

Site Selection and Permitting For Shellfish Aquaculture: An Overview for Prospective Producers

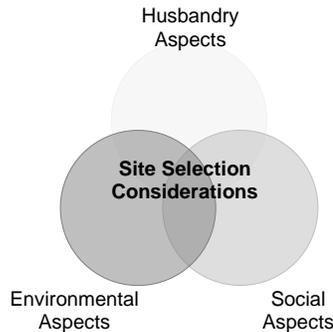
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Tessa Getchis, Connecticut Sea Grant and Department of Extension, University of Connecticut

Introduction

PART 1: SITE SELECTION

There are many factors to consider when selecting a site for shellfish aquaculture including both husbandry and regulatory aspects. For all aquaculture operations, access to high quality water is essential. The prospective producer should assess the biological, physical, and chemical characteristics of the site. Prospective producers should be familiar with the growing area classification, as Restricted or Conditional areas may require relaying of shellfish to Approved waters prior to harvest. Other site considerations include proximity to shoreline resources such as fuel, ice, storage facilities and transportation, as well as acceptable routes of access to/from the site.



From a regulatory perspective, the prospective producer must consider the potential social and environmental effects of any proposed aquaculture activity, as state and federal legislation requires evaluation of these factors. The principal concerns with respect to the interaction of shellfish aquaculture and the environment are generally considered to be: water quality degradation, changes in sediment chemistry and composition, habitat degradation, altered biodiversity and community structure, introduction of non-native species including predators, pests and disease, spread of harmful algal blooms, and the loss of genetic diversity in wild shellfish populations. Careful consideration should also be given to other existing uses and natural resources at the site to avoid use conflicts and prevent or minimize adverse effects to the environment.

Both husbandry and regulatory aspects of site selection should always be considered *prior* to obtaining lease rights and/or investing in aquaculture gear. Contact your State Aquaculture Coordinator or designated aquaculture agency to identify available areas.

Husbandry Factors

The prospective producer should be familiar with the characteristics of the culture site and understand the factors that may affect production, such as:

- Biological (e.g. phytoplankton abundance, spat availability, occurrence of predators, fouling organisms)
- Physical (e.g. hydrodynamics, bottom topography, sediment type, turbidity)
- Chemical (e.g. salinity, pH, conductivity, and dissolved gases such as oxygen, carbon dioxide, ammonia)

Regulatory Factors - Environmental

It is important to determine if the activity or gear has the potential to adversely affect environmental factors, such as:

- Species abundance
- Species diversity

- Essential fish habitat
- Endangered species
- Water quality
- Sediment composition and transport

The gear should be able to withstand forces of nature, and often this must be verified by a professional engineer. Prospective producers should have a contingency plan for gear failure.

Regulatory Factors - Social

Since most shellfish aquaculture occurs in public trust areas, it is important to ensure that the proposed activity will not prevent or limit other common or historical/cultural uses of these areas, such as:

- Navigation (e.g. shipping, ferry routes, designated or common fairways)
- Commercial uses (e.g. fishing)
- Recreational uses (e.g. fishing, pleasure boating, moorings or anchorages)
- Safe ingress and egress for riparian owners
- Public access to the site

It is also important to consider the potential visual and audio disturbance that the activity may cause. Will the facility, vessels, gear or maintenance be operational during early AM or late PM hours? Will this be acceptable to the surrounding community?

PART 2: PERMITTING

Gaining Access to a Site

Once one or more potential culture sites have been identified, the prospective producer must obtain permission to utilize the site(s). The State Aquaculture Coordinator or designated aquaculture agency will provide either a lease or license agreement.

Lease rights may provide exclusive rights to shellfish on the bottom and allow the producer to cultivate/harvest shellfish within a defined term, often 5-10 years or more. Whereas license agreements are usually less formal and shorter term, and with limited rights provided to producers. Preventing public use in leased or licensed areas usually not allowed.

Having a lease or license does not provide the right to place aquaculture structures or fill (e.g. cultch material). These activities fall under a separate permitting process discussed below.

