will generally require permitting for use of environmental resources, sovereign submerged lands, and federal dredge and fill. Maryland and the U.S. Army Corps of Engineers jointly permit wetlands projects.

State Permitting

In Maryland, the Department of the Environment (MDE) is the lead state agency for wetland permitting. “State wetlands” includes state waters and is defined as “any land under the navigable waters of the State below the mean high tide, affected by the regular rise and fall of the tide.”¹³⁰ “Private wetlands” includes wetlands, transferred by the State by a valid grant, lease, patent, or grant.¹³¹ Maryland requires a wetlands license to dredge, fill, or alter state tidal wetlands. The MDE Tidal Wetlands Division reviews and the State Board of Public Works (Board) issues licenses for filling or dredging state-owned wetlands.¹³² The Board has delegated to the MDE the authority to issue a general license for activities that are minor in scope and in potential impacts to wetlands.¹³³ A permit from MDE is required for filling or dredging in private tidal wetlands.¹³⁴ To simplify permitting, the state has combined these needs into one joint permit application under the Wetlands and Waterways Program.¹³⁵ Shellfish Restoration projects also require coordination with the DNR’s Shellfish Division for appropriate siting.

¹³⁰ MD. CODE ANN., Envir. § 16-101.

¹³¹ *Id.* § 16-101.

¹³² *Id.* § 16-202; MD. CODE REGS. § 26.24.02.04.

¹³³ <http://bpw.maryland.gov/Pages/Wetlands.aspx>

¹³⁴ MD. CODE REGS. § 26.24.02.05.

¹³⁵ Available at: http://www.nab.usace.army.mil/Portals/63/docs/Regulatory/Permits/MD_Application.pdf

USACE Permitting:

The Baltimore District of the USACE oversees federal dredge and fill permitting in Maryland. The Wetlands and Waterways application process combines the federal wetlands permitting needs into a joint application. The MDE will review the permit application first and then forward the application on to the applicable USACE office.

- Maryland allows for use of NWP 27 (aquatic habitat restoration) subject to specific regional conditions. Any restoration work done under NWP 27 requires pre-construction notification in most circumstances. Regional Conditions include:
 - The placement of shell material or any other habitat development or enhancement is restricted to shellfish species that are native to that waterbody
 - Essential Fish Habitat: For activities affecting certain streams, the Corps will consult with NMFS for the PCN.
- Programmatic General Permit MDSPGP-4: MDSPGP, developed in cooperation with MDE, authorizes work in waters of the U.S. within the state of Maryland for activities that would cause no more than minimal adverse environmental effects, individually and cumulatively, subject to the permit's specific terms and conditions. The Permit is limited to projects under 3 acres.
 - While Programmatic General Permit MDSPGP-4 does not specifically refer to shellfish restoration, a project could qualify for this permit if it will cause no more than minimal adverse effects.
- Individual Permit: An individual permit will only be needed if the project does not qualify for one of the applicable general permits.

C. Shellfish Restoration Snapshot

- Wetlands and Waterways Authorization
 - Joint application submitted to MDE

D. Research & Conservation Permitting

Special permits that may be applicable to research and conservation work:

- MD DNR Scientific Collection permit: Any properly accredited person of known scientific attainment desiring to collect wildlife, nests, or eggs from the wild for scientific or educational purposes must first obtain a Scientific Collection permit from DNR. <http://dnr2.maryland.gov/fisheries/Documents/scientific-collection-permit-application.pdf>

E. Restoration in Closed Waters

The DNR's current policy is to not allow any new shellfish restoration plantings in closed waters due to the patrol burden those plantings create for the Natural Resource Police and the added risk to public health.¹³⁶

Protecting Existing Reefs and Restoration Projects

A. Reef Closure

- The Department of Natural Resources may close Harvest Reserve Areas (discussed below) for the harvest or conservation of oysters and set other harvest limits.¹³⁷ Harvest Reserve Areas may be reopened when certain criteria are met.
- The Department of Natural Resources may also close any natural oyster bar with the approval of the appropriate committee of oystermen.¹³⁸

B. Sanctuaries and Other Protected Areas

- Harvest Reserve Areas: These areas are seeded with oysters and later opened for harvest when certain criteria are met.
<http://dnr2.maryland.gov/fisheries/Pages/oysters/sanctuaries.aspx>.
- Sanctuaries are areas where the wild harvest of oysters, and both oysters and clams in previously established sanctuaries, is prohibited. They often contain oyster restoration projects to help enhance native oyster populations for their environmental benefits.
<http://dnr2.maryland.gov/fisheries/Pages/oysters/sanctuaries.aspx>
- Leasing of Yates Bar (any submerged oyster area on the charts of Oyster Survey from 1906 to 1912) in sanctuaries is prohibited.¹³⁹
- Historic oyster bars (not legal description)
<http://dnr2.maryland.gov/fisheries/pages/oysters/bars.aspx>

C. Other Tools for Protecting Shellfish Restoration Projects

- Artificial Reefs:
 - The Ocean City Reef Foundation holds permits for ocean and coastal bay sites and the Maryland Environmental Service holds the permits for the Chesapeake Bay sites.

¹³⁶ Personal communication from Maryland DNR.

¹³⁷ MD. CODE ANN., NAT. RES. § 4-1009.1.

¹³⁸ *Id.* 4-1106. Each county on tidal waters with licensed oystermen has a committee referred to in the statute.

¹³⁹ *Id.* § 4-11A-01.

- Entities donating reef material are immune from liability when the title has been transferred to the permit holder if the material meets the requirements of the national Fishing Enhancement Act.¹⁴⁰
- Artificial reef management plan is available
<http://dnr2.maryland.gov/fisheries/Documents/MarylandReefPlanFINALWOAPPENDIXB.pdf>
- Except for normal harvesting activities or as part of a wetlands license, a person may not destroy, damage, or injure any oyster bar, reef, rock, or other area located on a natural oyster bar in the Chesapeake Bay that is not a leased oyster bottom.¹⁴¹

Oyster Management Generally

The wild oyster fishery is managed by the Department of Natural Resources, Fisheries Service. This section does not address oyster aquaculture, which is also regulated by Department of Natural Resources, Fisheries Service.

A. Oyster Harvesting

This section details the general requirements for oyster harvesting, including licenses, seasons, and other relevant details.

Recreational

- Season: Recreational Oct 1-March 31; M-F sunrise to 3 p.m. and Saturday sunrise to 12 p.m.
- Licenses: For recreational purposes, no license necessary and may take up to one bushel a day.
- Harvesting methods: May only catch oysters by: hand, shaft tongs, rakes, diving.
- Minimum size: three inches measured from hinge to bill along longest part of the shell.
- Website: <http://www.eregulations.com/maryland/fishing/oysters-clams/>

Commercial

- Season: Commercial-depends on gear used. See <http://www.dnr.state.md.us/fisheries/regulations/table.asp?c=commercial>.
- Licenses: Required for commercial harvest.
- Harvesting methods: shaft tong, patent tong, dive, power dredge, sail dredge. <http://www.dnr.state.md.us/fisheries/regulations/table.asp?c=commercial>

¹⁴⁰ Maryland Artificial Reef Plan 5.9. Available at:

<http://dnr2.maryland.gov/fisheries/Documents/MarylandReefPlanFINALWOAPPENDIXB.pdf>

¹⁴¹ MD. CODE ANN., NAT. RES. § 4-1118.1.

- Harvest reporting <http://dnr2.maryland.gov/fisheries/Pages/aquaculture/harvest-reporting.aspx>

B. Public, Private, and Natural Reef Distinctions

The Maryland DNR Artificial Reef Committee (ARC) has the duty of advising the Director of Fisheries Service on all matters referred to the committee regarding the development, monitoring and management of artificial reefs in Maryland Bay and Ocean waters. Reefs are primarily developed for fishing, with oysters as an ancillary benefit.¹⁴²

Existing Shellfish Restoration Efforts

A. Government

- A number of project partners that include NOAA, U.S. Army Corps of Engineers, Oyster Recovery Partnership, Chesapeake Bay Foundation, and the Maryland Department of Natural Resources have conducted oyster restoration and restoration planning in Harris Creek, Little Choptank River, and Tred Avon River.
 - A majority of the 377 acres of the proposed oyster restoration has been completed in Harris Creek with the remaining acreage proposed to be completed in 2015. Reef construction and seeding are underway in the Little Choptank River, and reef construction will begin in the Tred Avon River in 2015.¹⁴³
- Chesapeake Bay Oyster Metrics Work Group created documentation to define what is a restored tributary and a restored reef. Ten Chesapeake Bay's estuaries (5 from Maryland, 5 from Virginia, and 2 to be determined) have been identified as potential targets for oyster restoration by 2025.
- USACE Baltimore District constructed 13 acres of oyster reefs in the Severn River on the Western Shore and 8 acres of oyster reefs were constructed at Cook Point in the Choptank River in 2010. These projects are located in sanctuaries and are closed to harvest. Data is showing that the sanctuaries are benefiting oyster recruitment in nearby oyster harvest areas along with providing ecosystems services within the tributaries. A full description of Corps activities is available at <http://www.nab.usace.army.mil/Portals/63/docs/Environmental/Oysters/MDprojectmap2014.pdf>.

¹⁴² See: <http://dnr2.maryland.gov/fisheries/Pages/reefs/index.aspx>

¹⁴³ See: <http://chesapeakebay.noaa.gov/images/stories/habitats/choptankupdate2013.pdf>

- The Oyster Recovery Program has planted and restored over 2,300 acres in Chesapeake Bay over the last 20 years. These restoration sites are located in both sanctuaries and on public oyster reefs.
- DNR also works with smaller groups on small-scale oyster restoration projects.¹⁴⁴
- Oyster gardeners are now required to register and report certain information to:
 - The State, as per the National Shellfish Sanitation Program (NSSP) Model Ordinance, that provides oversight to State shellfish activities, and
 - The U.S. Army Corps of Engineers (USACE) that has regulatory jurisdiction over oyster gardening.

B. Non-government and private

- Oyster Recovery Partnership (government and nonprofit partners) <http://www.oysterrecovery.org/what-we-do/oyster-restoration/>
- ORP's Shell Recycling Alliance <http://www.oysterrecovery.org/sra-page/>
- Chesapeake Bay Foundation-oyster gardening <http://www.cbf.org/about-cbf/offices-operations/oyster-restoration-centers/maryland-oyster-restoration-center>
- CBF shell recycling <http://www.cbf.org/how-we-save-the-bay/programs-initiatives/virginia/oyster-restoration/save-oyster-shell>

Mitigation

- TMDL limits and water quality: natural filter BMPs are used to meet TMDL requirements. The Chesapeake and Coastal Service (CCS) initiated a project titled "Integrating Water Quality and Coastal Resources into Marine Spatial Planning in the Chesapeake and Atlantic Coastal Bays." The overarching goal of this project is to help meet Maryland's TMDL goals through natural filter BMP planning and implementation. One of the goals is to evaluate opportunities to use the oyster as a natural filter. http://www.dnr.state.md.us/ccs/coastal_fellowship.asp
- Mitigation is considered in the Artificial Reef Management Plan. "The Maryland Department of Natural Resources will consider mitigation funding as an option for the artificial reef program in all future actions which result in the loss of recreational fishing opportunities and/or destruction/degradation of Bay/ocean habitat."¹⁴⁵

¹⁴⁴ Personal communication with DNR.

¹⁴⁵ Maryland Artificial Reef Plan 5.7.8. Available at:

<http://dnr2.maryland.gov/fisheries/Documents/MarylandReefPlanFINALWOAPPENDIXB.pdf>

MASSACHUSETTS

Shellfish Management at a Glance

The following provides a brief reference to regulatory permitting programs applicable to shellfish restoration in Massachusetts. Related permitting requirements are addressed in subsequent sections.

A. Coastal Program

- Responsible Agency: Massachusetts Office of Coastal Zone Management.
- Relevance: Manages coastal resources and handles federal consistency reviews. Lead agency in development of Massachusetts Ocean Plan.
- Website: <http://www.mass.gov/eea/agencies/czm/>

B. Submerged Lands

- Responsible Agency: Massachusetts Department of Environmental Protection
- Relevance: Oversees the Waterways Regulation Program through which it issues licenses and permits for activities on Commonwealth tidelands.
 - Components:
 - Massachusetts General Law Chapter 91
- Website: <http://www.mass.gov/eea/agencies/massdep/water/watersheds/waterways.html>

C. Fisheries Management

- Responsible Agency: Massachusetts Department of Fish & Game, Division of Marine Fisheries
- Relevance: Regulates commercial and recreational fishing.
- Website: <http://www.mass.gov/eea/agencies/dfg/dmf/>

D. Shellfish Aquaculture

- Responsible Agencies: Massachusetts Department of Fish & Game, Division of Marine Fisheries; Local Boards of Selectmen
- Relevance: Issue licenses and permits for shellfish culture operations.
- Website: <http://www.mass.gov/eea/agencies/dfg/dmf/>

E. Shellfish Sanitation

- Responsible Agency: Massachusetts Department of Fish & Game, Division of Marine Fisheries
- Relevance: Manages recreational and commercial shellfish harvesting for public health purposes in accordance with the National Shellfish Sanitation Program Guidelines.

- Website: <http://www.mass.gov/eea/agencies/dfg/dmf/>

Submerged Lands Permitting

Shellfish restoration projects may require leasing of state-owned submerged lands. This section discusses the role of state-owned submerged lands, availability of King's or Crown grants, and other aspects of leasing submerged lands for restoration projects.

A. State-Owned Submerged Lands

- Massachusetts claims ownership of submerged lands and tidelands below the low mark. Commonwealth Tidelands are held by the Commonwealth in trust for the benefit of the public.
- Public Trust Rights: Massachusetts was the first state in the nation to codified the public trust doctrine. The Colonial Ordinances of 1641-1647 reserved the right of the public to use the intertidal area (between high and low water marks) and submerged lands for fishing, fowling, and navigation.
- Riparian rights to shellfish: No provisions found granting riparian owners special rights to shellfish.

B. Leasing Process

- Massachusetts does not issue submerged lands leases. Private uses of public tidelands are regulated through licenses and permits authorized by Massachusetts General Law Chapter 91, the waterways licensing program (discussed below).
- *Shellfish Aquaculture License*: Local Boards of Selectmen are authorized to issue shellfish aquaculture licenses.¹⁴⁶ Licenses are issued for ten-year periods and can be renewed. Boards can authorize any of the following activities through local shellfish aquaculture licenses:
 - Plant and grow shellfish through either bottom or off-bottom operations;
 - Placement of shellfish in or under protected devices affixed to the bottom;
 - Harvest shellfish;
 - Plant cultch for the purpose of catching shellfish seed; and
 - Grow shellfish by means of racks, rafts or floats.

¹⁴⁶ MASS. GEN. LAWS ch. 130, § 57.

C. King or Crown Grants

King or Crown Grants are not specifically mentioned in Massachusetts law. Chapter 91 does distinguish between “Commonwealth tidelands” and “ private tidelands.” Private tidelands are considered the area between mean low and mean high tide and are held subject to a public trust easement.

D. Conservation Leasing

No provisions found.

Permitting Shellfish Restoration

A. Permitting Agencies

- Department of Fish and Game (DFG), Division of Marine Fisheries
- Local Government
- U.S. Army Corps of Engineers (USACE)

B. Permitting Process

The State of Massachusetts does not have a joint permit application process with the USACE New England District. Shellfish restoration project proponents must submit separate state and federal permit applications.

State: Chapter 91 Authorization

Activities located in, under, or over “flowed tidelands” – lands under tidal waters seaward of the current high water mark – require a Chapter 91 waterways license or permit from the Massachusetts Department of Environmental Protection (DEP).¹⁴⁷

- Licenses are issued for projects involving the construction of structures or fill. Permits are issued for activities or projects not involving construction or any work on structures or fill (e.g., beach renourishment, dredging).

State: Wetlands Protection Act

Massachusetts also has a Wetlands Protection Act (M.G.L. Chapter 131, Section 40) that protects both inland and coastal wetlands. The Wetlands Protection Act prohibits the

¹⁴⁷ *Id.* ch. 91.

removal, fill, dredging, or alteration of wetlands without written authorization from the DEP or local conservation commission.¹⁴⁸

- The Wetlands Protection Act is administered at the local level by local conservation commissions in accordance with DEP regulations.
- DEP regulations authorize conservation commissions to permit projects with temporary adverse effects on shellfish productivity if it does not permanently destroy the habitat and the land will be returned to its former productivity in less than one year from commencement of work.¹⁴⁹
 - Projects approved by Department of Fish & Game, Division of Marine Fisheries that are intended to increase productivity and approved aquaculture projects may also be permitted.

USACE Permitting:

The New England District of the USACE oversees federal dredge and fill permitting in Massachusetts. Nationwide Permits have been suspended in New England. State-specific general permits are used instead.

The Massachusetts General Permit is available for activities that have no more than minimal individual, secondary, and cumulative adverse effects on the aquatic environment within the boundaries of and off the coast of the State of Massachusetts.

- Aquatic habitat restoration, establishment, and enhancement activities, if they are proactive and result in net increases in aquatic resource functions and services, may qualify as a Category 2 project.¹⁵⁰ Category 2 projects require the submission of an application to the USACE and written approval must be received before commencing work.
 - The USACE states that it may look to NWP 27 for reference when making a determination about whether a project qualifies

An individual permit is required for projects that do not meet the terms and conditions of the Massachusetts General Permit.

C. Shellfish Restoration Permitting Snapshot

- Chapter 91 License or Permit: Shellfish restoration projects will require a Chapter 91 authorization.

¹⁴⁸ *Id.* ch. 131, § 40.

¹⁴⁹ 310 MASS. CODE REGS. § 10.34(5).

¹⁵⁰ <http://www.nae.usace.army.mil/Portals/74/docs/regulatory/StateGeneralPermits/MAGP.pdf>.

- Application submitted to DEP.
- Order of Condition: Shellfish restoration projects occurring in coastal wetlands may need an additional permit, referred to as an Order of Condition, from a conservation commission pursuant to the Wetlands Protection Act.
- USACE Permitting:
 - General Permit: Submission of Notification Form (Category 1) or Application (Category 2) to New England District. For Category 2 projects, USACE will issue written approval to applicant if activity qualifies under General Permit.
 - Individual Permit: Only needed if project does not fall within General Permit.

D. Research & Conservation Permitting

- The DEP may issue a permit authorizing a Test Project that has minimal impacts.¹⁵¹ A “Test Project” is defined as “the installation or deployment of water dependent Innovative Technology *in situ* for purposes of evaluating its performance and environmental effects.”¹⁵² Test Projects are exempt from some of the procedural requirements of Chapter 91 permitting.

E. Restoration in Closed Waters

Restoration activities are permitted in closed waters.

Protecting Existing Reefs and Restoration Projects

A. Reef Closure for Non-Public Health Concerns

Cities and towns are authorized to declare a closed season for shellfish as they deem proper, provided the closure is for a period no more than three years and does not impair private rights. Closures do not apply to areas that are subject to a private grant.¹⁵³

B. Sanctuaries & Other Protected Areas

- Ocean Sanctuaries: The Massachusetts Ocean Sanctuary Act designated five state ocean sanctuaries: Cape Cod Ocean Sanctuary; Cape Cod Bay Ocean Sanctuary; Cape and Islands Ocean Sanctuary; North Shore Ocean Sanctuary; and South Essex Ocean Sanctuary. These areas are managed by the Office of Coastal Zone Management are

¹⁵¹ *Id.* § 9.30.

¹⁵² *Id.* § 9.02.

¹⁵³ MASS. GEN. LAWS ch. 130 § 54.

“to be protected from any exploitation, development, or activity that would significantly alter or otherwise endanger the ecology or the appearance of the ocean, the seabed, or subsoil thereof, or the Cape Cod National Seashore.”¹⁵⁴

- Most activities are allowed within ocean sanctuaries provided the proper agency authorizations are obtained. Among other things, the building of structures on the seabed is prohibited within ocean sanctuaries.
- Areas of Critical Environmental Concern: Areas of Critical Environmental Concern (ACECs) are places in Massachusetts that receive special protection because of the quality, uniqueness and significance of their natural and cultural resources. ACECs are identified and nominated at the community level and are reviewed and designated by the state’s Secretary of Energy and Environmental Affairs.
 - Once designated, all Executive Office of Environmental Affairs (EOEA) agencies must ensure that activities in or impacting on the area are carried out so as to minimize adverse effects on:
 - Marine and aquatic productivity,
 - Surface and groundwater quality,
 - Habitat values,
 - Storm damage prevention or flood control,
 - Historic and archeological resources,
 - Scenic and recreational resources, and
 - Other natural resource values of the area.¹⁵⁵

C. Other Tools for Protecting Shellfish Restoration Projects

- The DEP’s Chapter 91 regulations for dredging and dredged material disposal activity requiring that the design and timing of projects “minimize adverse impacts on shellfish beds, fishery resource areas, and submerged aquatic vegetation.”¹⁵⁶
- State law directs the Department of Fish & Game, Division of Marine Fisheries “to assist and cooperate with coastal cities and towns for the purpose of establishing and maintaining a program of self-help to said cities and towns for the cultivation, propagation and protection of shellfish.”¹⁵⁷
- Local Shellfish Programs: Local governments bordering coastal waters are authorized to develop programs to control, regulate, or prohibit the taking of shellfish. Local regulations may require that permits be obtained and govern the

¹⁵⁴ *Id.* ch. 132A, § 14.

¹⁵⁵ 310 MASS. CODE REGS. § 12.12(1)(c).

¹⁵⁶ *Id.* 9.40(2)(b).

¹⁵⁷ MASS. GEN. LAWS ch. 130 § 20A.

times, places, methods, purposes, uses, sizes, quantities and any other aspects of harvest.¹⁵⁸

- Wetlands Protection Act: One of the specific interests identified for protection under the Wetlands Protection Act is “Land containing shellfish.” Land Containing Shellfish is defined by the DEP as “land under the ocean, tidal flats, rocky intertidal shores, salt marshes and land under salt ponds when any such land contains shellfish.”¹⁵⁹
 - If a proposed project location is significant to the protection of land containing shellfish, Conservation Commissions are authorized to impose conditions on such projects to protect the public interest.
 - Lands containing shellfish are found significant mapped and designated as such by Conservation Commission or DEP based upon maps by Division of Marine Fisheries or local shellfish constables.
 - Pursuant to DEP regulations, projects on land containing shellfish may not adversely affect such land or marine fisheries by a change in the productivity of such land caused by:
 - Alterations of water circulation;
 - Alterations in relief elevation;
 - The compacting of sediment by vehicular traffic;
 - Alterations in the distribution of sediment grain size;
 - Alterations in natural drainage from adjacent land; or
 - Changes in water quality, including, but not limited to, other than natural fluctuations in the levels of salinity, dissolved oxygen, nutrients, temperature or turbidity, or the addition of pollutants.¹⁶⁰

Oyster Management Generally

The wild oyster fishery is managed by the Division of Marine Fisheries (DMF) within the Department of Fish & Wildlife. This section does not address oyster aquaculture which is also regulated by DMF. Massachusetts also regulates the following other shellfish: clams, conchs, mussels, oysters, periwinkles, quahaugs, razor clams or razor fish, scallops, sea clams, sea quahaugs, sea scallops and winkles.

¹⁵⁸ *Id.* ch. 130 § 52.

¹⁵⁹ 310 MASS. CODE REGS. § 10.34(2).

¹⁶⁰ *Id.* § 10.34(4).

A. Oyster Harvesting

This section details the general requirements for oyster harvesting, including licenses, seasons, and other relevant details.

