Recreational Shellfish Management and New Sampler Training Protocols

2026 Gathering of the Shellfish Commissions
CAES, New Haven, CT
!/24/26

DoAG Staff:

Administration:

- **Director,** David Carey
- **Administrative Assistant,** Lori Scianna

Shellfish Laboratory:

- **Fisheries Biologist II (Marine),** Dairy LEO, Joseph DeCrescenzo
- **Fisheries Biologist I (Marine),** Andrea Anne Staak
- **Shellfish Pathologist,** Dr. Lydia Bienlien

Boat Operations:

- **Vessel Captain,** Chris Terentiuk

Shellfish Sanitation Program:

- **Supervising Environmental Analyst,** Alissa Dragan
- **EA III, Shellfish Standardization Officer,** Jenifer Yeadon
- **EA II, HAB Specialist,** Emily Marquis
- **EA II, GIS Specialist,** Michal Zuber
- **EA I, Aquaculture Permitting,** Matt Bartell
- **EA I,** Maylani Velazquez

What We Do

- Implement the NSSP-MO:
  Growing Area
  Shellfish Sanitation
  Laboratory
  Enforcement – DEEP Law Enforcement
- NSSP-MO
  Produced biennially
  FDA, SSCA, Industry work collaboratively
  to create and refine regulations
  ensuring the safety of molluscan shellfish
  for human consumption

National Shellfish Sanitation Program (NSSP)

Guide for the Control of Molluscan Shellfish

2023 Revision

From the U.S. Food and Drug Administration website
https://www.fda.gov/nssp

What We Do – Other Services

- 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

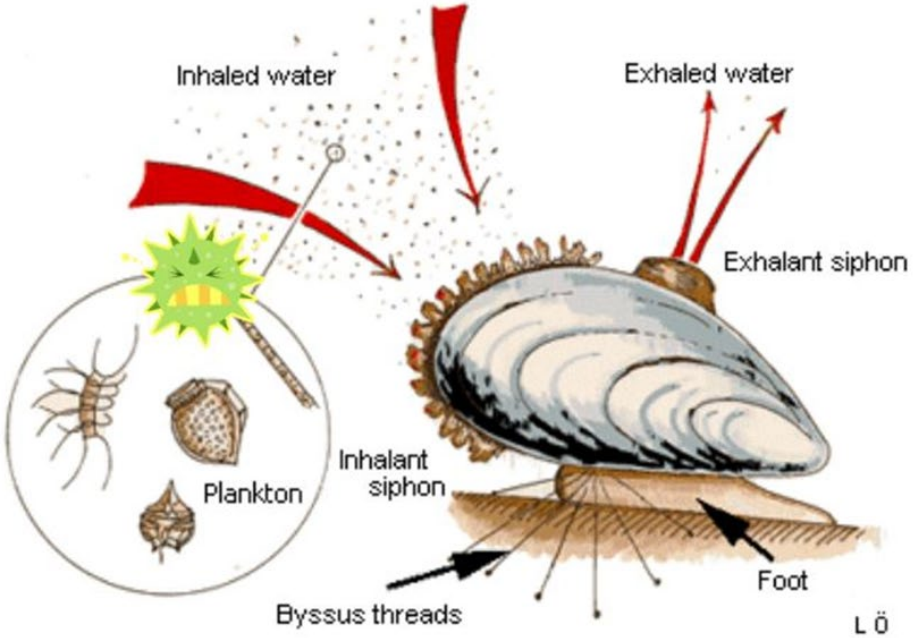
NSSP-MO Responsibilities Include

- Growing area classification and management (sampling, closures & reopenings)
- Regulate shellfish harvest, processing, sale, & shipment
- Biannual and triannual wholesale dealer inspections
- Aquaculture permitting including inland fish farms and seaweed
- Illness Investigations
- Laboratory Evaluations for CT dairy industry

NSSP Responsibilities by the Numbers

- Growing areas: 69 statewide
  Samples processed 2025:
  4,173 fecal coliform seawater samples
  200 fecal coliform meat samples
  75 MSC meat samples & 3 MSC seawater samples
  33 Vibrio samples
  159 Plankton samples
  120 Special study pollution tracking fecal coliform seawater samples
- Shellfish Sanitation: a minimum of 126 Wholesale Dealer Inspections annually

Why do we need a Shellfish Sanitation Program?



