Connecticut's Shellfish Growing Area Program

RECREATIONAL SHELLFISH PROGRAMS AND THE NATIONAL SHELLFISH SANITATION PROGRAM MODEL ORDINANCE (NSSP-MO)

> Alissa Dragan, Supervising Environmental Analyst Department of Agriculture, Bureau of Aquaculture Gathering of the Shellfish Commissions, January 21, 2023

DoAG Staff

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National Shellfish Sanitation Program



The Bureau of Aquaculture Implements the NSSP-MO

NSSP_MO Chapter 1 @1 A-F and @2 A-H:

- Growing Area
 Vibrio
- Shellfish Sanitation
 Enforcement



National Shellfish Sanitation Program (NSSP)

Guide for the Control of Molluscan Shellfish 2019 Revision





DoAG NSSP-MO Responsibilities

DoAG is the responsible Agency for ensuring the safety of molluscan shellfish for human consumption. DOAG Analysts oversee CT shellfish production from the growing areas through the distribution chain

- Growing Area Classification
- Growing Area Management (Closures & Openings)
- Regulate Shellfish Harvest, Processing, Sale, & Shipment
- Biannual Harvester, Processor, & Dealer Inspections
 & Illness Investigations
- Aquaculture Permitting, Including Inland Fish Farming & Seaweed
- Laboratory: Seawater & Shellfish Bacteriological, Viral, & Vibrio Testing, HAB Monitoring Program, Shellfish Pathology, & Evaluations for CT Dairy Industry

Why do we need a shellfish sanitation program?

Shellfish are effective filter feeders & can concentrate pathogens or other contaminants as they feed

Shellfish are consumed RAW with no cook step to kill any pathogens that may be present

Shellfish are often grown near shore

They are sessile & captive to their environment & cannot move away from contaminants

Contaminants may be pollutionrelated or naturally occurring



Feeding and respiration in bivalves

Source: Aquascope http://www.vattenkikaren.gu.se/defaulte.html

Growing area classifications





Sanitary Survey

- Written evaluation of all environmental factors
- Including <u>actual</u> and <u>potential</u> pollution sources, which have a bearing on the water quality in a shellfish growing area

Shoreline Survey

- Shoreline of every town with classified growing areas is walked, and every property within the designated survey area is visually inspected
- Individual properties are inspected for signs of failing septic systems, cross connections to stormwater system, and other potential sources of pollution
- Water pollution control facilities, industrial discharges, storm sewers, and pump stations are evaluated
- Marina surveys are performed to evaluate the potential for contamination by boats discharging waste



Sampling Requirements

- Vary Depending on Classification
- Approved Stations APC
- Conditionally Approved Open & Reopening
- Conditionally Approved Seasonal Open & Reopening
- Restricted & Prohibited No Samples Required



Sampling Requirements

Conditionally Approved Open Samples

Monthly water samples are *required* when the growing area is in the *open* status of its conditional classification

If a monthly sample cannot be collected due to environmental constraints, the monthly sampling requirement will be satisfied if an additional water sampling run is conducted the *following month* Adverse Pollution Condition Samples (APC)

A minimum of five (5)

samples shall be collected annually under adverse pollution conditions from *each sample station* in the growing area

A **minimum** of the most recent fifteen (15) samples collected under APC from **each** sample station shall be used to calculate the median or geometric mean and percentage to determine compliance with this **Reopening Samples**

The closure time period shall be **at least fourteen (14) consecutive days** when environmental conditions are suitable for shellfish feeding and cleansing, unless shorter time periods are demonstrated to be adequate

CT DoAG policy:

Minimum 7 day closure with reopening on the 8th day following the collection of satisfactory seawater &/or shellfish tissue samples

Important

- Status Open/Closed?
- Rainfall APC?
- Schedule samples with DoAG Analyst or Lab staff at least 24 hours prior to collection
- *Tides* Start 1.5 hours after high Stop - 1.5 hours after low
- **Processing Time Limits** Seawater 30 hours Shellfish – 24 hours



STATE OF CONNECTICUT DEPARTMENT OF AGRICULTURE Bureau of Aquaculture & Laboratory Services

Director

2021 Shellfish Commission Guidance

The Department of Agriculture, Bureau of Aquaculture (DoAG) staff work to minimize the risk of illness associated with Connecticut shellfish. Compliance with Food and Drug Administration (FDA) standards maintain the integrity of our laboratory and sample results. DoAG only performs FDA-approved laboratory procedures.