- Season: No closed season.
- License:
 - Commercial Harvest: No person may dig or take shellfish for commercial purposes without a commercial fishing license. Local shellfish permits may also be needed.
 - Recreational/Personal Harvest: Allowed in designated clean areas and regulated by the local governments.
- Harvesting Requirements:
 - No possession limit, 3” minimum to harvest.

B. Public, Private, and Natural Reef Distinctions

Massachusetts has limited provisions governing oyster harvest. There are no distinctions between public, private, or natural reefs.

Existing Shellfish Restoration Efforts

A. Government

- The Town of Barnstable, MA has developed a program to establish oyster reefs in its town.
 - <http://www.whoiedu/seagrant/page.do?pid=51817&tid=282&cid=88714>

B. Non-government and Private

- Woods Hole Oceanographic Institute Sea Grant has worked with the Barnstable Shellfishermen’s Association on the Barnstable Harbor Shellfish Restoration and Enhancement Program (BHSREP) to reestablish shellfish beds in the area.
- The Town of Wellfleet worked on a restoration project with NOAA and TNC.
 - <http://www.mass.gov/eea/agencies/mass-bays-program/grants/oyster-reef-wellfleet-2011.html>

Mitigation

There are currently no programs in place for receiving mitigation credits for shellfish restoration in Massachusetts.

MISSISSIPPI

Shellfish Management at a Glance

The following provides a quick reference to relevant state laws and regulatory programs impacting shellfish management and restoration projects in Mississippi. Related permitting requirements are addressed in subsequent sections.

A. Coastal Program

- Responsible Agency: Mississippi Dept. of Marine Resources (DMR)
- Relevance: Wetland permitting of activities taking place in the coastal zone.
- Components:
 - Coastal Wetlands Protection Act, Miss. Code Ann. § 49-27-1, et seq.
- Website: <http://www.dmr.ms.gov/>

B. Submerged Lands

- Responsible Agency: Mississippi Secretary of State
- Relevance: Leasing of state-owned submerged lands.
 - Components: Mississippi Public Trust Tidelands Act
- Website: <http://www.sos.ms.gov/Public-Lands/Pages/Public-Trust-Tidelands.aspx>

C. Fisheries Management

- Responsible Agency: Mississippi Dept. of Marine Resources (DMR)– Shellfish Bureau
- Relevance: Oversees shellfish harvesting.
- Website: <http://www.dmr.state.ms.us/index.php/marine-fisheries/shellfish>

D. Shellfish Aquaculture

- Responsible Agency: Mississippi Dept. of Marine Resources (DMR)
- Relevance: Regulates marine aquaculture activities.
- Website: <http://www.dmr.state.ms.us/index.php/commercial-fishing/regulations>

E. Shellfish Sanitation

- Responsible Agency: Miss. DMR – Shellfish Bureau
- Relevance: Oversees shellfish harvesting, Compliance with the Interstate Shellfish Sanitation Conference's National Shellfish Sanitation Program.
- Website: <http://www.dmr.state.ms.us/index.php/marine-fisheries/shellfish>

Submerged Lands Permitting

Shellfish restoration projects may require leasing of submerged lands if being conducted by private entities. This section discusses the role of state-owned submerged lands, the availability of King's or Crown grants, and other aspects of leasing submerged lands for restoration projects.

A. State Owned Submerged Lands

- Governed by the Mississippi Public Trust Tidelands Act. Applies to state-owned land below mean high tide.
- Public Trust Rights: transportation, fishing, swimming and recreation, the development of mineral resources, and environmental preservation.¹⁶¹
- Riparian Rights to Shellfish: none found.

B. Leasing Process

- *Generally*: All activities on state-owned public trust tidelands other than aquaculture must apply for a Standard Lease from the MS Secretary of State.
 - Application requirements: <http://www.sos.ms.gov/Public-Lands/Pages/Administrative-Rules.aspx#rule5a>
 - Minimum rental fee: 7¢ per square foot
- Exceptions:
 - Government run public restoration projects
 - All public projects of any federal, state or local governmental entity which serve a higher public purpose of promoting the conservation, reclamation, preservation of the tidelands and submerged lands, public use for fishing, recreation or navigation, or the enhancement of public access to such lands shall be exempt from any use or rental fees.¹⁶²
 - Riparian owners' piers, boathouses, shoreline stabilization.
- *Aquaculture*: Also managed by the MS Secretary of State but requires different lease application and applies different fee structure.
 - Application must include:

¹⁶¹Cinque Bambini P'ship v. State, 491 So. 2d 508, 510 (Miss. 1986).

¹⁶²MISS. CODE ANN. § 29-15-13.

- Description of aquaculture activities to take place on the parcel
- Statement of why the lease is in the public interest and impacts of the proposed use on the public trust tidelands
- List of all littoral or riparian owners adjacent to the property
- Leased area must provide reasonable public access for boating, swimming and fishing, unless it will interfere with the cultivation.
- Aquaculture leases are not permitted within one mile of “habitats of special significance.”

C. King or Crown Grants

In limited circumstances, Mississippi submerged lands may be held privately where the owner can trace their chain of title to a grant from the king prior to becoming part of the United States. These are generally referred to Spanish land grants in this region. Restoration on private lands will not require a submerged land lease but will still require a Coastal Wetlands Permit, discussed below.

D. Conservation Leasing

Mississippi does not have a mechanism in place to lease submerged lands for conservation purposes. However, nothing in the laws and regulations suggest that this would be impermissible so long as the state public purpose was met, rental fees were paid, and it was the highest and best use for the particular parcel of land according to state review. In addition, the Secretary of State is authorized to lease swamp lands as game and fish preserves (though must be for tracts of land 1000 acres or more). This could serve as a model for conservation leasing in the state.¹⁶³

Permitting Shellfish Restoration

A. Regulating Agencies

- MS Dept. of Marine Resources (Coordinating Agency)
- MS Dept. of Environmental Quality – Office of Pollution Control
- U.S. Army Corps of Engineers (USACE)

B. Permitting Process

Restoration projects will generally require permitting for use of environmental resources, sovereign submerged lands, and federal dredge and fill permitting. To simplify permitting, the state and the USACE have combined these needs into one joint permit application

¹⁶³ MISS. CODE ANN. § 49-5-1.

under the Coastal Wetlands Permitting program. The application is submitted to MS DMR, the designated coordinating agency.

Coastal Wetlands Permit:

The permit program applies to activities taking place on coastal wetlands. Mississippi defines coastal wetlands to include all publicly owned lands subject to the ebb and flow of the tide.¹⁶⁴ A “regulated activity” is defined as “any of the following activities: (i) The dredging, excavating or removing of soil, mud, sand, gravel, flora, fauna or aggregate of any kind from any coastal wetland; (ii) The dumping, filling or depositing of any soil, stones, sand, gravel, mud, aggregate of any kind or garbage, either directly or indirectly, on or in any coastal wetlands; (iii) Killing or materially damaging any flora or fauna on or in any coastal wetlands; (iv) The erection on coastal wetlands of structures which materially affect the ebb and flow of the tide; and (v) The erection of any structure or structures on suitable sites for water dependent industry.”¹⁶⁵

A Joint Application should be submitted to MS DMR. Applicants must also notify adjacent property owners if the activity is within 10 feet of their riparian zone.

USACE Permitting:

The Mobile District of the USACE oversees federal dredge and fill permitting in coastal Mississippi. The joint permit application process combines the federal wetlands permitting needs into a joint application. MSDMR will review the permit application first and then forward the application on to the applicable USACE office. Mississippi allows for use of NWP 27 (aquatic habitat restoration) with conditions. Any restoration work done under NWP 27 requires pre-construction notification in most circumstances. In most cases, a shellfish restoration project should qualify for NWP 27. Even if the activity qualifies for NWP 27, it must also seek a state Coastal Use Permit or waiver thereof if the activity is in coastal wetlands or within 200 feet of mean high tide.

In addition, Regional General Permit MSGP-03 Living Shorelines allows for the placement of oyster shells for shoreline protection. Though not specific to restoration, this permit may apply to certain projects using oyster reefs as breakwaters. Projects qualifying for the RGP will still require a coastal wetlands permit or waiver from MS DMR.¹⁶⁶

An individual permit will only be needed if the project does not qualify for a NWP or RGP.

¹⁶⁴ MISS. CODE ANN. § 49-27-5.

¹⁶⁵ MISS. CODE ANN. § 49-27-5(c).

¹⁶⁶ However when DMR issues the authorization under the RGP, it includes authorization from USACE, DMR, and DEQ altogether. No separate authorization is needed.

C. Shellfish Restoration Permitting Snapshot

- Coastal Wetlands Permit:
 - Joint Application submitted to MS DMR.
 - Includes review by USACE
 - Serves as Pre-Construction Notification (PCN) for applicable general permits.
 - If a major activity, applicant may receive individual permits from MS DMR and USACE. However, only one joint application is required.
- State submerged lands lease may also be required.
- USACE: review included in the Joint Coastal Wetlands Permit Application submitted to DMR. Project should qualify for NWP 27. An individual permit will only be needed if the project does not qualify for a NWP or RGP.

D. Research & Conservation Permitting

Mississippi has provisions for special permits that may be applicable to research and conservation work.¹⁶⁷ These include:

- Marine Scientific Collection Permit¹⁶⁸
- Non-profit Organizations Harvesters Permit
- Marine Brood Stock Collection Permit
- Experimental Gear/Underutilized species permit

E. Restoration in Closed Waters

Mississippi has not prohibited shellfish restoration projects in closed waters.

Protecting Existing Reefs and Restoration Projects

A. Reef Closure for Non-Public Health Reasons

No mechanisms for closing oyster reefs, other than for public health reasons, discovered.

B. Sanctuaries & Other Protected Areas

- Mississippi Coastal Preserves (aka Mississippi Gulf Ecological Management Site)

¹⁶⁷ The MCMR is authorized by § 49-15-15 (o) of the Mississippi Code Ann. to prescribe types and forms of scientific permits for public educational or scientific institutions, federal and state agencies and consultants performing marine resources studies. Miss. Admin. Code 22-1-13:02

¹⁶⁸ MISS. ADMIN. CODE 22-1-13:04.

- Authorized under the Coastal Wetlands Protection Act
- More than 20 preserve sites, details on each site available at: <http://www.dmr.state.ms.us/index.php/mississippi-gems>
- State Declared Wildlife Refuges
 - All state held lands are considered forest reserves and wildlife refuges. Unclear application to state waters.¹⁶⁹
- Estuarine Sanctuaries
 - Estuarine sanctuaries may be created to increase the productivity of coastal waters (to enhance fisheries).¹⁷⁰
 - Deer Island potential estuarine sanctuary.
- Artificial Reefs as Sanctuaries
 - Under review in Mississippi but not currently utilized.¹⁷¹
- State sanctuary authority found in its authority to protect, conserve, and propagate seafood.¹⁷²
 - Used to create a sponge crab sanctuary.¹⁷³
- Mississippi Special Management Areas (SMA) are unrelated to shellfish restoration (though estuarine sanctuary briefly mentioned in relation to shoreline access SMA).

C. Other Tools for Protecting Shellfish Restoration Projects

- Oysters as essential fish habitat
 - Oysters (“live bottoms”) are recognized essential fish habitat in the following areas:
 - Mississippi Sound, back bays, coastal waterways, and coastal streams.
- Artificial Reef Liability Protections – Mississippi has an artificial reef program and may assume liability for artificial reef materials whose ownership is transferred to the state.
- Geophysical exploration protections – Mississippi regulations governing offshore energy development do include considerations for special habitat areas that may provide protection for shellfish grounds.

¹⁶⁹ MISS. CODE ANN. § 49-5-1.

¹⁷⁰ MISS. ADMIN. CODE 22-1-3:4-5.

¹⁷¹ *Id.* 22-1-2:7.

¹⁷² MISS. CODE ANN. § 49-15-15.

¹⁷³ Miss. Admin. Code 22-1-19:02.

Oyster Management Generally

The wild oyster fishery is managed by the MS DMR. This section does not address oyster aquaculture, which is also regulated by MS DMR.

A. Oyster Harvesting

This section details the general requirements for oyster harvesting, including licenses, seasons, and other relevant details.

- Season:
 - The commercial oyster season is regulated the Commission on Marine Resources. Notifications are posted in newspapers, radio, and television.
- Licenses:
 - Required for commercial harvester.
 - Required for any non-resident.
 - Recreation harvest by state residents allowed without license but must have tags.
 - Nonprofit harvesters license:
 - A non-profit organization can request permission to harvest oysters outside of the open season and/or in closed waters.¹⁷⁴
- Harvesting Requirements:
 - Must be 3 inches in size.
 - Can only be harvested during daylight hours.
 - A detailed discussion of Mississippi oyster harvesting requirements can be found in the *2013 Oystermen's Guide to Mississippi Gulf Coast Oyster Reefs*, available at: <http://www.dmr.state.ms.us/index.php/marine-fisheries/shellfish>
- Replanting/reseeding: No requirements found.

B. Public, Private, and Natural Reef Distinctions

Oyster reefs are managed by the MS DMR.

Existing Shellfish Restoration Efforts

A. Government

The DMR has conducted numerous shellfish restoration projects. These projects and programs include:

¹⁷⁴ *Id.* 22-1-13:05.

- Oyster reef cultch planting program
- DMR Oyster Stewardship Program
- Deer Island Restoration – 3000 feet of oyster shell

Additional information can be found at: <http://www.dmr.state.ms.us/index.php/marine-fisheries/shellfish>

B. Non-government and Private

The Gulf of Mexico Foundation has partnered with DMR on shellfish restoration projects. TNC has also worked on some small scale and pilot shellfish restoration projects in Mississippi Sound and Back Bay. Coastal Environments Inc. has also been conducting an oyster shell recycling program with numerous restaurants in Mississippi.

Mitigation

There are currently no programs in place for receiving mitigation credits for shellfish restoration in Mississippi. However, the Shellfish Bureau has required that funds be paid into a shellfish mitigation account for certain projects in the past.¹⁷⁵

¹⁷⁵ Per agency reviewer.

NEW HAMPSHIRE

Shellfish Management At a Glance

The following provides a brief reference to regulatory permitting programs applicable to shellfish restoration in New Hampshire. Related permitting requirements are addressed in subsequent sections.

A. Coastal Program

- Responsible Agency: NH Department of Environmental Services
- Relevance: Manages coastal resources and handles federal consistency reviews.
- Website: <http://des.nh.gov/organization/divisions/water/wmb/coastal/index.htm>

B. Submerged Lands

- The state of New Hampshire does not have a leasing program for submerged lands. Authorization of private uses of public submerged lands is handled through the wetlands or other permitting processes. The NH Fish and Game Department, for example, regulates private aquaculture in tidal waters, as well as shellfish restoration projects. The NH Division of Ports and Harbors regulates placement of moorings in tidal waters.

C. Fisheries Management

- Responsible Agency: New Hampshire Fish and Game Department – Marine Fisheries Division
- Relevance: Regulates commercial and recreational harvest of shellfish.
- Website: <http://www.wildlife.state.nh.us/marine/index.htm>

D. Shellfish Aquaculture

- Responsible Agency: New Hampshire Fish and Game Department – Marine Fisheries Division
- Relevance: Oversees development and licensing of shellfish aquaculture operations.
 - Component: NHF&G issues licenses that permit the activity of marine aquaculture as provided by N.H. REV. STAT. ANN § 211:62-e and N.H. CODE ADMIN. R. ANN. Fis 807.
- Website: <http://www.wildlife.state.nh.us/marine/index.htm>

E. Shellfish Sanitation

- Responsible Agencies: New Hampshire Department of Health and Human Services (DHHS); New Hampshire Department of Environmental Services (DES)

- Relevance: The DHHS serves as the state shellfish sanitation control authority for the commercial sale and processing of shellfish. DES serves as the state shellfish sanitation control authority for the determination of areas where shellfish may be harvested.
- Websites:
 - <http://des.nh.gov/organization/divisions/water/wmb/shellfish/index.htm>
 - <http://www.dhhs.state.nh.us/dphs/fp/shellfish/index.htm>

Submerged Lands Permitting

Shellfish restoration projects may require leasing of state-owned submerged lands. This section discusses the role of state-owned submerged lands, availability of King’s or Crown grants, and other aspects of leasing submerged lands for restoration projects.

A. State-Owned Submerged Lands

- New Hampshire holds rights in all shorelands subject to the ebb and flow of the tide to the high water mark.¹⁷⁶
- Public Trust Rights: “Any person may use the public trust coastal shorelands of New Hampshire for all useful and lawful purposes, to include recreational purposes, subject to the provisions of municipal ordinances relative to the ‘reasonable use’ of the public trust shorelands.”¹⁷⁷
- Riparian Rights to Shellfish: No provisions found.

B. Leasing Process

- *General*: There is no general leasing program for submerged lands in New Hampshire. Private use of public tidelands is authorized through the wetlands, aquaculture, and other permitting programs.
- *Oyster Licenses*: Oyster aquaculture licenses are typically issued annually, although the New Hampshire Fish and Game Department is authorized to issue 5-year licenses for oyster aquaculture operations in the Great Bay estuary.¹⁷⁸ Licenses can be obtained for both bottom and suspended culture.¹⁷⁹

C. King or Crown Grants

¹⁷⁶ N.H. REV. STAT. ANN. § 483-C:1(II).

¹⁷⁷ *Id.* § 483-C:1(II).

¹⁷⁸ *Id.* § 211:62-e(II-b).

¹⁷⁹ N.H. CODE ADMIN. R. ANN. Fis 807.11.

King or Crown Grants are not specifically mentioned in New Hampshire law. According to NHDES personnel, generally public land is located below the mean high tide line with some exceptions prior to state or municipal boundaries being established.

D. Conservation Leasing

Because New Hampshire does not have a leasing program for state-owned water bottoms, conservation leasing is not available.

Permitting Shellfish Restoration

A. Regulating Agencies

- NH Department of Environmental Services (NHDES)
- U.S. Army Corps of Engineers (USACE)
- NHF&G

B. Permitting Process

Restoration projects will generally require permitting for use of environmental resources, sovereign submerged lands, and federal dredge and fill. The State of New Hampshire does not have a joint permit application process with the USACE New England District. Shellfish restoration project proponents must submit separate state and federal permit applications. Shellfish restoration projects would also typically require a NHF&G permit.

State Permitting: Chapter 482-A (Fill and Dredge in Wetlands)

- In New Hampshire, the wetland permitting provisions apply to wetlands, surface waters, and “to all lands submerged or flowed by mean high tide.”¹⁸⁰
- Activities involving the excavation, fill, dredging, or construction of structures in or on jurisdictional areas require a permit from the Wetlands Bureau within the NH Department of Environmental Services (DES).¹⁸¹
 - The DES Wetlands Rules identify three classes of projects: Minimum, Minor and Major Impact Projects. Projects in tidal wetlands are classified as “major projects”¹⁸² and are subject to standard review.

¹⁸⁰ N.H. REV. STAT. ANN. § 482-A:4(I).

¹⁸¹ *Id.* § 482-A:3.

¹⁸² N.H. CODE ADMIN. R. ANN. Env-Wt 303.02(a).

- According to NHDES personnel, shellfish restoration projects to date have been permitted as Minimum Impact Projects under N.H. CODE ADMIN. R. Env-Wt 303.04(t) (Restoration of altered or degraded wetlands).
 - To qualify, the project must receive financial support and direct supervision from a NH State or Federal agency, must not be subject to an enforcement action, must not be located in or adjacent to prime wetlands, and have no identified rare, threatened or endangered species within the project area or vicinity.
- **Note:** NHDES is currently undertaking an extensive rewrite of the agency's wetlands rules. The manner in which restoration, aquaculture, and other similar activities are regulated may change in the future.

Scientific Permit:

- According to NH Fish and Game Department (NHF&G) personnel, any effort to assess the success of shellfish restoration (e.g., shellfish surveys) would require a Scientific Permit issued by NHF&G.
 - NHF&G may grant scientific licenses to any person, governmental entity or educational institute for scientific or research purposes.¹⁸³
 - If the restoration project was bringing in shellfish from another location or state (like from hatchery), an NHF&G-issued importation permit would also be needed.

USACE Permitting:

The New England District of the USACE oversees federal dredge and fill permitting in New Hampshire. Nationwide Permits have been suspended in New England. State-specific general permits are used instead.

Under the New Hampshire Programmatic General Permit,¹⁸⁴ the USACE reviews projects according to the State of New Hampshire Wetland Rules classification of Minimum, Minor, and Major Impact projects.

- Minimum and minor impact projects may proceed after receiving DES Wetland Bureau authorization unless the applicant receives written notification from the USACE. The PGP thus eliminates the need to apply for separate approval from the USACE for most minor work in New Hampshire when authorized by the DES Wetlands Bureau.

¹⁸³ N.H. REV. STAT. ANN. § 214:29.

¹⁸⁴ <http://www.nae.usace.army.mil/Portals/74/docs/regulatory/StateGeneralPermits/NHPGPAug2013.pdf>

- Shellfish seeding projects are classified as Minimum Impact projects provided the proposed sites do not support submerged aquatic vegetation.
- Major impact projects require written authorization from USACE, in addition to DES permits.
 - Dredge or fill projects with proactive restoration (e.g., shellfish beds) as a primary purpose with impacts of any size are classified as Minor/Major project under the PGP. The USACE will decide if a project qualifies as proactive restoration.

An individual permit is required for projects that do not meet the terms and conditions of the New Hampshire PGP.

C. Shellfish Restoration Permitting Snapshot

- Wetlands Permit: Shellfish restoration projects will require a wetlands permit if placement of fill or structure is involved.
 - Application submitted to NH DES.
- Scientific Permit: Any assessment of restoration success would require a Scientific Permit.
 - Application submitted to NHF&G
- USACE Permitting:
 - NH PGP: Submit USACE Application Form (ENG Form 4345), along with the DES Wetlands Bureau application or permit notification forms.
 - For Minimum and Minor Impact projects, applicants can proceed with project after receiving DES approval.
 - For Major Impact Projects, applicants must wait for written authorization from the Corps.
 - Individual Permit: only needed if project does not fall within PGP.

D. Research & Conservation Permitting

The DES Wetland Rules do not contain special provisions to facilitate permitting of research or conservation projects.

E. Restoration in Closed Waters

No provision was found expressly prohibiting shellfish restoration projects in closed waters.

Protecting Existing Reefs and Restoration Projects

A. Reef Closure for Non-Public Health Concerns

Shellfish grounds may be closed for public health concerns or for conservation and management purposes. The NHDES, after a hearing, has the authority to order a partial closing of clam, oyster, and other bivalve areas for the purpose of management of these areas by rotation.¹⁸⁵

B. Sanctuaries & Other Protected Areas

- Great Bay National Estuarine Research Reserve: managed by the New Hampshire Fish and Game Department in cooperation with the National Oceanic and Atmospheric Administration (NOAA).
 - <http://www.eregulations.com/newhampshire/fishing/saltwater/great-bay-national-estuarine-research-reserve/>

C. Other Tools for Protecting Shellfish Restoration Projects

- Healthy Tidal Waters and Shellfish Protection Program: State law directs DES to establish the Healthy Tidal Waters and Shellfish Protection Program to ensure that water quality in coastal waters supports the propagation, conservation, and harvest of shellfish. Under this program, DES monitors and classifies coastal waters, works with cooperating agencies to mitigate water quality impairments, conducts public outreach, and engages in strategic planning to enhance recreational harvest and commercial aquaculture opportunities.¹⁸⁶
- Dredging in tidal waters may not be undertaken between November 15 and March 15, and is not permitted during a fish migration or larval setting stage of shellfish.¹⁸⁷
- NH fishing regulations prohibit transplanting oysters, or taking eggs, larvae, or spat oysters without the written permission of the NHF&G.¹⁸⁸

Oyster Management Generally

The wild oyster fishery is managed by the New Hampshire Fish and Game Department, Marine Fisheries Division (MFD). This section does not address oyster aquaculture, which

¹⁸⁵ N.H. REV. STAT. ANN. § 211:63-a.

