

Cultured Hard Clam Handling and Harvesting

Technical Bulletin Number 4

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Regulatory Facts

- Hard clam farmers must acquire an Aquaculture Certificate of Registration.
- Harvesting can only occur between sunrise and sunset.
- Every effort should be made to deliver hard clams to a certified shellfish processor as soon as possible.
- Boats and vehicles must be constructed, operated or maintained to protect hard clams from contamination.
- Hard clams can only be harvested from waters classified as Approved or Conditionally Approved.

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Food Safety Is the Number One Priority

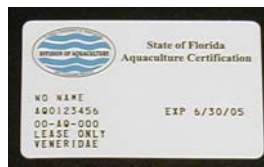
The National Shellfish Sanitation Program (NSSP) is the federal/state cooperative program recognized by the U.S. Food and Drug Administration and the Interstate Shellfish Sanitation Conference (ISSC) for the sanitary control of shellfish produced and sold for human consumption. Shellfish (oysters, clams, mussels and whole scallops) filter small food particles out of the water column to feed and, if not properly managed, can concentrate toxins or pathogenic microbes. The purpose of the NSSP is to promote and improve the sanitation of shellfish moving in interstate commerce through federal/state cooperation and uniformity of the State shellfish programs.

Florida implements the NSSP through Comprehensive Shellfish Control Code, Aquaculture Certificate of Registration, and Aquaculture Best Management Practices Manual. These programs are supported by state law and described in Administrative Rules. Enforcement is carried out by the Department's Shellfish Sanitation Inspectors, Office of Agricultural Law Enforcement, and the Florida Fish and Wildlife Conservation Commission's Division of Law Enforcement.

The first priority for the shellfish farmer must be food safety. All of the shellfish sanitation laws or rules, inspectors and officers are useless if shellfish farmers willfully, or in ignorance, disregard requirements to insure the culture and delivery of safe, wholesome shellfish. This technical bulletin is devoted to reviewing cultured hard clam handling and harvesting requirements. The Department welcomes farmer involvement to improve these requirements. Please contact David Heil with your suggestions at 850-488-5471.

Licensing Requirements: Aquaculture Certificate ("AQ" card)

All aquaculture leaseholders, subleaseholders, or "sharecroppers" are required to obtain an aquaculture certificate. The certificate identifies the aquaculturist, his/her lease, product, and facility. Personnel employed by a leaseholder



are covered under the leaseholder's certificate number. Persons who are not employees but are "sharecropping," engaged in culturing and harvesting hard clams from leases other than their own, must obtain an authorized user

acknowledgement and a separate aquaculture certificate number.

The AQ card must be renewed each year at a cost of \$100 and is valid from July 1 to June 30. The card is embossed plastic and can be carried while on the water.

Harvesting and Transporting

Harvesting and transporting of hard clams must be conducted between sunrise and sunset as established by the U.S. Weather Service.

Hard clams must be delivered directly to a certified shellfish processor.

Washing (tumbling) must occur: (1) in open harvesting waters (on or adjacent to the lease site), (2) at specific upland aquaculture facilities authorized to participate in the "Pilot Program for Washing Hard Clams," or (3) at certified shellfish processors.

Hard clams must be placed under mechanical refrigeration within specified times:

- During **November, December, January, February, and March** hard clams must be delivered to a certified dealer by 10:00 pm of the same day as harvest.
- During **April, May and October** hard clams must be delivered to a certified dealer within 12 hours of the time of harvest or within the same day as harvested, whichever is earlier.
- During **June, July, August and September** the harvester shall assure that clams shall be delivered to a certified shellfish dealer within 10 hours of the time of harvest or within the same day as harvested, whichever is earlier.

These times are the maximums. **Every effort should be made to deliver products directly to a certified shellfish processor as soon as possible.** Earlier delivery is required for shellfish processors approved to temper hard clams.

NOTE: The intent of the maximum time limits for harvesting are to provide reasonable time to harvest, transport hard clams to the shore and to directly deliver clams to a nearby certified shellfish processor. Transporting hard clams long distances on land to distant certified processors by harvesters is not authorized. Transporting hard clams long distances on land must be conducted by certified shellfish processors under mechanical refrigeration at 45°F or less.

Boat and Vehicle Requirements

Boats must be registered as a commercial vessel and comply with U.S. Coast Guard vessel requirements.



All boats must be designed and built to prevent hard clams from coming in contact with bilge water.

Boats and vehicles

must be constructed, operated and maintained so as to protect hard clams from contamination.