Feeding and respiration in bivalves

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

- Shellfish are filter feeders, concentrating pathogens and contaminants from the environment as part of their feeding process
- Shellfish are consumed RAW with no cook step to kill pathogens present in their meats
- Shellfish are grown near shore sources of pollution (natural or man made)
- Shellfish can not move away from sources of contamination

Growing Area Classifications

- Classifications are based on the results of a Shoreline Survey
- *Every* shoreline property impacting a growing area must be physically inspected by DoAg staff for potential sources of pollution to the growing area
- If DoAg can not complete a survey in a particular area due to denied access, the impacted waters will be classified as Prohibited
- If the Survey report is not completed on time, the area shall be placed in the closed status (@01. C (2))

Growing Area Classifications

- Walk shoreline
  Identify, map & classify pollution sources, collect water samples
- Failing or suspect SSDS, WPCF performance, marinas & moorings, Industrial discharges, pipes, animal wastes, hydrographic impacts, population density, impervious surfaces, etc.
- Water & tissue sample results should support survey findings but ARE NOT the basis of classifications

Growing Area Classification

- Consistent
  - Approved
  - Conditionally Approved (Includes Seasonal Areas)
  - Restricted
  - Prohibited

Growing Area Status

- Changes due to conditions
  - Administratively Closed
  - Closed (Rainfall, Elevated Results, Sewage, HAB, etc.)
  - Open

Growing Area Classifications

Approved

- No direct discharges of wastewater effluent
- Not indirectly impacted by wastewater effluent
- Not subject to contamination from human or animal fecal matter at levels of public health concern
- Not contaminated with:
  Pathogenic organisms
  Poisonous or deleterious substances
  Marine biotoxins
- Meets NSSP Bacteriological Standards

Conditionally Approved

- No direct discharges of wastewater effluent
- May be indirectly impacted by wastewater effluent
- Not subject to contamination from human or animal fecal matter at levels of public health concern
- Not contaminated with:
  Pathogenic organisms
  Poisonous or deleterious substances
  Marine biotoxins
- Meets NSSP Bacteriological Standards under specific conditions (rainfall, seasonal, etc.)

Growing Area Classifications

Restricted

- May be indirectly impacted by wastewater effluent
- May be impacted by a limited degree of pollution
- Shellfish are relayed, i.e., transplanted onto a direct harvest bed for a minimum of 2 weeks
- Following relay, shellfish tissues are sampled for fecal coliform bacteria prior to market harvest
- Does not meet NSSP Approved Bacteriological Standards under most conditions