¹⁸⁶ *Id.* § 487:34(I).

¹⁸⁷ N.H. CODE ADMIN. R. Env-WT 304.11(b).

¹⁸⁸ *Id.* Fis 605.03.

is also regulated by the MFD. New Hampshire also regulates the following shellfish: clams, mussels, and scallops.

A. Oyster Harvesting

This section details the general requirements for oyster harvesting, including licenses, seasons, and other relevant details.

- Season:
 - New Hampshire prohibits the taking of oysters during July and August. Oysters may be harvested from sunrise to sunset.
- License:
 - Commercial: None. There is no commercial wild oyster fishery in NH.
 - Recreational: A shellfishing license is required to harvest oysters. Limited to NH residents. Recreationally harvested oysters cannot be sold.
- Harvesting Requirements:
 - Licensed residents can take not more than one-half bushel of unshucked oysters per day.
 - Oysters shall not be taken through the ice, or in areas posted as closed.
 - Methods Allowed: Use of hand tongs or by hand.

B. Public, Private, and Natural Reef Distinctions

New Hampshire has limited provisions governing oyster harvest. There are no distinctions between public, private, or natural reefs. New Hampshire does not have an artificial reef program.

Existing Shellfish Restoration Efforts

A. Government

- The NHDES and NHF&G encourage oyster harvesters to engage in the following activities: oyster shell recycling, oyster shell return and oyster drill (snail) removal. See <http://des.nh.gov/organization/divisions/water/wmb/shellfish/oyster.htm>, <http://www.wildlife.state.nh.us/marine/shellfishing.html>.

B. Non-government and Private

- Over 23 acres of oyster habitat have been restored for ecosystem services with 4 acres restored for both ecosystem services and oyster harvest. These projects were installed by Granite Slate Shellfish LLC, Choice Oysters LLC, Little Bay Oyster Company, The University of New Hampshire, and the Nature Conservancy's New

Hampshire Chapter. The restoration sites include Adams Point, Bellamy River, Berry Brook, Great Bay, Lamprey River, Little Bay Fox Point, Nannie Island, Oyster River, Salmon Falls River, South Mill Pond, and Squamscott River.

- The Nature Conservancy is also working with local families, who grow spat on their private docks, and the Coastal Conservation Association, who works to collect used shells from fish markets and restaurants.
- Grizzle Coastal Consulting has also done oyster restoration work in NH.
<http://www.grizzlecoastalconsulting.com/oyster-reef-restoration.html>

Mitigation

There are currently no programs in place for receiving mitigation credits for shellfish restoration in New Hampshire.

NEW YORK

Shellfish Management At a Glance

The following provides a brief reference to regulatory permitting programs applicable to shellfish restoration in New York. Related permitting requirements are addressed in subsequent sections.

A. Coastal Program

- Responsible Agency: New York Department of State, Office of Planning and Development
- Relevance: Handles federal consistency reviews and provides funding and technical support to encourage local waterfront revitalization plans.
 - Component: Article 42 of the Waterfront Revitalization of Coastal Areas and Inland Waterways Act
- Website: <http://www.dos.ny.gov/opd/programs/WFRevitalization/coastmgmtprog.html>

B. Submerged Lands

- Responsible Agency: New York Office of General Services, Real Estate Development Program
- Relevance: Issues leases, easements and permits for uses of land underwater.
- Website: <http://ogs.ny.gov/BU/RE/LM/EGLP.asp>

C. Fisheries Management

- Responsible Agency: New York State Department of Environmental Conservation, Bureau of Marine Resources
- Relevance: Manages shellfish harvesting and issues harvesting permits and licenses.
- Website: <http://www.dec.ny.gov/outdoor/345.html>

D. Shellfish Aquaculture

- Responsible Agency: New York State Department of Environmental Conservation, Bureau of Marine Resources – Shellfish Unit
- Relevance: Regulates marine aquaculture operations in the state.
- Website: <http://www.dec.ny.gov/index.html>

E. Shellfish Sanitation

- Responsible Agency: New York State Department of Environmental Conservation, Bureau of Marine Resources
- Relevance: Monitors shellfish growing areas for public health concerns and manages harvest in accordance with the National Shellfish Sanitation Program Guidelines.

- Website: <http://www.dec.ny.gov/outdoor/345.html>

Submerged Lands Permitting

Shellfish restoration projects may require leasing of state-owned submerged lands. This section discusses the role of state-owned submerged lands, availability of King's or Crown grants, and other aspects of leasing submerged lands for restoration projects.

A. State-Owned Submerged Lands

- The State of New York refers to submerged lands as “lands under water.” The state claims title to the submerged lands, from mean high water to three nautical miles seaward into the Atlantic Ocean, Long Island Sound, and other navigable bays.
- Public Trust Rights: Navigation, commerce, fishing, bathing, and recreation; environmental protection; and access to the navigable waters of the state.¹⁸⁹
- Riparian Rights to Shellfish: No provisions found granting riparian owners special rights to shellfish.

B. Leasing Process

- *Generally:* The Office of General Services (OGS) may grant fee title to land underwater to adjacent landowners to promote commerce; for the beneficial enjoyment of the owners; for agricultural purposes; for a public park, beach, highway; or recreation or conservation purposes.¹⁹⁰ Grants in land underwater in fee simple are limited to exceptional circumstances.¹⁹¹ The Office of General Services may also lease land underwater to the owner of adjacent upland or to others with the consent of adjacent upland landowners for terms up to forty years.¹⁹²
 - When making such grants and leases, the OGS shall reserve such interests or attach such conditions as necessary to preserve the public interest in use of state-owned lands underwater.
 - Structures and fill may not be placed on state-owned lands underwater without authorization under a lease, easement, permit or other interest issued by the OGS.

¹⁸⁹ N.Y. PUBLIC LANDS LAW § 75.

¹⁹⁰ *Id.* § 75(7)(a).

¹⁹¹ N.Y. COMP. CODES R. & REGS. tit. 9, § 270-4.1.

¹⁹² N.Y. PUBLIC LANDS LAW § 75(7)(a).

- *Shellfish Cultivation Leases*: The New York State Department of Environmental Conservation (NYSDEC) Marine Resources Bureau may lease state-owned underwater lands for the cultivation of shellfish. The written approval of the OGS is required for the lease of land within 500 feet of the high water mark.¹⁹³
 - The following lands may not be leased by NYSDEC:
 - Lands where there is a presence of shellfish in sufficient quantity to support significant hand raking or tonging harvesting;
 - Lands where the leasing will result in a significant reduction to established commercial finfish or crustacean fisheries;
 - Lands where bay scallops are produced regularly on a commercial basis; and
 - Lands underwater of Gardiner's and Peconic bays and the tributaries thereof between the westerly shore of Great Peconic bay and an easterly line running from the most easterly point of Plum Island to Goff point at the entrance of Napeague harbor.
 - Lands under water of Gardiner's and Peconic bays in the county of Suffolk, except underwater lands within 1,000 feet of the high water mark, have been ceded to Suffolk County. Suffolk County may lease such lands for shellfish cultivation. Leases may only be issued within shellfish cultivation zones designated on maps approved by the county.¹⁹⁴
 - Within Suffolk County, the Town of Islip leases Town-owned Bay bottom for shellfish cultivation through its Bay Bottom Leasing Program.¹⁹⁵

C. King or Crown Grants

New York courts recognize some pre-revolutionary patents of underwater land to private parties.¹⁹⁶ The New York courts have found that these properties are only subject to the public right of navigation across the property. The public rights of fishing and hunting do not apply to these lands. TNC possesses one of these properties in Great South Bay.

D. Conservation Leasing

The OGS may make a grant of underwater land for conservation purposes. Such grants are limited to a county, city, town, or village.¹⁹⁷ The term conservation is not defined, so it is not clear whether shellfish restoration projects would qualify.

¹⁹³ N.Y. ENVTL. CONSERV. LAW § 13-0301(1).

¹⁹⁴ *Id.* § 13-0302.

¹⁹⁵ <http://www.townofislip-ny.gov/departments/environmental-control/shellfish-hatchery>.

¹⁹⁶ See, e.g., *DiCanio v. Inc. Vill. of Nissequogue*, 189 A.D.2d 223, 225, 596 N.Y.S.2d 74, 76 (App. Div. 1993).

¹⁹⁷ N.Y. PUBLIC LANDS LAW § 75(10).

Permitting Shellfish Restoration

A. Regulating Agencies

- New York State Department of Environmental Conservation (DEC)
- U.S. Army Corps of Engineers (USACE)

B. Permitting Process

Restoration projects will generally require permitting for use of environmental resources, sovereign submerged lands, and federal dredge and fill. To simplify the permitting process, NYSDEC and the USACE developed a joint application form.¹⁹⁸

- **Note:** The “Joint Application for Permit” is a joint application, not a joint permit. There is no designated lead agency. Applicants are required to submit complete applications to each agency involved.

Tidal Wetlands Permit:

Shellfish restoration projects in or adjacent to tidal wetlands will require a Tidal Wetlands Permit from the NYDEC. Tidal wetlands include all the salt marshes, non-vegetated as well as vegetated flats, and shorelines subject to tides.¹⁹⁹

- Projects taking place in coastal waters more than six feet below mean low water do not require a Tidal Wetlands Permit. Such projects, however, may require a Water Quality Certification, culture permit, or lease or other form of authorization depending on the scale and scope of the project.
- Placement of fill in a tidal wetland is generally classified as a major project. Notice of all major projects must be published in both the Environmental Notice Bulletin (ENB) and a designated local newspaper to allow for public review.

USACE Permitting:

The New York District of the USACE oversees federal dredge and fill permitting in New York’s coastal waters. Use of NWP 27 is authorized in New York with conditions.²⁰⁰

¹⁹⁸ Available at:

<http://www.nan.usace.army.mil/Portals/37/docs/regulatory/geninfo/Permitapplications/jointapp%20Feb%202013.pdf>

¹⁹⁹ N.Y. ENVTL. CONSERV. LAW § 25-0103(1).

²⁰⁰ http://www.nan.usace.army.mil/Portals/37/docs/regulatory/geninfo/natp/NWP_PN_30MAY12.pdf

- No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.
- NYDEC conditions for NWP 27 restrict its use to:
 - Restoration projects conducted with the oversight of a federal or state natural resource agency, or a County Soil and Water Conservation District.
 - Demonstration projects involving less than one acre of water.
 - Fill activities for shellfish restoration which do not results in an alteration of existing substrate and benthic habitat.
- In addition, there is a New York district regional condition for Essential Fish Habitat waters. Within such waters, any activity involving shellfish seeding, such as the placement of shell material or any other habitat development or enhancement, is restricted to shellfish species that are native to that waterbody.

C. Shellfish Restoration Permitting Snapshot

- Tidal Wetlands Permit: Shellfish restoration projects in or adjacent to tidal wetlands will require a Tidal Wetlands Permit.
 - Submit Joint Application for Permit to NYSDEC.
 - Education and research activities not involving material alteration of the area are exempt.
 - Projects at depths greater than six feet below mean high water are exempt from this permitting requirement.
- State-owned Lands Underwater Lease: Shellfish restoration projects on state-owned underwater lands will require a lease or other authorization from OGS.
 - Submit Joint Application for Permit to OGS.
- USACE Permitting:
 - NWP 27: Submit Joint Application for Permit to USACE. USACE will issue written approval to applicant if project qualifies.
 - Individual Permit: only needed if project does not fall within General Permit.

D. Research & Conservation Permitting

- NYDES has exempted some activities in tidal wetlands from permitting requirements.²⁰¹ Two exemptions are potentially applicable to shellfish restoration projects:

²⁰¹ N.Y. COMP. CODES R. & REGS. tit. 6, § 661.5(b).

- Establishment of wildlife or scientific preserves not involving material alternation of the area involved.
- Educational and research activities not involving any material alteration of the area involved.

E. Restoration in Closed Waters

No provision was found expressly prohibiting shellfish restoration projects in closed waters.

Protecting Existing Reefs and Restoration Projects

A. Reef Closure for Non-Public Health Concerns

No provisions were found authorizing the closure of shellfish beds for reasons other than public health concerns. DEC has authority to adopt regulations for closed areas for shellfish.²⁰²

B. Sanctuaries & Other Protected Areas

- Mashomack Preserve: 2,100-acre preserve 90 miles from New York with extensive salt marshes managed by The Nature Conservancy.
- According to NYSDEC personnel, some municipalities seed shellfish in uncertified waters to act as spawner sanctuaries. Other towns close town-owned underwater lands to harvest for management purposes and may re-open as “winter grounds” for harvest.

C. Other Tools for Protecting Shellfish Restoration Projects

- Fish pots and fish traps may not be used within 500 feet of an artificial reef.²⁰³

Oyster Management Generally

The wild oyster fishery is managed by the NYSDEC. This section does not address oyster aquaculture which is also regulated by NYSDEC. New York also regulates the following other shellfish: clams, mussels, scallops, surfclam, and ocean quahogs.

A. Oyster Harvesting

²⁰² See N.Y. ENVTL. CONSERV. LAW §§ 13-0323, 13-0325 and 13-0327.

²⁰³ *Id.* § 13-0343-a(1).

This section details the general requirements for oyster harvesting, including licenses, seasons, and other relevant details.

- Season:
 - Oysters can be taken throughout the year in state waters. Seasonal restrictions may apply to town-owned underwater lands
- License:
 - Commercial: A digger's permit is required to take shellfish from state underwater lands for commercial purposes.
 - Recreational/Personal Use: No permit required.
- Harvesting Requirements:
 - Shellfish can only be taken from areas certified as open by NYSDEC.
 - Oyster requirements:
 - 3" minimum size unless cultured or transferred under a permit from NYSDEC.
 - ½ bushel daily limit for recreational, no limit on commercial harvest.
 - No mechanical means allowed. Dredge with sail allowed on state land and in some towns.
 - Additional local restrictions may apply.
- Replanting/reseeding requirements: None found. Replanting using seeds from out of state requires a shellfish health certificate to ensure that the imported seed does not contain relevant shellfish pathogens and parasites.

B. Public, Private, and Natural Reef Distinctions

NYSDEC oversees regulation of public shellfish beds on state-owned underwater lands and private shellfish aquaculture leases.

NYSDEC also oversees the state's artificial reef program. Artificial reefs are defined as any "hard structure, deliberately placed in a marine or coastal water body for the purpose of imitating environmental conditions found on natural underwater rock outcroppings, shellfish reefs or coral reefs."²⁰⁴

Existing Shellfish Restoration Efforts

A. Government

- Billion Oyster Project: The New York City Department of Environmental Protection, NYSDEC, and the USACE are working with schools, businesses, nonprofits, and

²⁰⁴ *Id.* § 13-0360(1)(a).

individuals to grow oysters and restore oyster populations in New York Harbor.
<https://www.billionoysterproject.org>

- The New York and New Jersey Baykeeper partnered with the Hudson River Foundation, New York City Parks, Bronx River Alliance, and the New York Harbor Schools to install 125 yds³ of oyster reef in the lower Hudson River Estuary along with placement 100,000 oyster spat on shell in 2013.
<http://nynjbaykeeper.org/resources-programs/oyster-restoration-program/>
- The Hudson River Foundation has been conducting up to five oyster restoration feasibility studies using 50 m² oyster plots to determine the probability of oyster restoration success, if larger projects were to be implemented. These projects have been moderately successful. Many of the oysters have been silted in or carried away by currents. All the sites are in waters closed to harvest.
- The Nature Conservancy owns 14,000 acres of water bottom in Great South Bay. Multiple spawner sanctuaries for hard clams have been created. Thousands of clams from Connecticut and New York from both wild harvest and hatcheries have been used to seed these sanctuaries.
- Scallop restoration has occurred in Peconic Bay on the eastern shore. Cornell Cooperative Extension of Suffolk County and Long Island University have partnered on some projects in Peconic Bay and have received funding from Suffolk County, New York.
- Towns and municipalities have conducted restoration and enhancement projects for oyster, hard clams, and scallops.
- Shelter Island Sanctuaries are stocked with 20,000 to 30,000 clams per acre.
- New York City Parks and Recreation has established a pilot oyster reef in Soundview Park on the Bronx River.

B. Non-government and Private

- Oyster Restoration Research Partnership: The NY/NJ Baykeeper, Hudson River Foundation, USACE, New York/New Jersey Harbor Estuary Program, and the Urban Assembly New York Harbor School have been working on research projects to see where oyster reefs can be viably placed in New York Harbor and the Hudson River.
 - A Final Report for Phase I of the project can be found here:
http://nynjbaykeeper.org/wp-content/uploads/2013/05/Grizzle_et_al_2011_ORRP_Phase_1_Report_03_29_2012_Printed.pdf

- TNC has a restoration project in Peconic Bay on its Mashomack Preserve.
- SCAPE/Landscape Architecture won a design competition by Rebuild by Design/HUD after Hurricane Sandy to install oyster reefs off the shore of Staten Island to make the area more resilient.
<http://www.rebuildbydesign.org/project/scape-landscape-architecture-final-proposal/>

Mitigation

There are currently no programs in place for receiving mitigation credits for shellfish restoration in New York.

NEW JERSEY

Shellfish Management at a Glance

The following provides a brief reference to regulatory permitting programs applicable to shellfish restoration in New Jersey. Related permitting requirements are addressed in subsequent sections.

A. Coastal Program

- Responsible Agency: Department of Environmental Protection
- Relevance: Manages coastal resources and handles federal consistency reviews.
- Website: <http://www.nj.gov/dep/cmp/>

B. Submerged Lands

- Responsible Agency: Department of Environmental Protection, Division of Land Use Regulation
- Relevance: Oversees leasing of and permitting of activities on tidelands.
- Website: http://www.nj.gov/dep/landuse/tl_main.html

C. Fisheries Management

- Responsible Agency: Department of Environmental Protection, Division of Fish and Wildlife, Bureau of Marine Fisheries
- Relevance: Manages the state's fish and wildlife resources.
- Website: <http://www.nj.gov/dep/fgw/marhome.htm>

D. Shellfish Aquaculture

- Responsible Agency: Division of Fish and Wildlife, Bureau of Shellfisheries
- Relevance: Regulates shellfish aquaculture.
- Website: <http://www.state.nj.us/dep/fgw/shelhome.htm>

E. Shellfish Sanitation

- Responsible Agency: Department of Environmental Protection, Department of Marine Water Monitoring
- Relevance: Manages recreational and commercial shellfish harvesting for public health purposes in accordance with the National Shellfish Sanitation Program Guidelines.
- Website: <http://www.nj.gov/dep/bmw/>

Submerged Lands Permitting

Shellfish restoration projects may require leasing of state-owned submerged lands. This section discusses the role of state-owned submerged lands, availability of King's or Crown grants, and other aspects of leasing submerged lands for restoration projects.

A. State-Owned Submerged Lands

- New Jersey claims titled to the submerged lands from mean high tide to the 3-mile limit of the territorial sea, with the exception of lands previously sold by the state.
- Public Trust Rights: Public trust rights include navigation, commerce, fishing, and recreational uses, such as bathing, swimming sunbathing, and walking along shores.²⁰⁵
- Riparian Rights: No specific provisions found regarding riparian rights to shellfish resources in New Jersey.

B. Leasing Process

- *Generally:* A tidelands conveyance from the Department of Environmental Protection (DEP), Bureau of Tidelands Management, is required for activities on state owned tidelands.²⁰⁶ The DEP issues leases, licenses, and grants. A Tidelands License is a short-term rental agreement from the State of New Jersey for the use of its currently flowed tidelands.²⁰⁷ Smaller construction projects over currently flowed tidelands require a Tidelands License rather than a Lease. A Tidelands Lease is a long-term rental agreement from the State of New Jersey for the use of currently flowed tidelands. Leases are only issued for projects such as homes that have been constructed over water or large-scale development projects. Grants are generally for filled tidelands. A restoration project would likely require a tidelands license.
- *Aquaculture:* The DEP, through the Division of Fish and Wildlife's Bureau of Shellfisheries, leases tracts or parcels of shellfish grounds to be used for protecting, planting and harvesting shellfish. The Atlantic Coast and Delaware Bay Councils cover two sections of the state and have exclusive authority to lease water bottoms to individuals for the cultivation of shellfish, upon approval from the Commissioner of the DEP.

²⁰⁵ Neptune City v. Avon-by-the-Sea, 61 N.J. 296, 309 (1972).

²⁰⁶ N.J. STAT. ANN. § 12:3.

²⁰⁷ In New Jersey, tidelands are defined as "all lands that are currently and formerly flowed by the mean high tide of a natural waterway." The tidelands conveyances are only required for tidelands that are currently flowed by the mean high tide.

C. King or Crown Grants

No mention of King or Crown Grants found in New Jersey law.

D. Conservation Leasing

New Jersey does not have a mechanism in place to implement conservation leasing.

Permitting Shellfish Restoration

A. Regulating Agencies

- Department of Environmental Protection
- USACE

B. Permitting Process

Restoration projects will generally require permits for the use of environmental resources, sovereign submerged lands, and federal dredge and fill. As discussed above, a subaqueous lands conveyance is required for all activities on all state-owned tidal underwater lands.

Coastal projects in New Jersey are handled through the Department of Environmental Protection Division of Land Use Regulation (DLUR). The Bureau of Shellfisheries reviews permits submitted to the Land Use Regulation Program to ensure they comply with the Coastal Zone Management (CZM) rules on shellfish habitat protection.²⁰⁸ Coastal projects may qualify for permits-by-rule, general permits, or individual permits. Permits-by-rule do not require authorization from DLUR and likely do not apply to shellfish restoration projects.

General Permits

Coastal General Permit 29, “Habitat creation and enhancement and living shoreline activities,” may apply to restoration projects.²⁰⁹ The Coastal General Permit 29 authorizes habitat creation, restoration or enhancement and living shoreline activities necessary to implement a plan for the restoration, creation, enhancement, or protection of the habitat, water quality functions and values of wetlands, wetland buffers, and open water areas, which is sponsored or substantially funded by a federal or state agency or other entity. Refer to N.J.A.C. 7:7-7.29 for information on the requirements of this general permit.

²⁰⁸ N.J. ADMIN. CODE § 7:7E-3.2.

²⁰⁹ *Id.* § 7:7-7.29.

Individual Permit

If a proposed project does not meet the requirements of the coastal general permit, a Coastal Area Facility Review Act (CAFRA) permit, Waterfront Development permit, and/or a Coastal Wetlands permit may be required. The DEP provides a Jurisdictional Determination that gives basic information on whether or not a proposed project is regulated under the Waterfront Development Law, CAFRA, or the Wetlands Act of 1970.²¹⁰ Individual Permit applications must address and demonstrate compliance with each applicable component of the CZM rules for the specific site and regulated activity to be approved.²¹¹

The Waterfront Development law would likely be applicable to shellfish restoration projects. The Waterfront Development Law addresses new development proposed in and along tidal waterways, which are waters at or below the mean high water line. A Waterfront Development Permit covers development in a tidally flowed waterway in New Jersey, including dredging.²¹²

The Wetlands Act of 1970 may be applicable if projects are located in coastal wetlands.²¹³ The Wetlands Act requires the DEP to regulate development in mapped coastal wetlands and to prevent their deterioration and destruction by regulating any activities including dredging and filling.