The following sampling requirements were outlined by the FDA, and are essential to obtaining representative results:

	Water Samples	Shellfish Meat Samples				
Scheduling	Please schedule all samples with DoAG prio	r to collection. The Department of Public				
	Health can only process water samples, and also requires advanced scheduling.					
Tides	 Can start sampling 1 ½ hours after high 	There are no tide requirements for meat				
	tide (ebb tide)	samples. Commissions that need to dig				
	• Cannot sample longer than 1 ½ hours	during low tide must time collection and				
	after low tide (flood tide)	delivery to lab appropriately.				
Sample sheets	Please provide COMPLETE sheets with your	samples, including collection time.				
	This is critical, and will allow us to give you r	esults sooner.				
тс	A temperature control (TC) must be provi	ded and be between 0-10 $^{\circ}\mathrm{C}$ at time of				
	delivery.					
Ice	Samples must be iced immediately following collection, and transported and delivered					
	on ice. Please ensure samples are not floatir	ng in ice melt.				
Lab	Monday-Thursday (please deliver no later	Monday-Wednesday (please deliver no				
availability	than 12pm on Thursday)	later than 12pm on Wednesday)				
Time limits	Samples must be processed within 30	Samples must be processed within 24				
	hours of collection	hours of collection				
Collection	Please use the sterile sample bottles	Please use a clean air-tight bag.				
containers	provided by DoAG.					
Sample	Please provide 1 labeled bottle per station,	Please provide 15 shellfish per sample in				
amount	with a minimum of 100mL/sample.	a labeled bag.				
Unacceptable	The following will NOT be processed:	Cracked, gaping, or dead shellfish				
samples	 Cracked sample bottles 	cannot be used in sample processing. If				
	Frozen samples/samples containing ice	12 intact, live shellfish are not provided,				
	 Samples without an airspace 	the sample will not be processed.				

To schedule sample delivery, or for general questions, please contact: Alissa Dragan, Environmental Analyst III Alissa, Dragan@ct.gov 860-818-7034 (cell)

To report a potential harmful algal bloom, or for questions about HABs, please contact: Emily Van Gulick, Fisheries Biologist I Emily.VanGulick@ct.gov 860-929-6414 (cell)

P.O. Box 97, Milford, CT 06460 Affirmative Action/Equal Employment Opportunity Employer

Sample Form & Tracking

Sample Form:

- Town & Tax Code
- Collector(s)
- Date & Tide Stage (E, L)
- Station ID
- Time of Collection
- Area Sampled
- Area Status (O/C)
- APC Sample Run?
- Note anything unusual, large flock of birds, odors, discolored water, etc.

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X (10 ml) = <10 ->800 CFU XX (1 ml) = <100 ->8000 CFU

Common Mistakes

- No TC provided; TC too hot or frozen
- Broken bottle
- Lid not securely affixed
- No air space, too much airspace
- Bottles submerged in cooler water
- Incomplete, or no sample sheet provided





2021 Laboratory Processing:

- 5221 Total Samples Processed
- 4843 Seawater Samples Processed
- 139 Shellfish Tissue Samples Processed
- 9 MSC Samples Processed
- 217 Plankton Samples Processed
- 15 PSP Samples Processed



National Shellfish Sanitation Program Bacteriological Standards

NSSP Fecal Coliform Criteria for an Approved area: Geometric Mean of membrane filtration (MF) colony forming units (CFU) shall not exceed 14 CFU/100 mL,

AND not more than 10% of samples shall exceed an MF of 31 CFU/100mL

To meet the Approved Criteria, it takes 8 million cubic feet of dilution water to dilute one person's waste in one day

59,850,779 gallons

Volume equal to 12 football fields covered in 10 feet of water

Why do we need to provide tissue samples?

 NSSP-MO Stipulates that the closure time period shall be at least fourteen (14) consecutive days when environmental conditions are suitable for *shellfish feeding and cleansing* unless shorter time periods are demonstrated to be adequate A growing area temporarily placed in the closed status..., shall be returned to the open status only when:

The emergency situation or condition has returned to normal and sufficient time has elapsed to allow the *shellstock* to reduce pathogens or poisonous or **deleterious substances** that may be present in the shellstock to acceptable levels. When pathogens are of concern, studies establishing sufficient elapsed time shall document the interval necessary for reduction of coliform levels in the shellstock to pre-closure levels. Such coliform studies may establish criteria for reopening based on coliform levels in the water.

Sanitary Survey Sanitary Survey must be up to date

APC Samples

- Target sampling to include rainfall amounts greater than your current closure trigger to determine impacts of various rainfall events
- Ideally on day 0-4, or
- Within the 7 day closure period

How can we upgrade our closure trigger?

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Other Considerations

The dataset should adequately cover all seasons & rainfall amounts under which the area will be open

What else can DoAG do for my Commission?

- Produce maps for your recreational permits and commercial shellfish lease sites
- Permit shellstock restocking activities:
 - **Recreational Relay license required to move shellstock from one area to another**
 - **Reopening license may be required depending on source of relayed product**
 - Scientific/Resource Assessment license
- Shellfish pathology

Questions?

Alissa Dragan <u>Alissa.dragan@ct.gov</u> 860-818-7034 https://portal.ct.gov/DOAG/Aquaculture1/Aquaculture/Aquaculture-Home-Page