Acquiring Permits for Aquaculture Activity

The use of any cultivation structures (e.g. bags, cages, long lines, predator netting, etc.) or placement of fill (e.g. shellfish cultch material) in navigable waters is regulated by a joint state-federal permitting review process. The U.S. Army Corps of Engineers (USACE) is the lead agency that regulates aquaculture activities in coastal waters and adjacent wetlands¹.

Federal regulation prohibits unauthorized obstruction or alteration of any navigable waters and requires USACE approval for any work that may affect the course, condition, location or capacity of navigable waters. In addition, the federal Coastal Zone Management Act (CZMA) requires the USACE to ensure that the structure and activity are in compliance with the state's approved Coastal Zone Management Plan. Federal law also prohibits activity that results in more than minimal adverse effects on aquatic resources. As such the USACE evaluates the potential effects of proposed structures and/or activity on endangered species and protected habitats². USACE seeks input from local and state resource managers, the U.S. Environmental

¹ Jurisdiction for the regulation of structures falls under (1) Rivers and Harbors Act of 1890, and (2) Clean Water Act of 1977.

² The Fish and Wildlife Coordination Act and the Magnuson-Stevens Fishery Conservation Act provide the authority for the evaluation of impacts to fish and wildlife and habitats.

A BASIC OVERVIEW OF THE SITE SELECTION AND PERMITTING PROCESS

Site Selection

- Assess site characteristics including husbandry (biological, physical and chemical) and regulatory (environmental and/or social) aspects
- Consult with State Aquaculture Coordinator or designated aquaculture agency to identify available culture areas

Gaining Access to a Site

- Apply with State Aquaculture Coordinator or designated aquaculture agency to identify secure lease or license agreement

Acquiring Permits to Place Gear

- Application submitted to State Aquaculture Coordinator or designated aquaculture agency
- Application forwarded to Army Corps and other local, state and federal agencies as applicable
- Army Corps reviews potential navigation and use conflicts and seeks comments from other agencies regarding potential adverse environmental and social effects

Other Requirements

- Other permits, licenses and/or certifications may be required. All local, state and federal permissions must be received before work can begin.

Protection Agency, NOAA's National Marine Fisheries Service, U.S. Fish and Wildlife Service, and other agencies depending on potential effects of the proposed activity.

Permits to Place Gear and/or Fill

The U.S. Army Corps of Engineers *Programmatic General Permit (PGP)* is the regulatory mechanism used to authorize the placement of structures or fill in navigable waters in most Northeast U.S. states. Each

individual state has its own version of the PGP, and the PGPs undergo revision and review every five years. To streamline the permitting process, the application for the PGP is usually submitted to the State Aquaculture Coordinator or designated state aquaculture agency, and the application then undergoes a joint review process which includes multiple federal, state, and in some cases, local resource managers.

Nationwide Permit 48 (NWP 48) is the regulatory mechanism used to authorize the placement of structures or fill in navigable waters of all coastal areas with exception of most Northeast states. NWP 48 undergoes revision and review every five years.

The review process for either type of permit can take several months, and this should be a consideration when planning aquaculture projects.

Other Regulatory Requirements

Depending on the type, size, scope and geographical location of the proposed activity, additional permits, licenses and or certification may be required. These may include, but are not limited to the following:

- Shellfish Import Permit
- Informational/Gear Marker Buoy Permit
- Hazard Analysis and Critical Control Points Training and Certification
- Boat/Crew Permits
- Aquaculture Operations Certificate

Written authorization from local, state and federal agencies is required before any activity begins or gear can be placed in the water.

Summary

When selecting a site for aquaculture, it is important to learn the biological, physical and chemical characteristics of the site, and understand how these factors may affect

production. In addition, the potential for adverse environmental and social effects limit where aquaculture activity can occur. Understand possible effects and/or use conflicts before obtaining lease rights and/or investing in aquaculture gear.

The permitting process for shellfish aquaculture is complex and varies depending on the type, size, scope and geographic location of proposed activity, and the potential for adverse environmental and social effects. Prospective producers should have a clear understanding of state, federal and local requirements with respect to the proposed activity, and allow adequate time for application review. When possible, seek out local experts to help address concerns related to the culture site.