A CAFRA permit would likely not apply, as those generally affect areas landward of the mean high tide line.

USACE Permitting:

The Philadelphia District and the New York District of the USACE oversee federal dredge and fill permitting in New Jersey. New Jersey allows for use of NWP 27 (aquatic habitat restoration) with the following conditions: 1) A PCN must be submitted to the Corps of Engineers under certain circumstances. A complete copy of any PCN to the Corps of Engineers must also be forwarded directly to the National Marine Fisheries Service Habitat Conservation Division. The applicant must provide evidence that this has been

²¹⁰ See: <http://www.nj.gov/dep/landuse/forms.html>

²¹¹ N.J. ADMIN. CODE § 7:7E.

²¹² N.J. STAT. ANN.12:5-3.

²¹³ The Act defines wetlands as “any bank, marsh, swamp, meadow, flat or other low land subject to tidal action in the State of New Jersey along the Delaware bay and Delaware river, Raritan bay, Barnegat bay, Sandy Hook bay, Shrewsbury river including Navesink river, Shark river, and the coastal inland waterways extending southerly from Manasquan Inlet to Cape May Harbor, or at any inlet, estuary or tributary waterway or any thereof, including those areas now or formerly connected to tidal waters whose surface is at or below an elevation of 1 foot above local extreme high water, and upon which may grow or is capable of growing [listed vegetation].” *Id.* § 13:9A-2.

accomplished. 2) Any activity involving shellfish seeding, such as the placement of shell material or any other habitat development or enhancement, is restricted to shellfish species that are native to that water body.²¹⁴

Any projects not qualifying for a nationwide permit will have to submit an Individual Permit.

C. Shellfish Restoration Permitting Snapshot

- Coastal General Permit 29: Apply to DEP-Division of Land Use Regulation for Coastal General Permit 29.
 - If Coastal General Permit 29 does not apply, a Waterfront Development Individual permit and/or a Coastal Wetlands permit will be required. Individual Permit applications must address and demonstrate compliance with CZM rules.
- Tidelands conveyance if taking place on state-owned tidal underwater lands.
- USACE Permitting:
 - Apply to USACE for NWP 27, fulfilling regional conditions
 - Individual Permit: only needed if project does not fall within NWP 27.
 - A New Jersey Coastal Zone Management Act Consistency Statement Form must be submitted to NJ DEP and USACE.

D. Research & Conservation Permitting

New Jersey does not have separate permitting provisions for research or conservation activities.

E. Restoration in Closed Waters

DEP does not allow restoration in closed waters.

Protecting Existing Reefs and Restoration Projects

A. Reef Closure for Non-Public Health Concerns

New Jersey does not have a voluntary reef closure policy.

²¹⁴ See: http://www.nap.usace.army.mil/Portals/39/docs/regulatory/nwp/reg_cond_NJ_16Mar2012.pdf

B. Sanctuaries & Other Protected Areas

Pursuant to its authority under the Tidelands Act, DEP created the Sedge Islands/Island Beach State Park Marine Conservation Zone. The designation restricts personal watercraft from knee-deep waters within 300 feet of the Sedge Islands and backbay area of Island Beach State Park while still allowing traditional boating, kayaking, fishing and hunting activities to continue.²¹⁵

C. Other Tools for Protecting Shellfish Restoration Projects

The Bureau of Shellfisheries reviews permits submitted to the Land Use Regulation Program to ensure they comply with the Coastal Zone Management rules on shellfish habitat protection. The shellfish habitat rules define habitat area and regulate construction and dredging in shellfish habitat areas.²¹⁶ The shipwreck and artificial reef habitat special area rule protects reefs from activities other than finfishing, shellfishing, and scuba diving.²¹⁷

Oyster Management Generally

The wild oyster fishery is managed by the DEP's Division of Fish and Wildlife. This section does not address oyster aquaculture, which is also regulated by the DEP's Division of Fish and Wildlife.

A. Oyster Harvesting

This section details the general requirements for oyster harvesting, including licenses, seasons, and other relevant details.

- Season:
 - Shellfish harvesting is prevented before sunrise and after sunset. Shellfish harvest is also prohibited on Sundays except in the seasonally approved areas of the Navesink and Shrewsbury rivers, when harvesting is permitted between Nov. 1 and April 30.
- Licenses:
 - License is required for harvesting of all species of benthic mollusks, including, but not limited to, hard and soft clams, surf clams, oysters, bay scallops and mussels. Licenses are available at [shellfish license agent](#) and [online](#).

²¹⁵ See: http://marineprotectedareas.noaa.gov/helpful_resources/states/new_jersey.html

²¹⁶ N.J. ADMIN. CODE § 7:7E-3.2.

²¹⁷ *Id.* § 7:7E-3.13.

- General Harvest Requirements:
 - Dredging is prohibited. Harvesting shellfish on public grounds is restricted to the use of hand implements.
 - Shells taken in the process of harvesting oysters must be culled from the live oysters and returned immediately to the area from where they were taken.
 - Specific size limits, depending on waterbody from which oysters are taken.
- Recreational Harvest Requirements:
 - No holder of any recreational shellfish license may take more than a total of 150 shellfish (in aggregate) per day.

B. Public, Private, and Natural Reef Distinctions

The Division of Fish and Wildlife oversees regulation of natural oyster beds and private shellfish aquaculture leases. The Bureau of Marine Fisheries within DEP's Division of Fish and Wildlife manages New Jersey's artificial reef program.

Existing Shellfish Restoration Efforts

A. Government

In 2003, the New Jersey Department of Environmental Protection Division of Fish and Wildlife planted shell in the lower Bay along the western shore of the Cape May peninsula. In addition 16,000 bushels of newly set oyster seed were transplanted upbay in Bennies Sand by the NJDEP, an area that has supported the majority of the 1990s oyster harvest. This was a pilot scale project that helped to facilitate a partnership with the U.S. Army Corps of Engineers from 2005 through 2008 in Delaware Bay.

In 2005, the USACE planted 286,000 bushels of shell on approximately 180 acres of existing oyster beds in New Jersey and Delaware in Delaware Bay. In 2006, the USACE Philadelphia District planted 500,193 bushels of shell on approximately 275 acres of existing oyster beds in New Jersey and Delaware in Delaware Bay. In 2007, the U.S. Army Corps of Engineers, Philadelphia District planted 554,790 bushels of shell on approximately 253 acres of existing oyster beds in both New Jersey and Delaware in Delaware Bay. In total 2.2 million bushels of shell have been planted on 1,350 acres of existing oyster reefs in Delaware Bay since 2003. The project partners include U. S. Army Corps of Engineers Philadelphia District, New Jersey Department of Environmental Protection, and the Delaware Department of Natural Resources and Environmental Control.

Since 2002 the New Jersey Department of Environmental Protection Division of Fish and Wildlife planted oyster and hard clam shell and/or seed on 209 acres of existing shell in the following locations Barnegat Bay, Great Bay, Great Egg Harbor River, Mullica River, and

Navesink River oyster and hard clam populations. In addition oysters and hard clam shell and/or seed were planted to restore 12 acres of shellfish reefs in Barnegat Bay.

B. Non-government and Private

- In 2005, the Bureau of Shellfisheries was awarded a grant from the FishAmerica Foundation and NOAA Restoration Center to initiate the Mullica River Oyster Restoration Project. <http://www.state.nj.us/dep/fgw/artmullica07.htm>
- ReClam the Bay is a shellfish gardening program that propagates oysters and clams for distribution around Barnegat Bay. <http://reclamthebay.org/>
- NY/NJ Baykeeper works to restore oyster beds in New York and New Jersey.
 - Operated an oyster gardening program in New York and research projects in New Jersey. <http://nynjbaykeeper.org/restore/#more-80>
 - <http://nynjbaykeeper.org/resources-programs/oyster-restoration-program/>

Mitigation

Mitigation is required for damage to shellfish habitat by Coastal Zone rules.²¹⁸ DEP may require compensation and/or mitigation to address damage to state property and impacts on those lands, including environmental impacts associated with projects that require permits or approvals.

²¹⁸ *Id.* § 7:7E-3.2

NORTH CAROLINA

Shellfish Management at a Glance

The following provides a quick reference to relevant state laws and regulatory programs impacting shellfish management and restoration projects in North Carolina. Related permitting requirements are addressed in subsequent sections.

A. Coastal Program

- Responsible Agency: N.C. Dept. of Environment and Natural Resources – Division of Coastal Management (NCDENR-DCM)
- Relevance: Manages permitting of activities within the coastal area.
 - Coastal Area Management Act N.C.G.S.A. § 113A-101, et seq.
- Website: <http://www.nccoastalmanagement.net/>

B. Submerged Lands

- Responsible Agency: N.C. Dept. of Environment and Natural Resources – Division of Marine Fisheries (NCDENR-DMF)
- Relevance: Maintains records of the recognized submerged lands claims.
- Website: <http://portal.ncdenr.org/web/mf/commercial-fishing-license-information>

C. Fisheries Management

- Responsible Agency: N.C. Dept. of Environmental and Natural Resources – Division of Marine Fisheries (NCDENR-DMF)
- Relevance: Establish and enforce shellfish harvest rules, habitat protection, conduct shellfish mapping and monitoring, shellfish enhancement and restoration activities, and develop fishery management plans.
 - Fisheries Reform Act of 1997
- Website: <http://portal.ncdenr.org/web/mf/>

D. Shellfish Aquaculture

- Responsible Agency: North Carolina Dept. of Environmental and Natural Resources, NC Division of Marine Fisheries (NCDENR-DMF)
- Relevance: Issues aquaculture operation permit for shellfish aquaculture operations, as well as any marine or estuarine species.
- Website: <http://portal.ncdenr.org/web/mf/shellfish-lease-franchise-programs>

E. Shellfish Sanitation

- Responsible Agency: North Carolina Dept. of Environmental and Natural Resources – Division of Marine Fisheries (NCDENR-DMF) – Shellfish Sanitation and Recreational Water Quality Section

- Relevance: Oversees shellfish sanitation inspections and manages shellfish harvesting in accordance with the National Shellfish Sanitation Program.
- Website: <http://portal.ncdenr.org/web/mf/shellfish-sanitation>

Submerged Lands Permitting

This section discusses the role of state-owned submerged lands, the availability of King's or Crown grants, and other aspects of leasing submerged lands for restoration projects.

A. State-Owned Submerged Lands

- State-Owned Submerged Lands: all lands below the mean high tide line are held in trust for the public benefit.
- Public Trust Rights: navigation, swimming, hunting, fishing, recreation, and “the right to freely use and enjoy the State's ocean and estuarine beaches and public access to the beaches.”²¹⁹
- Riparian Rights to Shellfish: Shellfish leases may include specific conditions stipulating that the project not interfere with riparian rights of neighboring properties.²²⁰ A 15-foot buffer, known as a riparian access line, must be left between any structure and the adjacent owner's property line. Water bottom and water column leasing may not interfere with the riparian rights of others.²²¹

B. Leasing of Submerged Lands

- *Generally*: North Carolina does not have general provisions for leasing of water bottoms related to shellfish restoration. But the project may require a shellfish lease, discussed below. In addition, NCDENR reviews activities in public trust waters during the coastal permitting process discussed in the next section.
- *Shellfish Lease & Franchise Program*: The state may lease areas for shellfish cultivation or perpetual fisheries franchises.²²² The state may also lease the water

²¹⁹ N.C. GEN. STAT. § 1-45.1.

²²⁰ See 15A N.C. ADMIN. CODE 7H.2705(q). The sill shall not interfere with the exercise of riparian rights by adjacent property owners, including access to navigation channels from piers or other means of access.

²²¹ *Id.* 30.0201(4). Cultivation of shellfish in the leased area will not impinge upon the rights of riparian owners.

²²² N.C. GEN. STAT. § 113-206.

column for aquaculture activities.²²³ Shellfish leases are granted by the NCDENR-DMF.

- In practice, laws related to leasing are limited to leasing for shellfish production and harvest. A conservation group could obtain a lease to conduct shellfish restoration, but would have to adhere to shellfish lease conditions, including a minimum amount of planting cultch and/or seed, and shellfish harvest and sale annually. In some cases, the Division has partnered with conservation groups to restrict harvest on restoration sites on a temporary basis. Permits from Division of Coastal Management and the USACE are required, as discussed below.
- Detailed information on Shellfish Bottom Leases and application materials can be found at: <http://portal.ncdenr.org/web/mf/shellfish-lease-franchise-programs>.

B. King or Crown Grants

In limited circumstances, private parties may own submerged lands generally by a grant from the king or early state officials, commonly referred to as a king's grant. In North Carolina, private parties claiming ownership of any submerged land underlying coastal navigable waters or any right to a fishery in those waters were required to register that claim with the State prior to 1970. All claims have been resolved and new claims are not granted.

- Where a private party can demonstrate ownership of the submerged bottom or a perpetual fishery franchise, that person may hold exclusive rights to harvest oysters in that area.²²⁴ Perpetual fishery franchises are not transferrable.²²⁵ These claims were also registered by 1970. No new claims are granted.

D. Conservation Leasing

North Carolina does not have regulations specifically addressing conservation leasing of submerged bottom. However, the state may lease submerged bottom and water columns for shellfish cultivation so long as the lease is in the public interest and complies with all lease siting, planting, and production criteria.²²⁶

²²³ *Id.* § 113-202.1. Although state holds title to lands under navigable waters in public trust for use and benefit of all its citizens, state may permit exclusive use of such lands by private individuals, *i.e.*, a franchise, for specific purposes, such as shellfishing. *Bryant v. Hogarth*, 127 N.C. App. 79 (1997).

²²⁴ *State ex rel. Rohrer v. Credle*, 369 S.E.2d 825 (N.C. 1988).

²²⁵ N.C. GEN. STAT. § 113-202.2.

²²⁶ *Id.* § 113-202. Per agency reviewer, all lease site criteria and fees would apply as would planting and production.

Permitting Shellfish Restoration

A. Regulating Agencies

- North Carolina Department of Environment and Natural Resources (NCDENR) (Lead Agency)
 - Division of Coastal Management (DCM)
 - Division of Water Resources (DWR)
- U.S. Army Corps of Engineers (USACE)

B. Permitting Process

Oyster restoration projects are permitted under the Coastal Area Management Act (CAMA) in North Carolina. The CAMA is the primary state law aimed at protecting coastal resources, including shellfish habitat. All development in this region requires a permit from the North Carolina Department of Environment and Natural Resources, Division of Coastal Management (NCDENR-DCM). Development is defined as any activity in a duly designated area of environmental concern involving, requiring, or consisting of the construction or enlargement of a structure; excavation; dredging; filling; dumping; removal of clay, silt, sand, gravel or minerals; bulkheading, driving of pilings; clearing or alteration of land as an adjunct of construction; alteration or removal of sand dunes; alteration of the shore, bank, or bottom of the Atlantic Ocean or any sound, bay, river, creek, stream, lake, or canal; or placement of a floating structure in an area of environmental concern identified in G.S. 113A-113(b)(2) or (b)(5).²²⁷

In addition to statewide requirements, local governments must develop local land use plans addressing coastal development, and these plans must be consistent with the policies of the CAMA.²²⁸ Development must comply with the local land use plans. NCDENR-DCM oversees CAMA permitting.

The Major Permit Process:

Some projects taking place in North Carolina's Areas of Environmental Concern (the twenty coastal counties) require a CAMA major permit from the NCDENR-DCM, including oyster restoration projects. The agency encourages pre-application meetings with permit applicants.²²⁹

- DCM MP-1 - Every major development must complete the DCM MP-1 general application.

²²⁷ N.C. GEN. STAT.. § 113A-103(5)(a).

²²⁸ *Id.* § 113A-109; 15A N.C. ADMIN. CODE 7B.0702.

²²⁹ See: <http://portal.ncdenr.org/web/cm/major-permits> explaining the NC CAMA Major permit process and what is required.

- DCM MP-4 - Structures within public trust areas require the DCM MP-4 permit in addition to the general permit.²³⁰

General Permits:

There are no general permits available for shellfish restoration projects. However, the placement of shell material specifically for the purpose of oyster culture is not considered a filling project under the regulations addressing major permits.²³¹ This exception may be useful in permitting oyster reef restoration activities.

Other Permitting Considerations:

In ocean hazard areas (mainly beachfront), a hazard notification form may be required. Projects larger than 1 acre of construction activities may require additional stormwater permitting. However, shellfish restoration projects are unlikely to take place in ocean hazard areas and no shellfish restoration projects have been proposed in these areas to date.

USACE Permitting:

The Wilmington District administers the USACE regulatory permit program for waters and wetlands in North Carolina. USACE permitting components are incorporated into the CAMA major permit. NWP 27 for habitat restoration is available in North Carolina. However, the Wilmington District also supports a State Programmatic General Permit (SPGP or PGP), developed in cooperation with the state, the North Carolina Division of Coastal Management, Coastal Area Management Act (CAMA) permit program. This Regional General Permit, referred to as GP 291, is unique to North Carolina and is commonly referred to as the 291 process. Typically, the USACE will authorize shellfish restoration projects using the 291 general permit. Project proponents should contact the Wilmington District to determine whether their project will qualify for the 291 general permit.

C. Shellfish Restoration Permitting Snapshot

- CAMA Permit: Oyster restoration projects will require a CAMA Major Permit.
 - Exemption: The placement of shell material specifically for the purpose of oyster culture is not considered a filling project under the regulations addressing major permits.
 - CAMA Major Development Permit

²³⁰ Permit applications are available at: <http://dcm2.enr.state.nc.us/Permits/apps.htm>

²³¹ 15A N.C. ADMIN. CODE 7J.0.

- Form DCM MP-1 General Application
 - Form DCM MP-2 Excavation and Fill (if project involves fill)
 - Form DCM MP-4 Structures in public trust waters (if project involves a breakwater or non-rock groin such as a sheetpile)
- USACE 291 General Permit

D. Research & Conservation Permitting

- Research Sanctuaries: NC DENR-DMF can issue research sanctuary status on a temporary basis only for the purpose of conducting research. For the purpose of protecting a constructed oyster reef, DMF can designate an area as a shellfish management area through proclamation to restrict harvest on a time-limited basis.
 - These reefs are not typically open to public shellfish harvest for a set period of time (usually not exceeding three years).
 - The sites are used to conduct research, improve oyster populations, or to enhance water quality.
 - Signage would most likely be installed to keep oystermen from harvesting this area.
 - Fishing in this area would typically be allowed. In addition, the site is unlikely to be located in the most productive oyster waters.
 - DMF in the past has discouraged the closing of open shellfish harvest waters for restoration, and works with groups to find closed harvest waters to locate projects in.
- Scientific or Educational Activity Permit:
 - Relates to shellfish harvesting requirements.
 - Must be a qualifying scientific or educational institution to apply.
 - Issued by Division of Marine Fisheries.

E. Restoration in Closed Waters

Oyster restoration can occur in closed waters. It has not been limited by public health concerns.

Protecting Existing Reefs and Restoration Projects

A. Reef Closure for Non-Public Health Concerns

Other than designation as a shellfish sanctuary through the shellfish management area, the NCDENR-DMF may also close artificial reefs from harvest.²³² In addition, the agency may close areas to the taking of oysters, clams, scallops and mussels in order to protect the shellfish populations for management purposes or for public health reasons.²³³

B. Sanctuaries and Other Protected Areas

- Shellfish Management Areas & Sanctuaries

North Carolina employs shellfish management areas to provide additional shellfish protection, overseen by the Fisheries Director of the NCDENR-DMF.²³⁴ To be designated as a shellfish management area, the area must possess appropriate conditions for shellfish growth, and the manager must use the property: (1) to produce commercial quantities of shellfish, (2) to produce seed for transplanting, or (3) to **serve as sanctuary** to increase spawning and disease resistance or to prevent predation. Shellfish restoration projects may qualify for sanctuary designation under this provision.

Once designated as a shellfish management area, certain protections apply, including a prohibition on the use of trawl net, long haul seine net, and swipe net in these areas. Additionally, no shellfish may be removed without a specific directive from the Fisheries Director when the area is closed and posted.²³⁵ The Fisheries Director can prohibit or limit fishing in and around any artificial reef or research sanctuary.²³⁶

Seed oyster management areas are defined as an “open harvest area that, by reason of poor growth characteristics, predation rates, overcrowding or other factors, experiences poor utilization of oyster populations for direct harvest and sale to licensed dealers and is designated by the Marine Fisheries Commission as a source of seed for public and private oyster culture.”²³⁷ Use of a trawl net, long haul seine, or swipe net in any designated Seed Oyster Management Area is prohibited.²³⁸ Hand harvest of legal sized oysters is allowed

²³² *Id.* 3I.0109.

²³³ *Id.* 3K.0101(b).

²³⁴ *Id.* 03K .0103 and 03K .0208.

²³⁵ Per agency reviewer, shellfish management areas usually are designated for a very specific purpose – and management is specific to address the requirement of the designation – receiving area for shellfish that would be destroyed by a dredging project for example – stays closed to harvest to allow spawning or depuration.

²³⁶ 15A N.C. ADMIN. CODE 3I.0109.

²³⁷ *Id.* 03I.0101(1)(h). Existing seed oyster management areas are listed in the N.C. Regulations at 15A NCAC 3R.0116.

²³⁸ *Id.* 03K .0208.

during the open season. Private leaseholders with a permit are allowed to relay both legal and sublegal oyster to their lease during the closed season.

C. Other Tools for Protecting Shellfish Restoration Projects

- Coastal Habitat Protection Plan

As part of the Fisheries Reform Act of 1997, the Coastal Resources, Marine Fisheries and Environmental Management commissions must develop plans to protect and restore North Carolina's commercial and recreational fisheries. The plan includes habitat protections such as wetlands, nursery grounds, and shellfish beds. The plan was last revised in 2010 and now includes considerations of sea level rise, climate change, and management needs. One goal of the plan is to expand habitat protections through the creation of subtidal oyster reef no-take sanctuaries.²³⁹ The 2010 draft plan is available at NCDENR-DMF website (<http://portal.ncdenr.org/web/mf/59>).

- Protections from Geophysical Explorations & Energy Development

During geophysical explorations, no explosives can be discharged within 300 feet of any oyster reef or bed, including any state-owned natural reefs, without written permission signed by the owner and/or lessee of the reef or bed, approved by the NCDENR.²⁴⁰

Siting of energy facilities and related structures should avoid causing significant adverse impacts to offshore reefs, oyster sanctuaries, and artificial reefs.²⁴¹

- Artificial reef liability protections

North Carolina artificial reef law allows ownership of reef materials to be conveyed to the permittee and limits liability for use of the materials once conveyed to the permittee.²⁴² Artificial reefs are managed by NCDENR-DMF. North Carolina's policy is that the state should be the only permit holder for North Carolina's artificial reefs to ensure acceptance of long term legal, financial, and maintenance responsibilities.

Oyster Management Generally

The wild oyster fishery is managed by the NCDENR-DMF. This section does not address oyster aquaculture, which is also regulated by NCDENR-DMF.

²³⁹ 2010 North Carolina Coastal Habitat Protection Plan Draft, Goal 3, page vii, available at: http://www.onencnaturally.org/pages/CHPP_2010_Revision.html

²⁴⁰ 15A N.C. ADMIN. CODE 5C.0121.

²⁴¹ *Id.* 7M.0403(f)(10).

²⁴² NCDENR-DMF Artificial Reef Master Plan (1988). This plan is currently being updated by DMF.