Fuel tanks or other sources of contamination must not come in contact with hard clams.

No dogs or other animals are allowed on the boat at any time.

Boats must have a portable toilet or other sewage disposal receptacle that will not spill on board. No bodily wastes may be discharged

overboard from a harvest boat. Hard clams must be protected from exposure to sun, birds and other adverse conditions by effective shading on harvest boats and vehicles.

Hard Clams must be held under conditions which allow air circulation and promote evaporative cooling. Do not use nonporous material that does not "breathe" and will trap heat (for example plastic or vinyl tarps or sheeting).

Harvesting Water Classifications

Hard clams can only be harvested from waters in areas classified as Approved or Conditionally Approved for shellfish harvest and that are currently open according to the area management plan. When rinsing hard clams during harvesting activities only use waters that are currently open.

To obtain shellfish harvesting maps, classifications of waters, and the open/closed status of waters visit the Division's web site at <http://www.FloridaAquaculture.com>, call David Heil, Alan Pierce, or Chris Brooks at 850-488-4033, or call the Division's five regional offices:

Panhandle Region:

Apalachicola
(850) 653-8317
Panama City
(850) 236-2200

Big Bend Region: Cedar Key
(352) 543-5181

Southwest Region: Punta Gorda
(941) 833-2552

East Coast Region: Palm Bay
(321) 984-4890

Managing Shellfish Harvest Areas

The Division of Aquaculture monitors the quality of the water that shellfish live in by establishing management plans for Shellfish Harvest Areas (SHAs). These plans prescribe environmental sampling of 1,490,000 acres of state waters within 37 SHAs on a routine basis to insure that the shellfish sold by Florida producers is free of marine toxins and disease causing bacteria and viruses.

How does the Division manage the SHAs? It is an exhaustive effort that requires continuous data collection and analysis.

Every 12 years the Shellfish Environmental Assessment Section (SEAS) completes a comprehensive survey for each harvest area, looking for sources of fecal coliforms, pathogenic organisms, poisonous substances and marine biotoxins.

Next, rainfall is examined on a daily basis using gauge stations throughout the drainage basin. River stage or discharge are likewise recorded daily. Shoreline surveys are conducted, looking at soil suitability for domestic waste disposal systems.



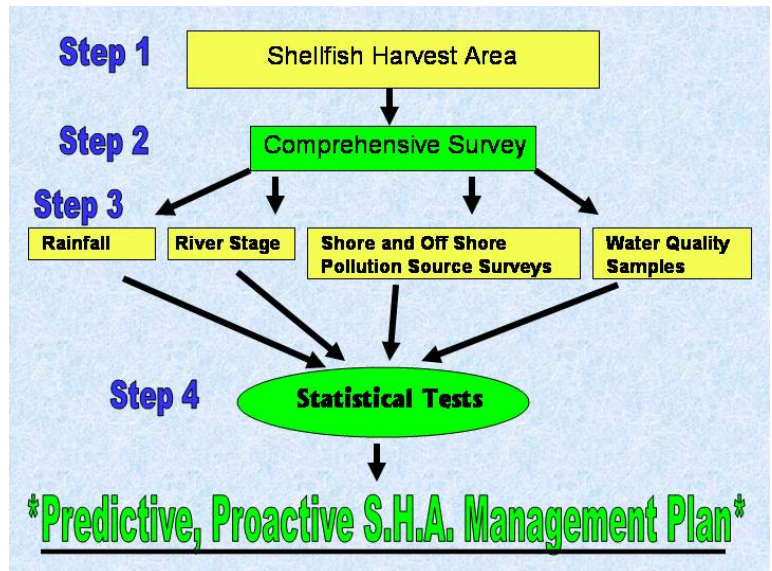
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Fishing and hunting camps, silviculture, agriculture, domestic animal farms, wildlife populations, boat traffic, marinas, septic systems, canal systems and waste water treatment plants are examined and enumerated.

After gathering water samples from multiple sampling stations on numerous excursions, SEAS staff analyze the data file using statistics. The goal

of this effort is to find a relationship between fecal coliform densities and rainfall and/or river stage/discharge. This allows the accurate, predictive closing of shellfish harvesting waters before any pollution reaches our bays.

If rainfall amount and/or river stage/discharge exceed the SHA's management plan, the area is closed. Staff resample as quickly as possible and reopen the area on good sample re-



sults. There is a delay of a few days as the samples must generally be delivered by overnight courier, processed by the staff at the lab, and enumerated after a 24-hour incubation.