A. Oyster Harvesting

- Season: October 15 to March 31. However, season opening, closing, harvest hours and daily limits can be modified by proclamation.
- Licenses:
 - Commercial: Commercial Shellfish License
 - Recreational: No license needed
- Harvesting Requirements:
 - Tongs, rakes, or by hand
 - Rakes bigger than 12 inches wide or weighing more than six pounds are prohibited.
 - Dredges in Pamlico Sound
 - Harvesting within 150 feet of a public pier that the North Carolina Department of Marine Fisheries (NCDENR-DMF) has placed cultch below is prohibited.²⁴³
 - Size and Bag Limits: Recreational: 3” size, 1 bushel per day and a maximum of 2 bushels per vessel/day; Commercial: numerous rules and proclamation conditions including season, gear, harvest and time limits, varying by area and harvest method.
- Maps of shellfish closed waters can be found at:
 - <http://portal.ncdenr.org/web/mf/proclamations-polluted-areas>
- Oyster Fishery Management Plan
 - Last updated June 2008, scheduled for update 2014-2016
 - Available at: <http://portal.ncdenr.org/web/mf/fmps-under-development>
- Additional Resources:
 - North Carolina Marine Fisheries Commission Rules, <http://portal.ncdenr.org/web/mf/rules-and-regulations>

B. Public, Private, and Natural Reef Distinctions

North Carolina does not distinguish the regulation of public, private, and natural oyster reefs other than in the leasing process for aquaculture, discussed above. Artificial reefs are managed by NCDENR-DMF. The artificial reef plan, last issued in 1988, is currently under review by the agency.

²⁴³ 15A N.C. ADMIN. CODE 3K.0102; N.C. GEN. STAT. § 113-207.

Existing Shellfish Restoration Efforts

A. Government

- State Oyster Sanctuaries

The NCDENR-DMF has established and developed 12 Oyster Sanctuaries encompassing 4.6 – 58.2 acres each, totaling 228.5 acres, of which approximately 141.3 acres have substrate for oyster attachment. The sanctuaries are located around Pamlico Sound and constructed of multiple, high profile mounds using mostly Class B Riprap (fossil stone) and the use of shell and seeded shell as part of the research needs.²⁴⁴ The placement of sanctuaries by NCDENR-DMF has primarily focused on Pamlico Sound due to the large historic loss of oyster reefs in this area, as well as the sizeable amount of oysters in areas closed to harvest south of Pamlico Sound by reason of pollution. For a discussion of oyster sanctuary designation and protections, see Sanctuaries & Other Protections above.

- Oyster Recycling Program

In 2005 and 2006, legislative actions to support Coastal Habitat Protection Plan implementation accelerated the acquisition of cultch material. Those actions included funding for a dedicated shell recycling coordinator, additional public recycling sites, and some important legislation. The shell recycling program had started in 2004 using local coordinators to collect discarded shells from individuals and businesses. Since 2005, contributions have increased each year to approximately 30,000 bushels in 2013. The following statutes also encouraged voluntary shell recycling:

- General Statute 105-130.48: A taxpayer who donates oyster shells to the Division of Marine Fisheries is eligible for a state tax credit of one dollar (\$1.00) per bushel of oyster shells donated. This tax credit expired Dec. 31, 2013..
- General Statute 130A-309.10(f): No person shall knowingly dispose of oyster shells in solid waste landfills.
- General Statute 136-123(b): No landscaping or highway beautification project undertaken by the State may use oyster shells as a ground cover. If the State comes into possession of oyster shells, it shall make them available to the NCDENR-DMF for use in any oyster bed revitalization programs or any other program that may use the shells.

²⁴⁴ Per agency reviewer, the use of shell and seeded shell has been minimal as early research showed that most sanctuary areas were not larval limited so the addition of seeded shell was not worth the added expense. For the sanctuaries, the addition of shell on high profile base materials did not seem warranted as well.

B. Non-government and Private

- Non-Profit Organizations

Cultch planting sites have been installed in the central and southern region of the state for years by the NCDENR-DMF, and more recently, by various non-profit organizations, a university, and one coastal community. These sites are designated as Research Sanctuaries²⁴⁵ or Shellfish Management Areas²⁴⁶ under the proclamation authority of the Fisheries Director. The North Carolina Coastal Federation has sponsored many of the sites. Since 1998, the North Carolina Coastal Federation has partnered with the NCDENR-DMF to restore over 84 acres of oyster reef habitat at 24 sites along the entire coast, including a NOAA American Recovery and Reinvestment Act funded project that resulted in 55 acres at 9 sites.²⁴⁷

In addition, the St. James Plantation (golf course community) has built two large reefs (research sanctuaries) in Brunswick County that now serve as spat monitoring stations; the University of North Carolina at Wilmington has research sanctuaries in Spicer Bay/Kings Creek and Everett Bay; Pender Watch and TNC have sponsored two sites in closed shellfish harvesting waters. Permits were required for all these projects.

Mitigation

North Carolina has a mitigation program that focuses on wetlands and nutrient offsets.

- Ecosystem Enhancement Program: The Ecosystem Enhancement Program is a statewide non-regulatory program within the NCDENR for “the acquisition, maintenance, restoration, enhancement, and creation of wetland and riparian resources that contribute to the protection and improvement of water quality, flood prevention, fisheries, wildlife habitat, and recreational opportunities.”²⁴⁸ The program also coordinates a banking program for wetland and nutrient offsets.

Some oyster reef mitigation has been done for impacts from federal projects (military operations, dredged navigation channels).²⁴⁹

²⁴⁵ 15A N.C. ADMIN. CODE 3I.0109.

²⁴⁶ *Id.* 3K.0103.

²⁴⁷ Because of the partnership with DMF the NOAA ARRA sites were on sites permitted to NC DMF by DCM and/or USACE.

²⁴⁸ N.C. GEN. STAT. § 143-214.8.

²⁴⁹ Per agency reviewer.

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Shellfish Management At a Glance

The following provides a brief reference to regulatory permitting programs applicable to shellfish restoration in Oregon. Related permitting requirements are addressed in subsequent sections.

A. Coastal Management Program

- Responsible Agency: Department of Land Conservation and Development
- Relevance: Manages coastal resources and handles federal consistency reviews.
- Website: <http://www.oregon.gov/LCD>

B. Submerged Lands

- Responsible Agency: Department of State Lands
- Relevance: Oversees leasing of and permitting of activities on submerged lands and tidelands.
- Website: <http://www.oregon.gov/dsl>

C. Fisheries Management

- Responsible Agency: Department of Fish and Wildlife
- Relevance: Manages the state's fish and wildlife resources. The Marine Resources Program within the Department has oversight and management responsibilities for native Olympia oysters and red abalone.
- Website: <http://www.dfw.state.or.us/fish/>

D. Shellfish Aquaculture

- Responsible Agency: Department of Agriculture or Port Districts
- Relevance: Regulates clam and oyster aquaculture. Administers commercial mariculture leases on state-owned properties. Oregon port districts may issue commercial shellfish leases on lands under their jurisdiction.
- Website: <http://www.oregon.gov/oda/Pages/default.aspx>

E. Shellfish Sanitation

- Responsible Agency: Division of Health and the Department of Agriculture
- Relevance: The Division of Health issues advisories for public health purposes in accordance with the National Shellfish Sanitation Program Guidelines. The Department of Agriculture conducts monitoring and testing of shellfish.
- <http://public.health.oregon.gov/Pages/Home.aspx>

Submerged Lands Permitting

Shellfish restoration projects may require leasing of state-owned submerged lands. This section discusses the role of state-owned submerged lands, availability of King's or Crown grants, and other aspects of leasing submerged lands for restoration projects.

A. State-Owned Submerged Lands

- The state owns the majority of land lying below the high water mark extending to the territorial sea boundary. Ownership by public bodies, such as port districts, of submerged and submersible lands within estuaries and bays is common. *A relatively small amount of submerged and submersible land is in private ownership in Oregon. Submerged lands* are defined as those lands lying below the line of ordinary low water, while *submersible lands* lie between low water and high water.
 - Boundaries of state owned waterways
 - Pacific Ocean: mean high tide to 3 miles out
 - Tidally influenced waters: to mean high tide
- Public Trust Rights: navigation, fishing, commerce, and recreation on submersible and submerged lands.
- Riparian rights: No specific provisions found regarding riparian rights to shellfish resources in Oregon.

B. Leasing Process

- *Generally*: Prior to beginning activities on state-owned submerged and submersible land, a waterway lease, license, easement, registration, or short-term use agreement must be obtained from Department of State Lands.²⁵⁰
 - Any lease, easement, authorization, etc. must conform to local land use laws. Approval by a local planning authority is required prior to DSL lease or other authorization. Proceeds from all authorizations go into the Common School Fund.
- *Aquaculture*: A shellfish plat lease from the Oregon Department of Agriculture, Natural Resources Program Area is required prior to commercially growing shellfish.²⁵¹ Shellfish aquaculture on port-owned land would not require a Department of Agriculture lease.

²⁵⁰ <http://www.oregon.gov/dsl/LW/Pages/forms.aspx>

²⁵¹ OR. ADMIN. R. 622.210-220. Application instructions available at: <http://www.oregon.gov/ODA/shared/Documents/Publications/NaturalResources/InformationSheetfortheShellfishPlatApplication.pdf>

- The Department of Agriculture conducts the testing, analysis, and monitoring to designate Commercial Shellfish Growing Areas along the Oregon coast²⁵²
- Annual cultivation fees and use taxes are assessed in lieu of property taxes, lease fees or rental charges for the use of lands upon which oysters, clams or mussels are grown and harvested.²⁵³

C. King or Crown Grants

When Oregon was admitted to the Union in 1859, it became the owner of all land underlying both the navigable waterways and tidally influenced waters within its borders as a part of its sovereignty. Private ownership preceding statehood was not superseded by the state.

D. Conservation Leasing

No specific provisions authorizing the leasing of submerged lands for conservation were found. However, the Department may enter into conservation easements with certain entities for long term protection of the resource.

Permitting Shellfish Restoration

A. Regulating Agencies

- USACE
- Department of State Lands (DSL)
- Local Government

B. Permitting Process

Restoration projects will generally require permitting for use of environmental resources, sovereign submerged lands, and federal dredge and fill. Certain exemptions apply to restoration projects and applicants should first check with the agency to see if any of these exemptions may apply.

To simplify permitting, the state has combined these needs into one Joint Permit Application (JPA) under the wetland and waterway regulatory program called the Removal-Fill Permit, although separate state authorizations may still be necessary. In some cases the JPA form may not be necessary and a simpler form can be submitted. The Oregon Removal Fill Law requires those who plan to “remove or fill” material within

²⁵² OR. ADMIN. R. 603-082-0050.

²⁵³ *Id.* 603-082-0080.

“waters of the state” to obtain a permit from the Department of State Lands.²⁵⁴ As part of the permitting process, compensatory mitigation may be required for projects that impact waters of the state (e.g., tidal waters), including fish, wildlife or habitat resources, such as eelgrass and shellfish

Depending on the specific actions involved in the restoration, a land-use permit by the local jurisdiction (city or county) may be required. Projects that require these permits must be compatible with the local comprehensive plans.

Removal-Fill Permit Application:

If required, the Removal-Fill Joint Permit Application (JPA) form may be used for projects in state waters that require the review of the USACE and the Department of State Lands.²⁵⁵ The application must be submitted to both agencies, as they administer separate permit programs.

USACE Permitting:

The Portland District of the USACE oversees federal dredge and fill permitting in Oregon. The Removal-Fill application process combines the federal wetlands permitting needs into a joint application. Oregon allows use of USACE NWP 27 (aquatic habitat restoration) with conditions. Any restoration work done under NWP 27 requires pre-construction notification in most circumstances.

- State Conditions for NWP 27 include: 1) Prior to dredging, sediment characterization regarding size, composition, and potential contaminants is conducted prior to dredging and the material is suitable for in-water disposal per the Sediment Evaluation Framework for the Pacific Northwest, 2009, 2) The least impactful methodology and activity sequencing is used to ensure impacts to the aquatic system are minimized to the maximum extent practicable. Examples include using a hydraulic, closed-lipped clamshell bucket, toothed clamshell bucket, dragline and/or excavator, and 3) Dredged or excavated material is placed where sediment-laden water cannot enter waterways or wetlands in an uncontrolled manner.²⁵⁶

An individual permit will only be needed if the project does not qualify for one of the applicable NWPs.

²⁵⁴ OR. REV. STAT. ANN. §§ 196.795-990.

²⁵⁵ http://www.oregon.gov/dsl/PERMITS/Pages/forms.aspx#Permit_Forms .

²⁵⁶

http://www.nwp.usace.army.mil/Portals/24/docs/regulatory/nationwide/2012_NWP_Regional_Permit_Conditions_%28revised%29.pdf

C. Shellfish Restoration Permitting Snapshot

- Oregon Removal-Fill Permit: Shellfish restoration projects may require a Removal-Fill JPA
 - Individual Removal-Fill Application submitted to DSL and USACE for activities that do not qualify for exemptions or general permits;
 - DSL has exemptions for certain voluntary habitat restoration activities (OAR 141-085-0534).
 - For activities that do not qualify for the exemptions, DSL has general authorizations that may cover this type of activity, but that would require a case-by-case review to make that determination.
- Local land use permit
- USACE Permitting:
 - NWP 27: Handled through Removal-Fill JPA
 - USACE Individual Permit: only needed if project does not fall within NWP 27. Coordinated through the Removal-Fill JPA.

D. Research & Conservation Permitting

A State Lands Special Use Permit or lease is available for the use of state land not authorized by other agency rules. A special use authorization allows a person to use a specific area of state-owned land under specific terms and conditions for a specific length of time. Permits or leases are available for terms from 1 to 30 years. Examples of special uses includes scientific or demonstration projects.²⁵⁷ The Division of State Lands issued a conditional use permit to the South Slough NERR for the specific purpose of restoration of native Olympia oysters.

E. Restoration in Closed Waters

No provision was found expressly prohibiting shellfish restoration projects in closed waters.

²⁵⁷ OR. ADMIN. R. 141-125-0100 through 141-125-0220. See also:
http://licenseinfo.oregon.gov/index.cfm?fuseaction=license_seng&link_item_id=14629

Protecting Existing Reefs and Restoration Projects

A. Closure of Shellfish beds for Non-Public Health Concerns

In addition to closure for public health reasons, submerged and submersible land may also be closed to public trust uses in limited circumstances.²⁵⁸ These closures may include short-term or long-term prohibitions on the commercial and/or recreational harvest of shellfish for the purpose of population enhancement and/or fishery management.²⁵⁹

- Permit or leaseholders must submit notice and obtain approval for the closure from the DSL or other applicable agencies. The closure must be necessary to protect persons and property from harm arising from the lease or permit holder's authorized use of the land and must be limited in duration and scope.

The State Land Board also has authority to impose restrictions on or close state-owned land if the Board determines that the restriction or closure is necessary to facilitate or protect a habitat restoration project. The Director of the DSL may close these lands to facilitate or protect any removal or remedial action undertaken by or pursuant to an order issued by ODEQ or U.S. Environmental Protection Agency. ODFW may also close an area to harvest of shellfish and/or close specific species to harvest (either statewide, or within specific areas/times).²⁶⁰

B. Sanctuaries & Other Protected Areas

Oregon has 5 marine reserve sites within its state waters.²⁶¹ Each site includes a no take marine reserve and most sites also include at least one less restrictive marine protected area (MPA). The marine reserves prohibit all take of fish, invertebrates, wildlife and seaweeds as well as ocean development. The MPAs have varying levels of protection, allowing or prohibiting specific take and prohibiting all ocean development. The Oregon Department of Fish and Wildlife (ODFW) is responsible for overseeing the management and monitoring of Oregon's marine reserve sites. In addition to the 5 marine reserves, there are also 7 marine gardens, 6 research reserves, 1 habitat refuge, and 2 shellfish preserves, all of which have some level of restriction on shellfish/invertebrate harvest.

²⁵⁸ OR. ADMIN. R. 141-145-0080.

²⁵⁹ Per agency personnel.

²⁶⁰ Per agency personnel.

²⁶¹ See: <http://www.oregonocean.info/index.php/marine-reserves-sp-26120>. According to agency reviewers, one of the sites does not close until 2016.

C. Other Tools for Protecting Shellfish Restoration Projects

- Commercial and recreational harvest of oysters from natural oyster beds located on unoccupied state lands is prohibited.²⁶²
- Oregon Statewide Planning Goal 16 for Estuarine Resources: Each estuary in Oregon has been "zoned" and management areas identified for natural, conservation and development.
- Oregon also has a statewide Conservation Strategy, which identifies the Nearshore Marine Ecoregion.²⁶³
- Oregon has a Nearshore Strategy, which is helps provide a framework for long-term sustainable management of nearshore resources.²⁶⁴

Oyster Management Generally

This section details the general requirements for oyster harvesting, including licenses, seasons, and other relevant details. This section does not address oyster aquaculture, which is regulated by the state Department of Agriculture or oyster mariculture, which is managed by lease agreements with Oregon ports and port districts. Oregon also regulates the following shellfish: bay clams, mussels, razor clams, and other shellfish.

A. Oyster Harvesting

Commercial and recreational harvest of oysters from natural oyster beds located on unoccupied state lands is prohibited.²⁶⁵

B. Public, Private, and Natural Reef Distinctions

The Department of Fish and Wildlife oversees the regulation of natural oyster beds. The Department of Agriculture issues and oversees oyster leases. Oregon does not have an artificial reef program.

²⁶² OR. ADMIN. R. 635-005-0910.

²⁶³ See: <http://www.dfw.state.or.us/conservationstrategy/contents.asp>

²⁶⁴ See: <http://www.dfw.state.or.us/mrp/nearshore/index.asp>

²⁶⁵ OR. ADMIN. R. 635-005-0910.

Existing Shellfish Restoration Efforts

A. Government

NOAA Fisheries, along with regional tribes, state agencies, the shellfish industry, and non-governmental organizations, is a contributing partner to a long term endeavor to rebuild dense, breeding populations of Olympia oysters in bays and estuaries along the West Coast. Native oyster habitat is being actively restored in Coos Bay.²⁶⁶

B. Non-government and Private

The Nature Conservancy has participated in a native oyster restoration project in Netarts Bay.²⁶⁷

Mitigation

At this time, Oregon does not have any established mitigation banks with available credits for shellfish mitigation. ODFW does provide specific mitigation measures to the regulatory agencies (DSL/USACE) when proposed removal-fill projects impact shellfish resources.²⁶⁸

²⁶⁶ See:

http://www.westcoast.fisheries.noaa.gov/aquaculture/shellfish_enhancement_and_%20restoration.html

²⁶⁷ See:

<http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/oregon/placesweprotect/oysters-netarts-bay.pdf>

²⁶⁸ Chapter 8, http://www.oregon.gov/dsl/PERMITS/docs/Removal_Fill_Guide_May_2013.pdf#page=138

RHODE ISLAND

Shellfish Management at a Glance

The following provides a brief reference to regulatory permitting programs applicable to shellfish restoration in Rhode Island. Related permitting requirements are addressed in subsequent sections.

A. Coastal Program

- Responsible Agency: Rhode Island Coastal Resources Management Council (CRMC)
- Relevance: Develops and implements state coastal management and Special Area Management Plans (SAMPs). Handles federal consistency reviews.
- Website: <http://www.crmc.ri.gov/>

B. Submerged Lands

- Responsible Agency: Rhode Island Coastal Resources Management Council (CRMC)
- Relevance: Issues licenses and leases for private uses of submerged lands.
- Website: <http://www.crmc.ri.gov/index.html>

C. Fisheries Management

- Responsible Agency: Rhode Island Department of Environmental Management (DEM), Division of Fish and Wildlife
- Relevance: Protects, manages, and restores the state's wildlife and fish resources.
- Website: <http://www.dem.ri.gov/programs/bnatres/fishwild/>

D. Shellfish Aquaculture

- Responsible Agency: Rhode Island Coastal Resources Management Council (CRMC)
- Relevance: Issues permits and leases for shellfish aquaculture.
- Website: <http://www.crmc.ri.gov/index.html>

E. Shellfish Sanitation

- Responsible Agency: Rhode Island Department of Environmental Management (DEM)
- Relevance: Identifies polluted shellfish grounds.
- Website: <http://www.dem.ri.gov/maps/mapfile/shellfsh.pdf>

Submerged Lands Permitting

Shellfish restoration projects may require leasing of state-owned submerged lands. This section discusses the role of state-owned submerged lands, availability of King's or Crown grants, and other aspects of leasing submerged lands for restoration projects.

A. State-Owned Submerged Lands

- Rhode Island claims title to coastal waters and the submerged lands underneath from high water mark to three miles offshore. These lands and waters are held in trust for the public.
- Public Trust Rights: The Rhode Island Constitution states that the “people shall continue to enjoy and freely exercise all the rights of fishery, and the privileges of the shore” which includes gathering seaweed, swimming, and passage along the shore.²⁶⁹
- Riparian Rights to Shellfish: No provisions found granting riparian owners special rights to shellfish.

B. Leasing Process

- *Generally:* The Rhode Island Coastal Resources Management Council (CRMC) is authorized to issue permits, licenses, and easements for submerged and submersible lands.²⁷⁰ CRMC is directed to only issue licenses and leases that are consistent with the public trust and preserve the public rights to fishing, navigation and commerce.
- *Aquaculture Leases:* The CRMC may lease submerged land under the coastal waters of the state, including any coastal ponds or estuaries to coastal rivers, and the water column above those submerged lands, to an applicant who has been granted a CRMC aquaculture permit.²⁷¹
 - Private aquaculture leases are prohibited in uncertified waters.²⁷²

C. King or Crown Grants

CRMC does not consider there to be any pre-statehood conveyances of submerged lands to private landowners.

²⁶⁹ R.I. CONST. ART. 1, § 17.

²⁷⁰ R.I. GEN. LAWS § 46-23-16.

²⁷¹ *Id.* § 20-10-6(1).

²⁷² 16-2-1 R.I. CODE R. § 300.11

D. Conservation Leasing

No provisions authorizing the leasing of submerged lands for conservation were found.

Permitting Shellfish Restoration

A. Regulating Agencies

- Rhode Island Coastal Resources Management Council (CMRC)
- USACE

B. Permitting Process

Restoration projects will generally require permitting for use of environmental resources, sovereign submerged lands, and federal dredge and fill. The state of Rhode Island and the USACE have not developed a joint permitting application, but the USACE will accept CMRC applications under the Rhode Island General Permit.²⁷³

State Permitting: CRMC Assent

A permit from the CRMC is generally required for any construction or alteration in the coastal region or tidal waters of Rhode Island. The CRMC has “exclusive jurisdiction below the mean high water for all development, operations, and dredging” except as necessary for the Rhode Island Department of Environmental Management (DEM) to exercise its power and duties.²⁷⁴

- All developments or operations within, above, or beneath the tidal waters below the mean high water mark to the extent of the state’s jurisdiction in the territorial sea require a CRMC assent.²⁷⁵
- Any person, firm, or government agency proposing development or operation within, above, or beneath the tidal water below mean high water mark to the extent of state jurisdiction must demonstrate the proposal would not:
 - Conflict with any resources management plan or program;
 - Make any area unsuitable for any uses or activities to which it is allocated by a resources management plan or program adopted by the council; or
 - Significantly damage the environment of the coastal region.²⁷⁶

²⁷³ USACE authority has been partially delegated to the state. See Dept. of the Army Corps of Engineers, Gen. Permit No. NAE-2011-2402 (Feb. 22, 2012), available at http://www.crmc.ri.gov/regulations/ArmyGeneralPermitRI_022212.pdf.

²⁷⁴ R.I. GEN. LAWS § 46-23-6(ii)(A).

²⁷⁵ SEE, GENERALLY, R.I. Code R. 16-2-1: Guidelines.

USACE Permitting:

The New England District of the USACE oversees federal dredge and fill permitting in Rhode Island. Nationwide Permits have been suspended in New England. State-specific general permits are used instead.

The Rhode Island General Permit is available for activities that have no more than minimal individual, secondary, and cumulative adverse effects on the aquatic environment within the boundaries of and off the coast of the State of Rhode Island. Under the General Permit, projects may qualify as either Category 1 or Category 2 projects.

- Projects meeting Category 1 are eligible for authorization under the GP without notifying the USACE. Category 1 projects must obtain all required approvals from the state.
- Category 2 projects require the submittal of an application to the CRMC and subsequent written authorization from the Corps, either directly or within a CRMC-issued permit.
 - Fill or dredging projects with proactive restoration (SAS, saltmarsh, vegetated shallows, anadromous fish run, etc.) as a primary purpose with any amount of impact are classified as Category 2 projects.²⁷⁷

An individual permit is required for projects that do not meet the terms and conditions of the Rhode Island General Permit.

C. Shellfish Restoration Permitting Snapshot

- Application for State Assent: Shellfish restoration projects will require assent from the CRMC.
 - Application submitted to CRMC
 - Permission to use submerged lands, if needed, is included in this process.
- USACE Permitting:
 - RI General Permit: Handled through Application for State Assent
 - Individual permit only needed if project doesn't qualify under General Permit.

D. Research & Conservation Permitting

- The CRMC may issue experimental aquaculture permits for the purpose of developing and testing new gear or techniques for aquaculture production.²⁷⁸

²⁷⁶ R.I. GEN. LAWS § 46-23-6(ii)(A).

²⁷⁷ <http://www.nae.usace.army.mil/Portals/74/docs/regulatory/StateGeneralPermits/RIGP.pdf>

²⁷⁸ 16-2-1 R.I. CODE R. § 300.11(f).

Applicants may be approved for three separate sites, with up to an area of 1,000 square feet for each site. Experimental sites may not be within 500 feet of one another.

- Experimental Aquaculture Assents are valid for a period not to exceed 3 years. A lease may be required and the sale of any aquaculture product is not allowed.

E. Restoration in Closed Waters

No provision was found expressly prohibiting shellfish restoration projects in closed waters.

Protecting Existing Reefs and Restoration Projects

A. Reef Closure for Non-Public Health Concerns

- Under the Rhode Island Freedom to Fish and Marine Conservation Act, marine waters can only be closed to recreational and commercial fishing if the closure is “deemed necessary in order to protect, manage or restore marine fish, shellfish, crustaceans, and associated marine habitats or other marine resources, protect public health or safety, or address some other public purpose.” Any closure must be based on the best available science and developed through a public review and stakeholder input process.²⁷⁹
- The Marine Fisheries Council may recommend closure of any or all coastal waters to the harvest of any or all types of fish and shellfish if “it determines that a biological emergency exists that imminently threatens the marine resources of the state.”²⁸⁰

B. Sanctuaries & Other Protected Areas

- Shellfish Spawner Sanctuaries: There are six established shellfish spawner sanctuaries in state waters with habitat suitable for placement of the oysters in designated portions of Winnapaug and Ninigret Ponds, Potters Pond, Jenny’s Creek, and Bissell cove.
- Shellfish Management Areas:
 - The Marine Fisheries Council may designate shellfish management areas to enhance marine species populations, manage harvest, facilitate department

²⁷⁹ R.I. GEN. LAWS § 20-3.2-3.

²⁸⁰ *Id.* § 20-3-5.

experiments to plant, cultivate, propagate, manage and develop species and other related purposes.²⁸¹

- DEM has declared the following Shellfish Management Areas: Greenwich Bay, Conimicut Point, Potowomut, High Banks, Bissel Cove/Fox Island, Mill Gut, Bristol Harbor, Kickemuit River, Jenny's Creek, Sakonnet River, Pt. Judith Pond, Potter Pond, Ninigret (Charlestown) Pond, Quonochontaug Pond, and Winnapaug Pond.²⁸²
 - Within SMAs, oyster harvest limits, methods, and seasons may be different from those discussed below.
- Special Area Management Plans (SAMPs)
 - Under the federal Coastal Zone Management Act, states can develop and implement Special Area Management Plans (SAMPs) to address specific regional issues.
 - Rhode Island has developed the following SAMPs: Metro Bay, Greenwich Bay, Aquidneck Island West Side, Narrow River, Salt Ponds Region, Pawcatuk River, Ocean, Shoreline Change (Beach).
 - SAMPs identify threats and recommend strategies for improved management. Several of the RI SAMPs protect shellfish habitat.
 - The Narragansett Bay Natural Estuarine Research Reserve was designated in 1980 through a partnership between NOAA and DEM. Rhode Island passed the Narragansett Bay Oyster Restoration Act to restore the indigenous oyster population in this Bay.

C. Other Tools for Protecting Shellfish Restoration Projects

- Rhode Island law gives the Director the authority to adopt regulations concerning the state's shellfish grounds that he thinks is necessary for the growth or taking of shellfish.
 - Shellfish Grounds include "all land underlying waters within the rise and fall of the tide and the marine limits of the jurisdiction of the state."²⁸³
- Marinas may not be constructed within 2000 feet of a shellfish management areas.²⁸⁴
- The CRMC may order the temporary or permanent suspension of CRMC-permitted aquaculture activities if the CRMC "finds or has cause to believe that an aquaculture

²⁸¹ *Id.* § 20-3-4.

²⁸² 25-8-4 R.I. CODE R. § 4.13.

²⁸³ R.I. GEN. LAWS § 20-8.1-1.

²⁸⁴ *Id.* § 46-23-18.

activity is causing or is likely to cause an immediate danger to marine life or the environment of the coastal waters of the state.”²⁸⁵

- The harvest of wild shellfish naturally occurring in a CRMC permitted lease is prohibited. All wild shellfish within a lease area remain the property of the State and remain in place for the benefit of the public resource. Any incidental catch by the lease holder within an aquaculture lease shall be returned immediately to the same waters.²⁸⁶

Oyster Management Generally

The wild oyster fishery is managed by the Rhode Island Department of Environmental Management, Division of Fish and Wildlife. This section does not address oyster aquaculture, which is also regulated by the Division of Fish and Wildlife. Rhode Island also regulates the harvest of the following shellfish: quahaugs, soft-shell clams, surf clams, and mussels.

A. Oyster Harvesting

This section details the general requirements for oyster harvesting, including licenses, seasons, and other relevant details.

- Season:
 - The open season for taking oysters from the “free and common oyster fishery” is September 15th to May 15th.
- License:
 - Commercial: Individuals harvesting oysters need a commercial shellfishing licenses.
 - Recreational: Residents do not need purchase a license. Non-residents over the age of 12 years must obtain an annual or a tourist shellfish license.
- Harvesting Requirements:
 - Harvest limited to between sunrise and sunset.
 - Minimum Size: 3 inches.
 - Use of dredges, rakes, or other apparatus operated by mechanical power or hauled by power boats is prohibited.
 - A holder of a commercial shellfishing license may take and/or possess, in any one day, up to three bushels of oysters.²⁸⁷

²⁸⁵ *Id.* § 20-10-14.

²⁸⁶ 16-2-1 R.I. CODE R. § 300.11.

²⁸⁷ R.I. GEN. LAWS § 20-6-10.

- A holder of a non-resident shellfishing license may take in any one day not more than one peck each of oysters.²⁸⁸

B. Public, Private, and Natural Reef Distinctions

Rhode Island regulates the wild oyster fishery on public lands (DEM) and private shellfish aquaculture leases (CMRC). Artificial reefs are mentioned as a potential conservation and fisheries enhancement option in the Ocean SAMP.²⁸⁹

Existing Shellfish Restoration Efforts

A. Government²⁹⁰

- In 2001, the Rhode Island Legislature enacted the Narragansett Bay Oyster Restoration Act. The Act directed the DEM and CRCM to work together “to develop programs that address the declining oyster population in Narragansett Bay and ... promote the development, restoration and maintenance of the oyster population and oyster habitats in and around Narragansett Bay.”²⁹¹
- In 2006, the Natural Resources Conservation Service (NRCS) funded a statewide oyster restoration project to increase spawning and recruitment levels to reestablish a self-sustaining oyster population. Oyster aquaculturalists cultivate oysters, which are later moved to a restoration site. RI DEM regulates the placement of the stocked oysters into the state’s waters. For more information, see http://www.nrcs.usda.gov/wps/portal/nrcs/detail/ri/newsroom/stories/?cid=nrcs144p2_016722
- A public quahog enhancement program is overseen by DEM. Approximately 100,000 quahog seeds are planted annually at approved sites by DEM. The quahog seed is obtained by the Upweller which is operated by the Rhode Island Shellfishermen Association.
- Commercial enhancement of quahogs takes place annually. Fishermen transplant quahogs from high density closed waters to pre-determined shellfish management areas. This program is overseen by the DEM and the Department of Health.
- An Oyster Restoration Working Group was formed in 2009 consisting of state,

²⁸⁸ *Id.* § 20-6-10.

²⁸⁹ 16-1-17 R.I. ADMIN. CODE § 940.

²⁹⁰ Information obtained from the Rhode Island Shellfish Management Plan available at <http://www.rismp.org/the-plan/>.

²⁹¹ R.I. GEN. LAWS § 20-2-45.

federal, academic universities, and non-governmental agencies. Their goal is to create and update oyster restoration monitoring protocols, oyster restoration site location protocols, and education and communication information.

B. Non-government and Private

- In November 2014, the Coastal Resources Center/Rhode Island Sea Grant released the Rhode Island Shellfish Management Plan (<http://www.rismp.org/the-plan/>). The SMP identifies key issues and key management and science recommendations that the state agencies can use to ensure sound management of shellfish resources into the future.
- Roger Williams University has created an Oyster Gardening for Restoration and Enhancement Program where participants grow oysters in nurseries attached to their docks and then the oysters are placed on restoration sites Narragansett Bay, Rhode Island's coastal ponds and Block Island. <http://rwu.edu/academics/schools-colleges/fcas/ceed/oyster-gardening>.
- Save the Bay has been involved in scallop restoration projects. <http://www.savebay.org/shellfish>.

Mitigation

There are currently no programs in place for receiving mitigation credits for shellfish restoration in Rhode Island.

SOUTH CAROLINA

Shellfish Management at a Glance

The following provides a brief reference to regulatory permitting programs applicable to shellfish restoration in South Carolina. Related permitting requirements are addressed in subsequent sections.

A. Coastal Program

- Responsible Agency: South Carolina Department of Health and Environmental Control Office of Ocean and Coastal Resource Management (SCDHEC-OCRM) oversees the coastal program.
- Relevance: Manages coastal resources, handles federal consistency reviews, and issues Critical Zone permits.
 - Component:
 - Coastal Tidelands and Wetlands Act, S.C. CODE ANN. § 48-39-10 *et seq*
- Website: <http://www.scdhec.gov/ocrm/>

B. Submerged Lands

- Responsible Agency: South Carolina Department of Health and Environmental Control
- Relevance: Issues permits for activities on submerged lands.
- Website: <http://www.scdhec.gov/environment/WaterQuality/CoastalPermits/>

C. Fisheries Management

- Responsible agency: South Carolina Department of Natural Resources, Marine Division, Office of Fisheries Management
- Relevance: Develops and implements programs that manage and conserve the marine and estuarine resources of the state.
- Website: <http://www.dnr.sc.gov/divisions/marine/shellfish.html>

D. Shellfish Mariculture

- Responsible Agency: South Carolina Department of Natural Resources, Marine Resources Division, Office of Fisheries Management
- Relevance: Oversees Joint Application for Shellfish Mariculture and coordinates permitting with Department of Health and Environmental Control Ocean and Coastal Resource Management and the U.S. Army Corps of Engineers
- Website: <http://www.dnr.sc.gov/divisions/marine/shellfish.html>

E. Shellfish Sanitation

- Responsible Agency: South Carolina Department of Health and Environmental Control.

- Relevance: Classifies shellfish growing waters and establishes regulations for administering National Shellfish Sanitation Program.
- Website: <http://www.scdhec.gov/FoodSafety/ShellfishMonitoring/>

Submerged Lands Leasing

This section discusses the role of state-owned submerged lands, availability of King's or Crown grants, and other aspects of leasing submerged lands for restoration projects.

A. State Owned Submerged Lands:

- State owned submerged lands, which include all lands below mean high tide line along tidal waters,²⁹² are held in trust for the public.²⁹³
- Public Trust Rights: Navigation, fishing, sailing, recreation, and use of land on the seashores and seabeds.²⁹⁴ The state is barred from permitting activity “that substantially impairs the public interest in marine life, water quality, or public access.”²⁹⁵

B. Leasing Process:

- *Generally:* South Carolina does not have a submerged lands leasing program. Private use of state-owned submerged lands is authorized through the licensing and permitting programs administered by SCDNR and discussed in the permitting section.
- *Shellfish Mariculture:* The Department of Natural Resources may grant exclusive use of state-owned intertidal or subtidal bottoms and water column to South Carolina residents for shellfish mariculture operations through its permitting system.²⁹⁶ Mariculture permits for the controlled cultivation in confinement of marine and estuarine organisms in salt waters specify what species can be grown and the area where the cultivation occurs.²⁹⁷ The SCDHEC–OCRM and USACE specify in the permit what type of gear is permissible for growing the shellfish. At present, most of the state's mariculture operations are hard clams but there is a growing trend

²⁹² Port Royal Mining Co. v. Hagood, 9 S.E. 686, 689 (S.C. 1889).

²⁹³ State holds navigable watercourses subject to a public trust, and the state's ownership of public trust resources is generally not alienable. State v. Head, 498 S.E.2d 389 (S.C.App. 1997).

²⁹⁴ Sierra Club v. Kiawah Resort Ass'n, 456 S.E.2d 397, 402 (S.C. 1995).

²⁹⁵ McQueen v. S. C. Coastal Council, 580 S.E.2d 116, 119 (S.C. 2003).

²⁹⁶ S.C. CODE ANN. § 50-5-900. See also:

<http://www.dnr.sc.gov/marine/shellfish/pdf/ApplicationforShellfishCulturePermit.pdf>

²⁹⁷ S.C. CODE ANN. § 50-5-2100.

towards oyster mariculture. In South Carolina the term “culture” implies cultivation of naturally occurring wildstock resources while “mariculture” is strictly defined as controlled cultivation in confinement. Culture permit conditions require annual shell replenishment and demonstration of commercial use. There are no replanting requirements for shellfish mariculture permits.

C. Kings or Crown Grants:

The state presumptively owns all land below the mean high water mark but private parties may occasionally own submerged lands through a king’s grant. In South Carolina, these grants may be called Lord Proprietors, British Crown, or State grants.

- To prove ownership, a person must show that there was a specific intent to convey title to submerged land. According to a 2011 technical report, there were 13 Grant areas as of 2007, though most had not been thoroughly surveyed for oyster grounds.²⁹⁸

D. Conservation Leasing:

South Carolina does not lease its water bottoms, making conservation leasing currently unavailable. While the state does issue exclusive permits for shellfish cultivation, there is no clear mechanism to use water bottoms for oyster restoration.²⁹⁹

Permitting Shellfish Restoration

A. Permitting Agencies

- South Carolina Department of Health and Environmental Control (SCDHEC)
 - Ocean & Coastal Resource Management (OCRM)
 - Bureau of Water (Water)
- South Carolina Department of Natural Resources (SCDNR)
 - Marine Resources Division (MRD)
- U.S. Army Corps of Engineers (USACE)

²⁹⁸ Coen, et al., *Managing Oysters in South Carolina: A Five Year Program to Enhance/Restore Shellfish Stocks and Reef Habitats Through Shellfish Planting and Technology Improvements*, Technical Report Number 105, at 6, <http://www.dnr.sc.gov/marine/pub/Coen2011ShellfishReport.pdf>.

²⁹⁹ S.C. CODE ANN. § 50-5-900; Bonnie E. Allen, *The Viability of Leasing Public Trust Lands for Conservation in South Carolina*, 15 SOUTHEASTERN ENVTL. L.J. 241, 254 (2006).

B. Permitting Process

Restoration projects will generally require permitting for use of environmental resources and federal dredge and fill. The State of South Carolina does not have a joint permit application process with the USACE Charleston District. Shellfish restoration project proponents must submit separate state and federal permit applications.

State Permitting:

The Coastal Tidelands and Wetlands Act (CTWA) designates as critical areas all coastal waters, tidelands, beaches, and beach/dune systems between the mean high tide line and the critical line. The “critical line” marks the boundary between the critical areas and non-critical areas. SCDHEC-OCRM sets the critical line. All activities taking place in the critical area (seaward of the critical line) require a permit from SCDHEC-OCRM including restoration efforts.³⁰⁰ Permit applications fall into two categories: minor activities and major activities. Oyster reef restoration will be permitted as a major activity.³⁰¹ Pre-application meetings are encouraged.

USACE Permitting:

Restoration projects require permits from the USACE. The Charleston District of the USACE oversees federal dredge and fill permitting in South Carolina. Restoration projects may qualify for Nationwide Permit 27 (aquatic habitat restoration). Regional conditions include: 1) a discharge cannot cause the loss of greater than 300 linear feet of streambed and 2) activities authorized will require coordination with appropriate Federal, State, and local agencies.

Regional General Permit: This district also has a Regional General Permit that may be applicable to oyster restoration projects.

- RGP: SAC-2012-01003 authorizes the discharge of dredged and/or fill material and the placement of structures required for oyster reef restoration and creation projects in navigable waters of the United States in Beaufort, Berkeley, Charleston, Colleton, Dorchester, Georgetown, Horry, and Jasper counties. The General Permit specifically authorizes oyster reef restoration and/or creation projects sponsored by the South Carolina Department of Natural Resources for the purposes of commercial and/or recreational harvesting, ecological purposes, and/or research and experimental purposes. “Ecological purposes” may include oyster reef

³⁰⁰ S.C. CODE ANN. REGS 30-2.

³⁰¹ See N. Pace & C. Boyd, Southeast Shellfish Conservation & Shoreline Protection Policy Analysis 7 (2012), available at http://masglp.olemiss.edu/Advisory/TNC_Policy.pdf.

restoration. The permit does not authorize projects that use oyster castles, reef balls, or similar structures constructed for shoreline and/or marsh stabilization.³⁰²

Any projects not qualifying for NWP 27 or the Regional General Permit will have to submit an Individual Permit.

C. Shellfish Restoration Permitting Snapshot

- Critical Area Permit: Oyster restoration projects will require a Critical Area Permit.
 - Submit application to the Department of Health and Environmental Control.
- USACE Permitting:
 - Oyster restoration may qualify for NWP 27 but will still require preconstruction notification (PCN).
 - Regional General Permit SAC-2012-01003 may also be used for oyster restoration.
 - Individual Permit: only needed if project does not fall within NWP 27 or RGP.

D. Research & Conservation Permits

There is a potential exception to the critical area permit requirement available for educational institutions and non-governmental agencies.³⁰³ The exception allows for conservation, replenishment and research activities of state agencies and educational institutions as long as the project causes no material harm to the flora, fauna, physical, or aesthetic resources of the area.

SCDNR Marine Resources Institute Shellfish Program uses this exception to conduct large-scale oyster restoration projects. The projects still require a NWP 27 pre-construction notification to the USACE. Likewise, the SCORE restoration program, discussed below, uses this exception to conduct intertidal reef restoration projects. It also submits a pre-construction notification to the USACE under NWP 27, often including multiple projects.

E. Restoration in Closed Waters

Oyster restoration can occur in closed waters.³⁰⁴ The SCORE program (discussed under restoration projects below), which does community restoration, often works in closed waters. Working in closed waters may actually provide the restoration project greater protections against future harvesting.

³⁰² See: http://www.sac.usace.army.mil/Portals/43/docs/regulatory/SCDNR_OysterGP_Final_6.4.13.pdf

³⁰³ S.C. CODE ANN. § 48-39-130; S.C. CODE ANN. REGS. 30-5.

³⁰⁴ Pace and Boyd, *supra* note 10.

Protecting Existing Reefs and Restoration Projects

A. Reef Closure for Non-Public Health Concerns

SCDNR has the authority to open and close areas for shellfish harvest. SCDNR uses this authority to allow overharvested areas to be replenished either naturally or through state-conducted shell replenishment activities. Approximately half of the state managed shellfish grounds are closed to oyster harvest in any one harvest season. SCDNR also uses this authority to close areas which are being use for research, including oyster restoration research activities.

B. Sanctuaries & Other Protected Areas

The South Carolina Secretary of Commerce has authority to designate estuarine or marine sanctuaries.³⁰⁵ Estuarine sanctuaries are defined as research areas while marine sanctuaries refer more loosely to any waters and wetlands area. These areas are managed by the SCDHEC. Under this authority, certain areas have been temporarily designated as research areas. However, there are not any oyster sanctuaries located in the state. There are research reserves, preserves, and protected areas in the coastal region of the state, but not exclusively for the purpose of protecting oyster reefs for enhancement of oyster populations, spat, or other ecosystem services. Within South Carolina waters, there is one National Marine Sanctuary at Gray's Reef.

Many areas serve as de facto sanctuaries by virtue of being closed to shellfishing because of SCDHEC Shellfish Sanitation classification. Also, there are oyster beds that have not been designated as shellfish grounds by SCDNR and are therefore not eligible for harvest. These areas are “no-harvest” zones by default. Lastly, SCDNR may regulate the amount of shellfish taken from public grounds and can use this authority to reduce the amount of oysters harvested in a given area.³⁰⁶

The state stormwater regulations also include protections for shellfish beds. Developments taking place within 1,000 feet of shellfish beds must demonstrate the ability to store the first 1.5 inches of runoff as a permitting condition. Similarly, new marinas cannot be constructed in shellfish harvesting waters.³⁰⁷ South Carolina courts have acknowledged the ability to restrict development in instances where the development may substantially interfere with public access to public oyster grounds or reduce the quality of the oyster grounds.³⁰⁸

³⁰⁵ S.C. CODE ANN. § 48-39-10 (L)(M).

³⁰⁶ Coen, et al., *supra* note 7, at 6.

³⁰⁷ S.C. CODE ANN. REGS. 30-12 (E)(1)(c).

³⁰⁸ *Sierra Club v. Kiawah Resort Associates*, 318 S.C. 119, 456 S.E.2d 397 (S.C. 1995) (court upheld the Wildlife Department's decision to condition the permitting of 36 docks on the developer's payment of a fee and adoption of a specific management plan to protect the quality of nearby oyster grounds).

South Carolina also has a coastal monitoring program entitled the South Carolina Estuarine and Coastal Assessment Program (SCECAP). The program monitors estuarine habitats through periodic sampling and reports. While not specifically tied to restoration, the SCECAP program may help inform restoration priorities.³⁰⁹

C. Other Tools for Protecting Shellfish Restoration Projects

- In assessing the potential impacts of projects in critical areas, DHEC must consider how the project would impact oysters.³¹⁰
- New marinas, which includes all structures defined as marinas in 30-1(D), are not allowed in waters classified for shellfish harvesting, except for any locked harbor, dry stack or expanded existing marina that does not close any additional waters for shellfish harvesting.³¹¹
- Section 50-5-920 of SC Code of Laws provides for penalties and mitigation for harming oyster resources.