The Shellfish Environmental Assessment Section continually collects water quality, rainfall and river stage/discharge data, reevaluates management plans every three years, and annually reviews land use information to adjust management plans.

For additional information contact David Heil or Chris Brooks at 850-488-4033 or the Division's regional offices.

Harvester Tagging

Harvesters must place a durable and waterproof tag that is at least 2-5/8 inches by 5-1/4 inches in size on each hard clam container (bag). The tag must list the following information in the order presented:

1. Harvester's Aquaculture Certificate of Registration number or Saltwater Products License number.

2. Date of harvesting.
3. Time of harvest.
4. Identification of the harvest area.
5. Common name of the shellfish and quantity of shellfish.
6. The following statement:

"THIS TAG IS REQUIRED TO BE ATTACHED UNTIL CONTAINER IS EMPTY AND THEREAFTER KEPT ON FILE FOR 90 DAYS."

Aquaculturists harvesting under an aquaculture certificate may use a bulk tag for each harvest location that includes all of the above information plus the name of the certified shellfish dealer where the product is to be delivered.



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COMMISSIONER OF AGRICULTURE

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*Safeguarding the public, protecting
the environment, and supporting
Florida's aquacultural economy.*



Our thanks to Leslie Sturmer, Florida Sea Grant Program,
for assistance in developing this technical bulletin.

Visit

<http://www.FloridaAquaculture.com>
for Florida aquaculture information.

Important Contact Information

Florida Department of Agriculture and Consumer Services
Division of Aquaculture
Telephone: 850-488-5471
E-mail: david.heil@freshfromflorida.com

Office of Agricultural Law Enforcement
Telephone: 850-245-1300
After hours toll-free number:
1-800-342-5869

Florida Fish and Wildlife Conservation Commission
Division of Law Enforcement
Telephone: 850-488-6251
FWC Wildlife Alert Program
1-888-404-3922
Website: <http://myfwc.com/>

University of Florida, Florida Sea Grant Program
Shellfish Aquaculture Extension Specialist
Telephone: 352-543-5057
E-mail: lnst@ufl.edu
Website: <http://shellfish.ifas.ufl.edu/>

Exhaustive Testing to Insure Food Safety

Creating, implementing, and maintaining a Shellfish Harvest Area management plan requires continuing collection and analysis of water samples from shellfish growing areas. The Division of Aquaculture's Shellfish Laboratory in Apalachicola provides the analysis and processes up to 2,000 samples a month. Laboratory staff members follow strict U.S. Food and Drug Administration (FDA) guidelines while testing water and shellfish meat samples for the presence of fecal coliforms. Fecal coliforms are bacteria that live in the intestinal tract of warm-blooded animals. Their presence signals the potential presence of human disease threats.

A basic outline of the procedure is as follows: The lab prepares for the receipt of water samples by cleaning and sterilizing thousands of test tubes, lids, special growth media, and other items. Arriving samples are examined for proper

temperature and volume. Three sets of five increasingly smaller sub samples of each individual water sample are created. Lab staff quickly place the fifteen samples into an array of test tubes, each filled with growth media and a single tiny, inverted glass tube. Racks of test tubes are placed in a large air incubator for three hours, then transferred to water bath incubators for the remainder of a 24 hour period.

After incubation, staff examine each test tube. The presence of gas formation in the tiny inverted glass tube confirms fecal coliforms. The numbers of bacteria are expressed in units of Most Probable Number per 100 milliliters. Lab staff then send reports to the regional offices. The offices use this data to establish whether a shellfish harvest area may be reopened.



Not only is the Division's Shellfish Lab evaluated by FDA every three years, the laboratory also performs extensive in-house quality checks. Every piece of testing machinery is repeatedly checked for accuracy. For example, air incubator and water bath temperatures are checked twice daily and recorded. The water bath is only allowed a plus or minus 0.2°C variation in temperature. The lab's two autoclaves are tested every time they are used with a special heat-sensitive tape to insure complete sterilization. Viable bacterial spores are also loaded into the autoclave, subjected to its tremendous pressure and heat, removed and then placed in growth media to see if the spores can grow. The quality checks are so intensive even the soap used to clean the test tubes is subjected to rigorous testing. Nothing is left to chance.

The Shellfish Laboratory in Apalachicola is an excellent example of people and technology working behind the scenes to insure that farm-raised Florida hard clams are wholesome and safe to eat.