Oyster Management Generally

The wild oyster fishery is managed by the SC Department of Resources, Marine Resource Division, Office of Fisheries Management. This section does not address shellfish mariculture, which is also regulated by South Carolina Department of Natural Resources, Marine Resources Division.

A. Oyster Harvesting

This section details the general requirements for oyster harvesting, including licenses, seasons, and other relevant details.

- Season: October 1 through May 15, unless conditions warrant shortening or extending the season.
 - It is illegal to harvest shellfish between 1/2 hour after official sunset and 1/2 hour before official sunrise.
- Licenses:
 - Recreational harvest of shellfish (clams, oysters and other molluscan bivalves) requires a South Carolina Saltwater Recreational Fishing License (\$10 resident/\$35 non-resident).
 - Commercial harvest of shellfish:

³⁰⁹ For more information, see: <http://www.dnr.sc.gov/marine/scecap/summary.html>

³¹⁰ S.C. CODE ANN. REGS. 30-11.

³¹¹ *Id.* 30-12.

- Commercial saltwater license (\$25.00 for SC residents; \$300 non-resident)
 - State shellfish ground license (\$75.00 for SC residents; \$375 non-resident)
 - State or culture ground harvest permit(s) and decal(s)
- Harvesting Methods:
 - It is unlawful to use scoops, scrapes tongs, or dredges to take shellfish without a permit.
 - Commercial harvesters must have a hand harvest permit or permits for specific gear.
 - Recreational harvest is limited to hand harvest.
- Harvest Limits:
 - Recreational licenses: two bushels of oysters harvested per person, per day. No person may gather more than one personal limit of shellfish on more than two calendar days per any seven day period. There is a maximum possession limit of three personal limits per boat or vehicle or boat and vehicle combination.
 - Commercial harvest requires a permit from SCDNR. This permit has conditions which currently include:
 - Harvest is limited to areas specified on permit
 - Harvester must have a certified map of permitted grounds
 - 3 inch minimum size
 - Cull in place

B. Public, Private, and Natural Reef Distinctions

The Marine Resources Division of South Carolina Department of Natural Resources oversees the regulation of public, private, natural, and artificial reefs in South Carolina waters. The state's Marine Artificial Reef Program, first established in 1973, is a part of the MRD's Office of Fisheries Management (OFM).

- Shellfish resources are divided in Public Shellfish Grounds, State Shellfish Grounds and Culture Permits.
 - Culture Permits are areas of naturally occurring shellfish resource which have been permitted to individuals for exclusive use for commercial cultivation of shellfish. The State may grant permits for exclusive use of state-owned intertidal or subtidal waterbottoms for shellfish culture or mariculture to South Carolina residents, which ³¹²
 - State Shellfish Grounds are areas of naturally occurring shellfish resource which are available for commercial or recreational harvest with the appropriate licenses and permits.

³¹² S.C. CODE ANN. § 50-5-900.

- Public Shellfish Grounds are reserved for recreation harvesting only. Commercial harvesting not allowed on public grounds.

Existing Shellfish Restoration Efforts

A. Government

SCDNR Marine Resources Division conducts research, monitoring, and restoration related to the state shellfish resources to provide data and reports, to support the management of the state's commercial and recreational resources. It was documented that from 2002 to 2006, more than 150,000 bushels of oyster shells were planted at 34 sites covering an estimated nine acres. The SCDNR uses funds from the saltwater fishing licenses to plant oyster shell on state managed grounds. As of 2010, the state contains 4,936 acres of live oysters with the largest reef containing 8.7 acres.

The South Carolina Oyster Restoration and Enhancement (SCORE) program funded through SCDNR restores and enhances oyster habitat by planting recycled oyster shells in the intertidal environment to form new, self-sustaining oyster reefs. This program is a community based restoration program that uses volunteers to install the oyster bags. Typically most of these projects occur in closed waters. Since 2001, over 400 oyster reefs have been constructed at 44 sites from Hilton Head to Murrells Inlet.

South Carolina Oyster Recycling Program funded through SCDNR collects oyster shells which are utilized to enhance existing oyster beds and construct new oyster beds. This program is funded by saltwater recreation fishing license sales. There are 25 shell recycling stations in South Carolina.

B. Non-government and Private

The Nature Conservancy has conducted a few oyster restoration projects. As a part of one project on Jeremy Island, TNC is testing the efficacy of oyster castles along the shoreline. This project site is managed by TNC and is located on a king's grant site. They have also launched a pilot project to use loose fossilized oyster shell deposited in a managed wetland.

Mitigation

There are currently no programs in place for receiving mitigation credits for shellfish restoration projects in South Carolina.

TEXAS

Shellfish Management at a Glance

The following provides a quick reference to relevant state laws and regulatory programs impacting shellfish management and restoration projects in Texas. Related permitting requirements are addressed in subsequent sections.

A. Coastal Program

- Responsible Agency: Texas General Land Office
- Relevance: Oversees regulation and permitting of activities in Texas' coastal program.
 - Coastal Coordination Act of 1991
 - Open Beaches Act
 - Dune Protection Act
 - Land Office Beach/Dune Rules
- Website: <http://www.glo.texas.gov/what-we-do/caring-for-the-coast/grants-funding/cmp/>

B. Submerged Lands

- Responsible Agency: Texas General Land Office
- Relevance: Responsible for issuing various types of permits, easements and leases on all state-owned coastal lands.
- Website: <http://www.glo.texas.gov/what-we-do/state-lands/leasing-and-easements/coastal/index.html>

C. Fisheries Management

- Responsible Agency: Texas Parks and Wildlife Department
- Relevance: Manages recreational and commercial fishing.
- Website: <http://www.tpwd.state.tx.us>

D. Shellfish Aquaculture

- Responsible Agency: Texas Dept. of Agriculture (Lead), Texas Commission on Environmental Quality, and Texas Parks and Wildlife Commission.
- Relevance: Responsible for licensing and regulating aquaculture facilities.
- Website: <http://www.texasagriculture.gov/RegulatoryPrograms/Aquaculture.aspx>

E. Shellfish Sanitation

- Responsible Agency: Texas Dept. of State Health Services
- Relevance: Oversees oyster harvesting for public health purposes.
- Website: <http://www.dshs.state.tx.us/seafood/classification.shtm>

Submerged Lands Permitting

Shellfish restoration projects may require permission to use state-owned submerged lands. This section discussed the role of state-owned submerged lands, availability of King's or Crown grants, and other aspects of leasing submerged lands for restoration projects.

A. State-Owned Submerged Lands

- **Ownership of Submerged Lands:** Texas owns the submerged lands within state waters. Submerged land means “any land extending from the boundary between the land of the state and the littoral owners seaward to the low-water mark on any saltwater lake, bay, inlet, estuary, or inland water within the tidewater limits, and any land lying beneath the body of water.”³¹³
- **Public Trust Rights:** right to use publicly held waters for commercial and recreational purposes, including fishing.
- **Riparian Rights to Shellfish:** Riparian owners in Texas have the right to plant or sow oysters within their riparian zone with a permit or lease issued by GLO.
 - The right of a riparian owner of land along any bay shore in this state to plant oysters extends 100 yards into the bay from the high-water mark or from where the land survey ceases. The right to a natural oyster bed is not exclusive.

B. Leasing Process

- *Leasing for Restoration:* Shellfish restoration projects can apply for Coastal Leases for Government Agencies and Nonprofits.
 - The GLO issues coastal leases to state agencies, eligible cities or counties, nonprofit, tax-exempt organizations, or scientific or educational entities for public recreation, estuarine preserves, wildlife preserves, or scientific research activities.³¹⁴
- *Submerged Land Leasing Generally:* Texas requires a Coastal Surface Lease or Easement for all revenue generating activities on state-owned submerged lands.

³¹³ TEX. NATURAL RESOURCES CODE § 33.004

³¹⁴ Lease application can be found at: <http://www.glo.texas.gov/what-we-do/state-lands/leasing-and-easements/coastal/index.html>

- To apply for a surface lease from the GLO, an applicant must identify the area they wish to lease, have it surveyed by a licensed surveyor, pay the fee, and submit it to the GLO for approval.
- *Oyster Leasing*: The Texas Parks and Wildlife Department (TPWD) issues private oyster leases.
 - “Private oyster leases” are defined as state waterbottom leases granted by the state to individuals or corporations incorporated under the laws of Texas for the purpose of producing oysters.³¹⁵
 - According to TPWD, private **oyster leases** are only granted in Galveston Bay.
 - According to the TPWD, however, there is currently a moratorium on the issuance of new leases. The TPWD placed a moratorium on the issuance of private oyster leases in 1989.

C. King or Crown Grants

The first Spanish land grants in Texas were issued in 1716. Additional land grants were issued by Mexico. More detail is available about these land grants in the GLO handout “Spanish and Mexican Records in the Texas General Land Office.”³¹⁶

D. Conservation Leasing

GLO issues coastal leases to state agencies, eligible cities or counties, nonprofit organizations, and scientific and education entities for public recreation, estuarine preserves, wildlife preserves, or scientific research activities.

Permitting Shellfish Restoration

A. Permitting Agencies

- U.S. Army Corps of Engineers (Lead Agency)
- Texas General Land Office

B. Permitting Process

Shellfish restoration projects may require various permits and submerged lands leasing from federal, state, and local agencies. To simplify the application process, Texas has

³¹⁵ 31 TEX. ADMIN. CODE § 58.11. If a corporation is to hold the lease or control land under a certificate of location, the corporation must be incorporated under Texas law. TEX. PARKS & WILD. CODE ANN. § 76.008. The term of a private lease is 15 years. *Id.* § 76.018.

³¹⁶ See: <http://www.glo.texas.gov/what-we-do/history-and-archives/our-collections/land-grants/>

developed a Joint Application to the USACE that includes elements of state law requirements. This coordination includes consistency with Texas Coastal Management Program and review by the General Lands Office.

USACE Permitting:

Activities taking place along the Texas coast are permitted by the Galveston District of the U.S. Army Corps of Engineers. Shellfish restoration projects in Texas waters may rely on NWP 27 so long as the activities are not impacting coastal dune swales. Coastal dune swales are described as: “wetlands and other waters of the United States that are formed as depressions within and among multiple beach ridge barriers, dune complexes, or dune areas adjacent to beaches fronting the tidal waters of the Gulf of Mexico and adjacent to the tidal waters of bays and estuaries.”³¹⁷ They are generally comprised of either impermeable muds that act as reservoirs which collect precipitation or groundwater nourished wetlands in sandy soils.

Texas also has a regional general permit for the construction of artificial wave barriers for the purpose of shoreline erosion protections (Regional General Permit SWG 2001-00150). However, this permit is only allowed for temporary wave barriers and is of limited application to shellfish restoration projects.

Therefore, any shellfish restoration projects that do not meet the requirements and regional conditions of NWP 27 must seek an individual permit from the USACE.

State Permitting:

Coastal activities in Texas are regulated through the Coastal Coordination Act of 1991, which establishes the Texas coastal management program.³¹⁸ The program is implemented by the Texas Land Commissioner through the General Lands Office (GLO). To streamline permitting, the GLO and the USACE created Joint Permit Application Forms (JPAFs). In addition, Texas has created a Permitting Assistance Group (PAG) that offers free public assistance for project-specific permitting advice.³¹⁹

Texas has several coastal protection laws such as the Dune Protection Act and the Open Beaches Act. These laws are implemented through the GLO Beach/Dune Rules. Under these rules, coastal construction projects may require a beachfront construction certificate or a dune protection permit. However, these requirements should not impact shellfish

³¹⁷ Nationwide Permit Regional Conditions for the State of Texas, available at:

<http://www.swg.usace.army.mil/BusinessWithUs/Regulatory/Permits/NationwideGeneralPermits.aspx>

³¹⁸ 33 TEX. NAT. RES. CODE ANN. §201 *et. seq.* Laws authorizing the Coastal Management Program (CMP) and outlining its elements are found in the Texas Natural Resources Code Chapter 33. TEX. NAT. RES. CODE § 33.052 -.053.

³¹⁹ Texas Coastal Management Program 2012 Annual Report.

restoration projects unless components of the project are being conducted in the regulated area.

C. Shellfish Restoration Permitting Snapshot

- Joint Permit Application Form
 - Submit to the USACE
 - NWP 27 should apply so long as not impacting coastal dune swales
 - GLO and other state agencies will review for consistency.
- Nonprofit submerged land lease for conservation, discussed above.

D. Research & Conservation Permits

Dune Protection Permit exemption: scientific research projects may be exempt from dune protection permitting requirements. Must be conducted by an academic institution or government entity. Requires submission of work plan prior to project construction.

E. Restoration in Closed Waters

Oyster restoration is allowed in closed waters and restoration activities in Galveston Bay have taken place in closed waters.

Protecting Existing Reefs and Restoration Projects

A. Reef Closure for Non-Public Health Concerns

No mechanisms were found for closing oyster reefs for non-public health reasons.

B. Sanctuaries & Other Protected Areas

- Coastal Preserve Program:

The Coastal Preserve Program is designed to protect unique coastal areas and fragile biological communities, including important colonial bird nesting sites. Under the Texas Coastal Management Program, coastal preserves are any lands owned by the state that are designated and used as parks, recreation areas, scientific areas, wildlife management areas, wildlife refuges, or historic sites and that are designed by the Texas Parks and Wildlife Department (TPWD) as being coastal in character. Under the Coastal Preserve Program, the General Land Office leases coastal lands to the TPWD, which manages those lands as

preserves. Currently, there are four coastal preserves: Armand Bayou, Christmas Bay, Welder Flats, and South Bay.³²⁰

C. Other Tools for Protecting Shellfish Restoration Projects

- Artificial reef liability protections: Texas artificial reef law allows ownership of reef materials to be conveyed to the state and limits liability for use of the materials once conveyed.³²¹ Before constructing an artificial reef, persons must enter into a Public Reefing Agreement with the TPWD.³²² Acceptable materials include natural rock, concrete, and/or steel.³²³
- Geophysical and Geochemical Exploration Protections: No high velocity energy source shall be discharged within 500 feet of any oyster reef, marked oyster lease, marked artificial reef.³²⁴

Oyster Management Generally

The wild oyster fishery is managed by the Texas Parks and Wildlife Department (TPWD). This section does not address oyster aquaculture, which is regulated by the Texas Dept. of Agriculture. The Texas Parks and Wildlife Department (TPWD) issues private oyster leases, permits, and licenses.³²⁵

A. Oyster Harvesting

This section details the general requirements for oyster harvesting, including licenses, seasons, and other relevant details.

- Season: Nov. 1 through April 30, sunrise to 3:30 p.m.
- License:
 - Recreational:
 - Fishing License and Saltwater Stamp Endorsement
 - Sport Oyster Boat License if using tongs or dredge

³²⁰ See: <http://www.glo.state.tx.us/coastal/coastpres.html>.

³²¹ A person who has transferred title of artificial reef construction materials to the state is not liable for damages arising from the use of the materials in an artificial reef if the materials meet applicable requirements of the National Fishing Enhancement Act and applicable regulations of the United States Department of the Interior. TEX. PARKS & WILDLIFE CODE § 89.061.

³²² TEX. ADMIN. CODE tit. 31, § 57.950.

³²³ Texas Public Reef Building Program Standard Operating Protocol and Guidelines (2012), http://www.tpwd.state.tx.us/publications/pwdpubs/media/pwd_bk_v3400_1215_standard_operating_procedures.pdf

³²⁴ TEX. ADMIN. CODE tit. 31, § 9.11.

³²⁵ TEX. PARKS & WILD. CODE ANN. § 1.011.

- Commercial Licenses: Commercial Oyster Boat License (transferrable)
- Harvesting Requirements:
 - Oysters must be 3 inches or larger.
 - Oysters may be taken by hand, with tongs or by oyster dredge. Oyster dredges may not be more than 14 inches in width.

B. Public, Private, and Natural Reef Distinctions

The TPWD issues private oyster leases, as discussed under oyster leasing above.³²⁶ However, private leases are not currently available. In addition, the state construction of artificial reefs in compliance with the state artificial reef construction program. Artificial reefs are also managed by the TPWD.

Existing Shellfish Restoration Efforts

A. Government

- Coastal Restoration & Improvement Fund may be used to fund restoration activities.
- The Texas Parks and Wildlife Department Coastal Fisheries Division has been conducting oyster restoration since 2007. Federal money from hurricane disaster relief was appropriated by the Gulf States Marine Fisheries Council to the Texas Parks and Wildlife Department to facilitate oyster restoration in Galveston Bay. Currently they have a full time oyster restoration staff biologist that is responsible for assessing, monitoring, mapping, and restoring oyster reefs. The primary objective for their oyster reef restoration is for enhancing the commercial oyster fisheries, but they have conducted projects to build oyster sanctuaries in closed waters. Following restoration the sites are closed to harvest for approximately 2 years. The oyster density should be greater than 100/m² in order for the reefs to be open to harvest.
- In 2007 a 20 acre oyster reef was created in eastern Galveston Bay that used small river rock as cutch. This project was built to enhance the commercial oyster fisheries and has had good success. A 5-acre reef was built in Western Galveston Bay in restricted waters that involved property owners. This project was titled the North Shore Eagle Point Restoration Project. The Galveston Bay Foundation was a project partner.
- Following Hurricane Ike 175 acres of oyster restoration using cultch occurred at several locations in East, West, and Central Galveston Bay. In addition an oystermen

³²⁶ TEX. PARKS & WILD. CODE ANN. § 1.011.

work program helped to restore 30 acres of oyster reef using bag less dredging to help uncover buried oyster shells.

- A 25-acre oyster restoration project was constructed in Sabine Lake. A 1,750 foot oyster reef mound was created using river rock cultch material that was 10 feet wide and 2 feet in height. Lake Sabine's oysters are closed to oyster harvest.

B. Non-government and Private

In addition to the projects above, the Galveston Bay Foundation has conducted oyster restoration projects in the Galveston area.

Mitigation

There are currently no programs in place for granting or receiving mitigation credits for shellfish restoration projects in Texas.

VIRGINIA

Shellfish Management at a Glance

The following provides a brief reference to regulatory permitting programs applicable to shellfish restoration in Virginia. Related permitting details are discussed in subsequent sections.

A. Coastal Program

- Responsible agency: Virginia Department of Environmental Quality (DEQ)
- Relevance: Manages coastal resources and handles federal consistency reviews
- Website: <http://www.deq.virginia.gov/Programs/CoastalZoneManagement.aspx>

B. Submerged Lands

- Responsible Agency: Virginia Marine Resources Commission (VMRC) (Habitat Management Division)
- Relevance: Permitting and leasing of state-owned submerged lands.
- Components:
 - Title 28.2 of the Virginia Code
- Website: <http://mrc.virginia.gov/hmac/hmoverview.shtm>

C. Fisheries Management

- Responsible Agency: Virginia Marine Resources Commission (VMRC)
- Relevance: Manages and regulates the states commercial and recreational fisheries.
- Website: <http://www.mrc.virginia.gov/fmac/fmoverview.shtm>

D. Shellfish Aquaculture

- Responsible Agency: Virginia Department of Agriculture and Consumer Services
- Relevance: Manages aquaculture activities.
- Website: <http://www.vdacs.virginia.gov/>

E. Shellfish Sanitation

- Responsible Agency: Virginia Department of Health Shellfish Sanitation Division
- Relevance: Manages recreational and commercial shellfish harvesting for public health purposes in accordance with the National Shellfish Sanitation Program Guidelines
- Website: <http://www.vdh.state.va.us/environmentalhealth/shellfish/>

Submerged Lands Leasing

Shellfish restoration projects may require leasing of state-owned submerged lands. This section discusses the role of state-owned submerged lands, the availability of King's or Crown grants, and other aspects of leasing submerged lands for restoration projects.

A. State-Owned Submerged Lands

- The state owns submerged lands from mean low tide line to three miles offshore.
- Public trust rights: include fishing, fowling, hunting, and taking of oyster and other shellfish.³²⁷
- Riparian rights to shellfish: Rights of riparian owners extends to mean low water mark.³²⁸ VMRC may assign oyster planting grounds to riparian owners.³²⁹

B. Leasing Process

- *Generally*: VMRC may grant a lease, easement, or other limited interest in state-owned bottomlands.³³⁰ State may lease beds of the waters of the Commonwealth outside of the Baylor Survey, which are areas where naturally growing oyster beds were delineated in surveys performed 1892-94.³³¹ Lease period may not exceed 5 years and may not interfere with public trust rights.³³²
- *Regular oyster ground lease*: Non-riparian and grounds outside the Baylor survey may be leased for the purpose of planting or propagating oysters.³³³
- *Riparian oyster ground lease*: Riparian owners of upland with a minimum of 205 linear feet along a tidal waterway are eligible to apply for a riparian oyster ground lease.³³⁴ Riparian owners will have exclusive right to use the grounds for planting or gathering oysters and clams.³³⁵

³²⁷ VA. CODE ANN. § 28.2-1200.

³²⁸ *Id.* § 28.2-1202.

³²⁹ *Id.* § 28.2-600

³³⁰ *Id.* § 28.2-1200.1.

³³¹ *Id.* § 28.2-1208.

³³² *Id.*

³³³ *Id.* § 28.2-603.

³³⁴ *Id.* § 28.2-600.

³³⁵ *Id.* § 28.2-601.

C. King or Crown Grants

Land grants can be from the king or the commonwealth.³³⁶ A royal grant of land bounded by navigable waters, which under English common law meant tidal waters, conveyed no title to subaqueous beds.

D. Conservation Leasing

No provisions authorizing the leasing of submerged lands for conservation were found.

Permitting Shellfish Restoration

A. Regulating Agencies

- Virginia Marine Resources Commission (Lead agency)
- USACE

B. Permitting Process

Restoration projects will generally require permitting for use of environmental resources, sovereign submerged lands, and federal dredge and fill. To simplify permitting, the state has combined these needs into one joint permit application under the Virginia water protection permit program called the Tidewater Joint Permit Application.³³⁷ The permit relates to impacts to surface waters, such as dredging and filling in open water, streams, and wetlands.³³⁸ The Virginia water protection program is administered by Virginia Department of Environmental Quality.

Tidewater Joint Permit Application:

The Tidewater JPA form may be used for most commercial and noncommercial projects in tidal waters, tidal wetlands, and coastal primary sand dunes and beaches in Virginia that require the review and/or authorization by local wetlands boards, the VMRC, the Department of Environmental Quality, and/or the USACE.

The JPA has a general permit used for permitting oyster gardening called the Abbreviated JPA for Noncommercial Riparian Shellfish Aquaculture Structures. The application may be used for permits to deploy up to 160 square feet of aquaculture structures in the tidal

³³⁶ May 3, 1982 Attorney General Opinion ([1982 Va. AG LEXIS 209](#)).

³³⁷

http://www.deq.virginia.gov/Portals/0/DEQ/Water/WetlandsStreams/Revised_Tidewater_JPA_FillableForm_MAR2014.pdf

³³⁸ *Id.*

waters of Virginia, for the noncommercial culture of shellfish.³³⁹ If a project does not qualify for an abbreviated JPA, applicants must submit the Standard Joint Permit application form.³⁴⁰

USACE Permitting:

The Norfolk District of the USACE oversees federal dredge and fill permitting in Virginia. The VWP application process combines the federal wetlands permitting needs into a joint application. The VMRC will review the permit application first and then forward the application on to the applicable USACE office. Virginia allows for use of USACE NWP 27³⁴¹ (aquatic habitat restoration) subject to specific regional conditions. Any restoration work done under NWP 27 requires pre-construction notification in most circumstances. Regional Conditions for NWP 27 include: 1) the placement of shell material or any other habitat development or enhancement is restricted to shellfish species that are native to that waterbody, and 2) For activities affecting Essential Fish Habitat, the Corps will consult with NMFS for the PCN.

Regional General Permits: This district also has Regional General Permits (RP) that may be applicable to oyster restoration projects.

- 13-RP-19, Regional Permit 19 (RP) Activities authorized by this RP include living shorelines, riprap revetments, bulkheads, breakwaters, groins, jetties, spurs, baffles, aquaculture activities and boat ramps. Allows placement of native oyster shell, limited to 1 acre in size. [RP 19 Letter of Permission](#)
- 11-RP-20, Regional Permit 20 authorizes the creation of artificial reefs and dredging of old shellfish reefs, when the material will be used to create new or enhance reefs owned, operated or managed by the Commonwealth of Virginia. [RP 20 Letter of Permission](#)

Any projects not qualifying for a general permit will have to submit an Individual Permit.

C. Shellfish Restoration Permitting Snapshot

- Virginia Water Protection Permit: Shellfish restoration projects will require a Tidewater JPA
 - Tidewater Joint Application:
 - Submit to VMRC.

³³⁹ <http://www.mrc.virginia.gov/forms/abbrjpa.pdf>.

³⁴⁰ http://www.nao.usace.army.mil/Portals/31/docs/Revised_Standard_JPA_FillableForm_MAR2014.pdf

³⁴¹ <http://www.nab.usace.army.mil/Portals/63/docs/Regulatory/Permits/spn12-32.pdf>

- USACE Individual Permit: only needed if project does not fall within NWP 27 or RGP. Coordinated through the Tidewater JPA.
- Submerged lands lease from VMRC.

D. Research & Conservation Permitting

There are experimental fishery permits that allow for the removal of marine fish, marine shellfish, and marine organisms for technical research, scientific education, or museum purposes³⁴² Anyone wishing to participate in an experimental fishery must first obtain a permit. The Fisheries Management Division and Conservation and Replenishment Division issue all experimental fishery permits. Section 28.2-205 of the Code of Virginia makes it unlawful for any person to remove from the waters of the Commonwealth under the jurisdiction of the Marine Resources Commission any marine fish, marine shellfish, or marine organisms for technical research, scientific education or museum purposes without having first obtained from the Commissioner a collection permit. The issuance of a permit shall be governed by applicable Commission regulation and shall be subject to any reasonable terms and conditions imposed by the Commissioner.

E. Restoration in Closed Waters

No provision was found expressly prohibiting shellfish restoration projects in closed waters.

Protecting Existing Reefs and Restoration Projects

A. Reef Closure for Non-Public Health Concerns

VMRC may close public grounds to protect and promote the growth of oysters Va. Code Ann. 28.2-507. The VMRC may close the grounds to harvest when the Oyster Replenishment Department determines that the standing stock of oysters has been depleted by 50% or more. The initial estimate of standing stock for each area is the volume of oysters as of October 1 of the current year as determined by the Oyster Replenishment Department.³⁴³

B. Sanctuaries & Other Protected Areas

- Sanctuaries are areas where the harvest of oysters is prohibited.³⁴⁴

³⁴² <http://www.mrc.virginia.gov/regulations/fm-permits.shtm#ef>.

³⁴³ 4 VA. ADMIN. CODE 20-720-30.

³⁴⁴ 4 VA. ADMIN. CODE 20-650-10 et seq. establishes sanctuary areas pursuant to authority in VA. CODE ANN. §§ 28.2-201 and 28.2-507.

- No property interest may be conveyed in Baylor oyster grounds, which are areas where naturally growing oyster beds were delineated in surveys performed 1892-94.

C. Other Tools for Protecting Shellfish Restoration Projects

- VMRC itself may “establish seed beds and plant shells and other culch, or ... take any other restorative measures” to “promote the growth of oysters.” § 28.2-507.
- Permits for private piers extending more than 100 feet may include design requirements to minimize the adverse impact on such oyster or clam grounds. Va. Code Ann. § 28.2-1205 (West)
- Marinas should not be sited close to areas of very high natural resource value such as shellfish beds, seagrass communities and areas frequented by endangered species.

Oyster Management Generally

The wild oyster fishery is managed by the Division of Fisheries Management of the VMRC. This section does not address oyster aquaculture which is managed by the Virginia Department of Agriculture and Consumer Services.

A. Oyster Harvesting

This section details the general requirements for oyster harvesting, including licenses, seasons, and other relevant details.

- Season:
 - VMRC established oyster harvest season by area in 4 VAC 20-720-40.
 - VMRC day and time limits: unlawful to take oysters Saturday and Sunday from the public oyster grounds or unassigned grounds in the waters of the Commonwealth of Virginia, for commercial purposes. Also, unlawful to harvest oysters prior to sunrise or after 2 p.m.
- Licenses: Type of license dependent on harvesting method: by hand; tongs; single and double rigged patent tong; dredge on public ground; hand scrape ([Link to List of Licenses](#))
- Harvesting equipment:
 - Unlawful to use patent tongs to take or catch oysters from public beds in statutorily defined areas. Va. Code Ann. § 28.2-508.
 - Permit required for dredging or scraping on private ground 28.2-515.
 - Unlawful for any person to use dredges, scrapes, rakes other than hand rakes, or other like devices to take or catch crabs, clams, or shells from the public

rocks, beds, or shoals on the ocean side of the Counties of Accomack and Northampton. 28.2-519

- Use of hydraulic dredges prohibited, exceptions, including for aquaculture research and for VMRC and VIMS 28.2-520
- Season for shaft tongs or by hand from the public oyster beds: Oct 1- July 1 for James River seed area and all other areas from Oct. 1 until June 1.³⁴⁵ VMRC may extend the season until June 30.
- Season for patent tongs from the public oyster beds from Oct. 1 to March 1.³⁴⁶
- Quotas/harvest limits³⁴⁷
 - 8 bushels per day for commercial fishermen licensees

B. Public, Private, and Natural Reef Distinctions

The VMRC oversees regulation of public oyster grounds and shellfish aquaculture leases. Artificial reefs are also managed by VMRC.³⁴⁸

- Natural oyster beds: The Virginia state constitution provides “The natural oyster beds, rocks, and shoals in the waters of the Commonwealth shall not be leased, rented, or sold but shall be held in trust for the benefit of the people of the Commonwealth, subject to such regulations and restriction as the General Assembly may prescribe, but the General Assembly may, from time to time, define and determine such natural beds, rocks, or shoals by surveys or otherwise.”³⁴⁹
 - Natural oyster beds encompass the Baylor grounds, which are areas where naturally growing oyster beds were delineated in surveys performed 1892-94.³⁵⁰

Existing Shellfish Restoration Efforts

A. Government

- The USACE Eastern Shore Division has conducted 4 large scale restoration projects in Virginia. The projects include Tangier Island a 160 acre oyster restoration project consisting of a 10 acre sanctuary component and the rest of the project was constructed for the put and take fisheries; Rappahannock River a 100 acre oyster restoration consisting of a 10 acre sanctuary component and the rest of the project for the put and take fisheries; Great Wicomico River was an 85 acre oyster

³⁴⁵ VA. CODE ANN. § 28.2-506.

³⁴⁶ *Id.*

³⁴⁷ 4 VA. ADMIN. CODE 20-720-80.

³⁴⁸ <http://mrc.virginia.gov/vsrfd/reef.shtm>

³⁴⁹ Va. Const. art. XI, § 3.

³⁵⁰ VA. CODE ANN. § 28.2-551.

sanctuary project; and the Lynnhaven River in Virginia Beach where a 55 acre oyster sanctuary was created. The Tangier Island project has been heavily poached and is need of repair. The Rappahannock River and Great Wicomico River project are being managed by the state. The USACOE Eastern Shore Division is conducting research on these projects and has been working with environmental groups to determine the best nearshore sites to install oyster restoration projects at; in order, to both control erosion and provide ecological services. They are presently conducting a lot of work with local groups in the Lynnhaven River due to its higher salinity and warmer waters which increase the chance of success for oyster restoration projects.

- Authorized by § 28.2-542 of the Virginia Code, the Oyster Replenishment Fund is only used for administration of the program and for replenishment, planting, and replanting the public oyster rocks, beds, and shoals of Virginia, with seed oysters, oyster shells, or other material that will catch, support, and grow oysters.

B. Non-government and Private

- TNC's Virginia Coast Reserve
http://www.mcatoolkit.org/Field_Projects/Field_Projects_US_Virginia.html
- VCU Rice Rivers Center piloted a successful Richmond regional effort to collect restaurant-generated oyster shells for the purpose of enhancing the Chesapeake Bay oyster restoration efforts at sanctuary sites, called the Virginia Oyster Shell Recycling Program (VOSRP).

Mitigation

The Norfolk District of the US Army Corps of Engineers and the City of Virginia Beach have worked together to evaluate the potential of using oyster reefs as a Chesapeake Bay Total Maximum Daily Load (TMDL) Best Management Practice.³⁵¹

The City of Virginia Beach is developing a cost share program for living shorelines projects that help them meet their TMDL requirements.

³⁵¹ <http://www.vims.edu/GreyLit/VIMS/sramsoe429.pdf>;
<http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/lynnhaven.cfm>

WASHINGTON

Shellfish Management at a Glance

The following provides a brief reference to regulatory permitting programs applicable to shellfish restoration in Washington. Related permitting requirements are addressed in subsequent sections.

A. Coastal Program

- Responsible Agency: Department of Ecology
- Relevance: Regulates activities taking place in the coastal zone.
- Website: <http://www.ecy.wa.gov/>

B. Submerged Lands

- Responsible Agency: Department of Natural Resources
- Relevance: Oversees leasing of and permitting of activities on state owned aquatic lands.
- Website: <http://www.dnr.wa.gov/>

C. Fisheries Management

- Responsible Agency: Department of Fish and Wildlife
- Relevance: Manages the state's fish and wildlife resources.
- Website: <http://wdfw.wa.gov/>

D. Shellfish Aquaculture

- Responsible Agencies: Department of Fish and Wildlife, Department of Health
- Relevance: Regulate shellfish aquaculture.
- Websites: <http://wdfw.wa.gov/> and <http://www.doh.wa.gov/CommunityandEnvironment/Shellfish/CommercialShellfish/ApplyforaLicense>

E. Shellfish Sanitation

- Responsible Agency: Department of Health
- Relevance: Sets boundaries for sanitary harvest of shellfish.
- Website: <http://www.doh.wa.gov/>

Submerged Lands Permitting

Shellfish restoration projects may require leasing of state-owned aquatic lands. This section discusses the role of state-owned aquatic lands, availability of King's or Crown grants, and other aspects of leasing submerged lands for restoration projects.

A. State-Owned Submerged Lands

- At statehood in 1889, Washington's Constitution established state ownership to the "beds and shores of all navigable waters in the state . . ." (Article XVII). These lands are called aquatic lands and are further subdivided into bedlands, which are below the extreme low tide; tidelands, which are between the ordinary high tide line and the extreme low tide line; and, shorelands, which are along the edge of rivers and lakes. Generally, the state owns the bedlands and either the state or private parties may own the tidelands.³⁵²
- Public Trust Rights: navigation, commerce, fisheries, recreation, and environmental quality.³⁵³
- Riparian rights: No specific provisions found regarding riparian rights to shellfish resources in Washington. Washington is a "nonriparian" state, meaning that aquatic lands are owned by all the people of the state, not individuals. Although owners of lands abutting state-owned aquatic lands did not receive "riparian" rights at statehood, for more than 80 years they could purchase tidelands or shorelands from the state. In 1971, the sale of the state's aquatic lands was stopped by the state Legislature.

B. Leasing Process

- *Generally:* The use of state-owned lands requires an authorization from the Department of Natural Resources through an agreement, lease, permit, or other instrument.³⁵⁴ To obtain a DNR authorization, applicants must submit Attachment E "Aquatic Use Authorization on Department of Natural Resources-managed lands" with the Joint Aquatic Resources Permit Application (JARPA) discussed in the permitting section below.
 - First and second class tidelands and shorelands may be leased for up to 55 years.³⁵⁵ Abutting upland owners receive lease preferences for these tidelands and shorelands.³⁵⁶

³⁵² See http://www.dnr.wa.gov/Publications/aqr_aquatic_land_boundaries.pdf.

³⁵³ *Weden v. San Juan Cnty.*, 135 Wash. 2d 678, 684 (1998)

³⁵⁴ Wash. Admin. Code 332-30-122.

³⁵⁵ WASH. REV. CODE ANN. § 79.125.200.

³⁵⁶ *Id.* at 79.125.400.

- Beds of navigable waters: the DNR may lease to the abutting tidelands or shorelands owner or lessee, the beds of navigable waters lying below the line of extreme low tide in waters where the tide ebbs and flows, and below the line of navigability in lakes and rivers.³⁵⁷
- Harbor Areas. Leases must conform with 79.115.100.
- *Aquaculture*: DNR is authorized to lease state-owned aquatic lands for the cultivation of oysters, clams, and other shellfish. Aquaculture leases for state aquatic lands are handled by DNR's Aquatics Districts.³⁵⁸

C. King or Crown Grants

When Washington was admitted to the Union, it became the owner of all land underlying both the navigable waterways and tidal waters within its borders as a part of its sovereignty. No specific reference to King or Crown Grants of submerged lands conveyed prior to statehood.

D. Conservation Leasing

The state's conservation leasing program authorizes private entities to undertake conservation activities on state-owned aquatic lands, including intertidal and subtidal lands. The lease or license establishes a landlord-tenant relationship and transfers some management authority of the property from DNR to the project proponent for the term of the authorization. Using existing statutory authority, the DNR developed guidelines outlining the program.³⁵⁹

The Aquatic Reserves Program allows DNR to establish reserves to protect ecosystems. The lands must be of special educational or scientific interest or of special environmental importance threatened by degradation. Activities within a reserve must support the purpose of the reserve and will often equate to conservation activities. Aquatic reserves are designated for a 90-year term. DNR manages the reserve by preventing conflicting land use activities in or near the reserve through lease actions. Leases in the reserves may require an environmental assessment through the State Environmental Protection Act Process. No lease fee is required.³⁶⁰

³⁵⁷ *Id.* at 79.130.010.

³⁵⁸ <http://www.dnr.wa.gov/AboutDNR/Regions/AQR/Pages/Home.aspx>.

³⁵⁹ http://www.mcatoolkit.org/pdf/WADNR_guidelines.pdf.

³⁶⁰ Wash. Admin. Code 332-30-151. *See*

http://www.dnr.wa.gov/ResearchScience/Topics/AquaticHabitats/Pages/aqr_rsve_aquatic_reserves_program.aspx

Permitting Shellfish Restoration

A. Regulating Agencies

- Department of Natural Resources (Lead agency)
- USACE
- Local Governments

B. Permitting Process

Restoration projects will generally require permitting for use of environmental resources, sovereign submerged lands, and federal dredge and fill. To simplify permitting, the state has combined these needs into one joint permit application under the Shoreline Management program, called the Joint Aquatic Resources Permit Application (JARPA).³⁶¹ The JARPA may be used for projects that require the review and or authorization by USACE, DNR, local governments, and tribes. However, not all cities and counties accept the JARPA for their local shoreline permits.

SEPA:

As part of the permitting process, the lead state agency or county will conduct a State Environmental Policy Act (SEPA) review. If the project is on state-owned lands, then the review will be performed by the Department of Natural Resources. For non-state owned lands, the Department of Fish and Wildlife may conduct the review. For privately owned lands, the county will do the SEPA review. If the project is on both public and private lands, counties will assume the role of lead agency and do the SEPA review for a fee. Some projects may be exempt from SEPA review.

Tribal Interests:

When submitting the JARPA, applicants are advised to send notice to appropriate tribes. To determine the appropriate tribe to notify, contact the Northwest Indian Fisheries Commission at <http://nwifc.org/>.

Aquatic Resources Permit:

A Joint Aquatic Resources Permit Application (JARPA) along with Attachment E must be submitted to the District Office of the Department of Natural Resources where the project is located. The application must also be submitted to the Seattle District of the USACE. In addition, where a local shoreline permit is required (below), the JARPA should be sent to the appropriate local government.

³⁶¹ See <http://www.epermitting.wa.gov/> or http://www.epermitting.wa.gov/Portals/_JarpaResourceCenter/images/default/JARPA%202012%20Attachment%20E.pdf

Shoreline Development Permit:

Substantial development permits (SDPs) are required for all developments (unless specifically exempt) that meet the legal definition of “substantial development.”³⁶² Not all cities and counties accept the JARPA for their local shoreline permits. If a shoreline permit is required, contact the appropriate city or county government to make sure they accept the JARPA.

SDPs cannot be approved unless they are consistent with policies and procedures of the Shoreline Management Act, Department of Ecology rules, and the local master program.³⁶³ Local government may condition the approval of permits if needed to ensure consistency of the project with the act and the local master program. Generally, SDPs are reviewed and processed by local governments and subsequently sent to Ecology for filing.

USACE Permitting:

The Seattle District of the USACE oversees federal dredge and fill permitting in Washington. Washington allows for use of NWP 27 (aquatic habitat restoration) with conditions. Pre-construction Notification (PCN) must be submitted to the Corps. In addition, restoration projects involving shellfish seeding must use shellfish naturally present within watershed to be considered a restoration proposal under NWP 27.

Any projects not qualifying for a nationwide permit will have to submit an Individual Permit.

C. Shellfish Restoration Permitting Snapshot

- Shellfish restoration projects will require a JARPA and submerged land use authorization (Attachment E) from the DNR.
 - JARPA: Submit to DNR, USACE, and local governments.
 - Notify Tribes when JARPA is submitted
- USACE Permitting:
 - Shellfish restoration may qualify for NWP 27 but will still require **preconstruction notification (PCN)**.
 - Individual Permit: only needed if project does not fall within NWP 27.

D. Research & Conservation Permitting

No provisions found for research or conservation projects in Aquatic Resource Permitting provisions.

³⁶² WASH. REV. CODE ANN. § 90.58.30.

³⁶³ Wash. Admin. Code 173-27-150.

E. Restoration in Closed Waters

Restoration in closed waters is allowed.

Protecting Existing Reefs and Restoration Projects

A. Reef Closure for Non-Public Health Concerns

The DNR and the Commissioner of Public Lands may withdraw lands from leasing.³⁶⁴

B. Sanctuaries & Other Protected Areas

The Washington State Department of Fish and Wildlife (WDFW) has established Marine Protected Areas (MPAs). Limited takes are allowed.

- http://marineprotectedareas.noaa.gov/helpful_resources/states/washington.html

C. Other Tools for Protecting Shellfish Restoration Projects

- Shellfish protection districts: The legislative authority of each county having shellfish tidelands within its boundaries is authorized to establish a shellfish protection district to include areas in which nonpoint pollution threatens the water quality upon which the continuation or restoration of shellfish farming or harvesting is dependent.³⁶⁵

Oyster Management Generally

This section details the general requirements for oyster harvesting, including licenses, seasons, and other relevant details. This section does not address oyster aquaculture, which is regulated by the Washington Department of Health and the Washington Department of Fish and Wildlife. Washington also regulates clams and mussels.

A. Oyster Harvesting

This section details the general requirements for oyster harvesting, including licenses, seasons, and other relevant details.

³⁶⁴WASH. REV. CODE ANN § 77.12.380

³⁶⁵ WASH. REV. CODE ANN. § 90.72.030.

Recreational

- Season: Year-round except as noted on the [Public Beach List](#)
- License: Shellfish license required.
https://fishhunt.dfw.wa.gov/wdfw/licenses_fees.html
- Harvesting Requirements: Min. size 2½" measured across longest distance of shell. Daily limit 18. Oysters must be shucked on the beach. Oysters consumed on the beach count toward a limit. Must leave shells on the same tideland and tide height where they were taken.³⁶⁶

Commercial

- Season: WDFW director designates.³⁶⁷
- License:
 - Oyster reserve fishery license required.³⁶⁸
 - DOH issues several types of commercial fishing licenses for companies that commercially harvest and sell molluscan shellfish.³⁶⁹
 - Commercial clutching requires permit.³⁷⁰
- To harvest from shellfish growing areas, the area must have a certificate of approval.³⁷¹
- Harvesting Requirements: The WDFW director designates requirements. May also be required to notify the appropriate Tribe.

B. Public, Private, and Natural Reef Distinctions

The Department of Fish and Wildlife oversees the regulation of natural oyster beds. The Department of Ecology issues and oversees oyster leases. Washington does not have an artificial reef program.

Existing Shellfish Restoration Efforts

A. Government

³⁶⁶ Wash. Admin. Code 220-56-385. http://wdfw.wa.gov/fishing/shellfish/statewide_rules.html

³⁶⁷ *Id.* at 220-60-020.

³⁶⁸ WASH. REV. CODE ANN § 77.60.050.

³⁶⁹ <http://www.doh.wa.gov/CommunityandEnvironment/Shellfish/CommercialShellfish>

³⁷⁰ WASH. REV. CODE ANN §77.60.050.

³⁷¹ Wash. Admin. Code 246-282-012.

- Washington Shellfish Initiative: The Washington State Shellfish Initiative is a convergence of the National Oceanic and Atmospheric Administration's (NOAA) National Shellfish Initiative and the State's interest in promoting a critical clean water industry. <http://pcsga.org/wprs/wp-content/uploads/2013/04/Washington-Shellfish-Initiative.pdf>
- Washington DFW Plan for rebuilding Olympia Oyster Populations in Puget Sound http://www.westcoast.fisheries.noaa.gov/publications/aquaculture/olympia_oyster_restoration_plan_final.pdf
- Intertidal Shellfish Enhancement Program: WDFW's shellfish program has planted several public beaches with oysters, clams, and geoducks. Some beaches have increased harvest opportunity as a result of enhancement activities. If a beach is open for clams, mussels, or oysters, harvest is encouraged on these beaches.
- Volunteer Cooperative Fish and Wildlife Enhancement Program: Under this program, a cooperative project can receive funding from Fish and Wildlife. WAC Chapter 220-130.

B. Non-government and Private

- TNC's Port Susan Bay project: acquire fee-simple ownership of a large tract of intertidal lands for preservation and restoration purposes. http://www.mcatoolkit.org/Field_Projects/Field_Projects_US_Washington_2_Port_Susan_Bay.html
- TNC's Woodard Bay Oyster Restoration: http://www.mcatoolkit.org/Field_Projects/Field_Projects_US_Washington_1_Woodard_Bay.html
- Olympia Oyster Restoration Project: A community-based effort reestablishing Washington's only native oyster restores an essential component of the marine ecosystem and builds diverse partnerships. <http://www.cooperativeconservation.org/viewproject.asp?pid=725>
- Puget Sound Restoration Fund <http://www.restorationfund.org/projects>

Mitigation

Shoreline master program planning and additional planning processes are preferred means for identifying and mitigating adverse impacts on resources and uses of statewide value. In the absence of such planning directed to these values and uses, the Department of Natural Resources will mitigate unacceptable adverse impacts on a case-by-case basis by the following methods in order of preference: (a) Alternatives will be sought which avoid all adverse impacts (b) When avoidance is not practical, alternatives shall be sought which cause insignificant adverse impacts. (c) Replace, preferably on-site, impacted resources and uses of statewide value. It must be demonstrated that these are capable of being replaced (d) Payment for lost value, in lieu of replacement, may be accepted from the aquatic land

user in limited cases where an authorized use reduces the economic value of offsite resources, for example, bacterial pollution of nearby shellfish beds.³⁷²

³⁷² Wash. Admin. Code 332-30-107.