Prohibited

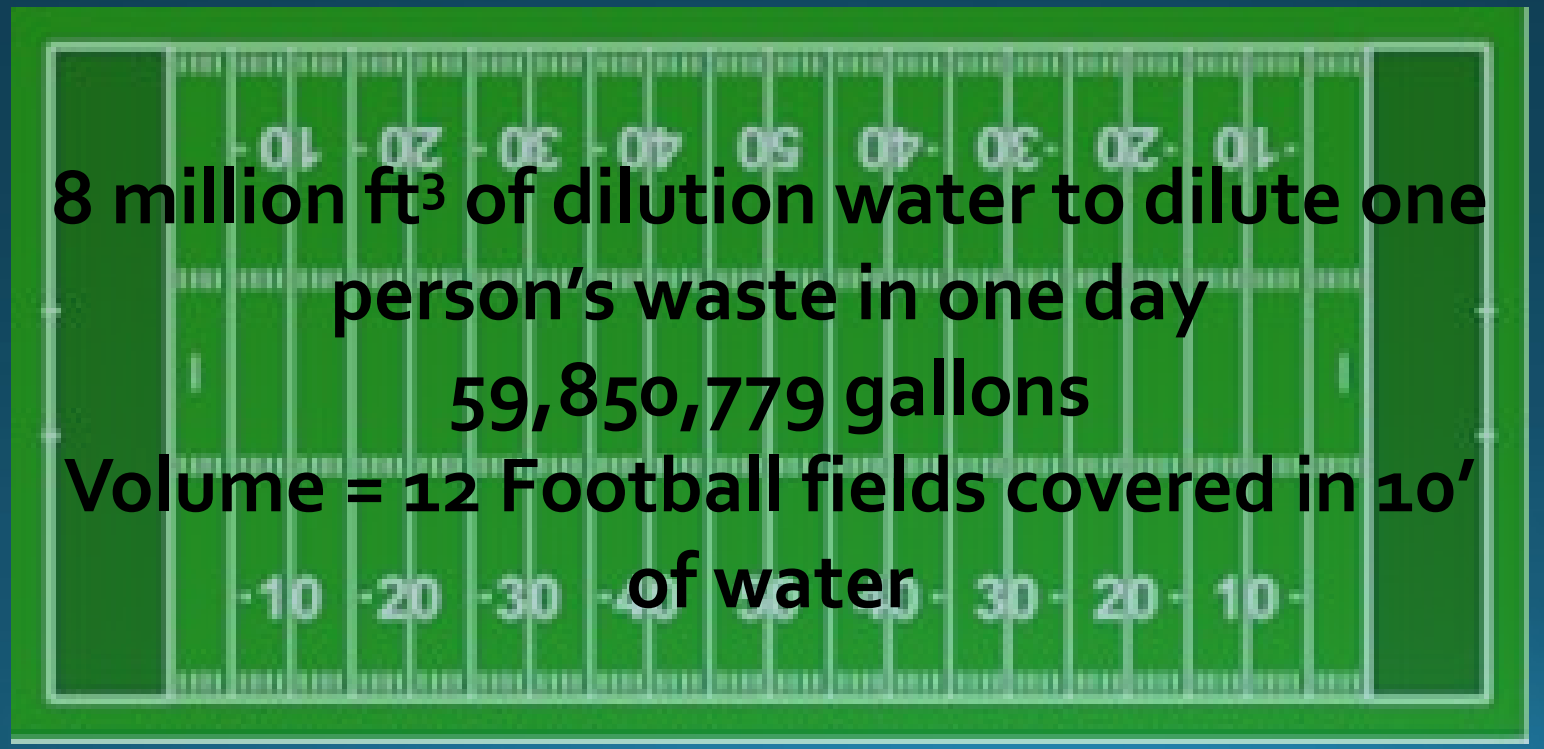
- Growing area is adjacent to a WPCF outfall or other significant point source of pollution
- Pollution sources that contaminate the areas are unpredictable
- Seed oystering only allowed activity
- Growing area is contaminated with fecal waste
- Concentrations of biotoxin have been found in the shellfish
- Area contaminated with poisonous or deleterious substances (PCB's, heavy metals, etc.)
- Does not meet NSSP Approved Bacteriological Standards under most conditions

NSSP 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



8 million ft^3 of dilution water to dilute one person's waste in one day

59,850,779 gallons

Volume = 12 Football fields covered in 10' of water

NSSP Growing Area Requirements

- Growing Area classifications and supporting data from surveys shall be reviewed and updated annually and triennially
- A 3-year data set is evaluated to verify the growing area meets the NSSP standards:
  - 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 adverse pollution conditions from each sample station shall be used to calculate the geometric mean and ten (10) percent criteria of the data to determine compliance with this standard*
- "If the annual reevaluation determines that conditions have changed based on the information and data collected during the annual review and that the growing area classification is incorrect, **immediate action shall be initiated to reclassify the area.**"

NSSP Sampling Requirements

- **Monthly Open Status** – Seawater samples from all CA Stations
- **Adverse Pollution Condition Samples** – Seawater samples from all CA & A stations, can be open or closed status. Collected within 4 days of >0.5" rain event
- **Reopening Samples**:
  Seawater samples required to lift precautionary Approved Closures
  Seawater samples required to lift Conditionally Approved Closures prior to day 15
  Shellfish meat samples required to lift Conditionally Approved Closures prior to day 15 until a verification study is completed

New Sampler Training Protocols

Required for

- New paid or volunteer samplers
- Samplers who have not been trained by DoAG staff

Recommended for

- Samplers who have not attended the Shellfish Gathering within the past 5 years
- Commission members who do not participate in sampling
- Samplers who received training >10 years ago

One training per Commission/Town will be available annually

Certification Requirements:

- You must be a member of a municipal shellfish commission, or other eligible municipal commission, and be approved by your Commissioner to participate in sampling
- Review the online Volunteer SOP
- Review the Quality Assurance Training Power Point and pass the associated online quiz
- Complete the in-person Sampling Certification with a DOAG staff member

New Sampler Training Protocols

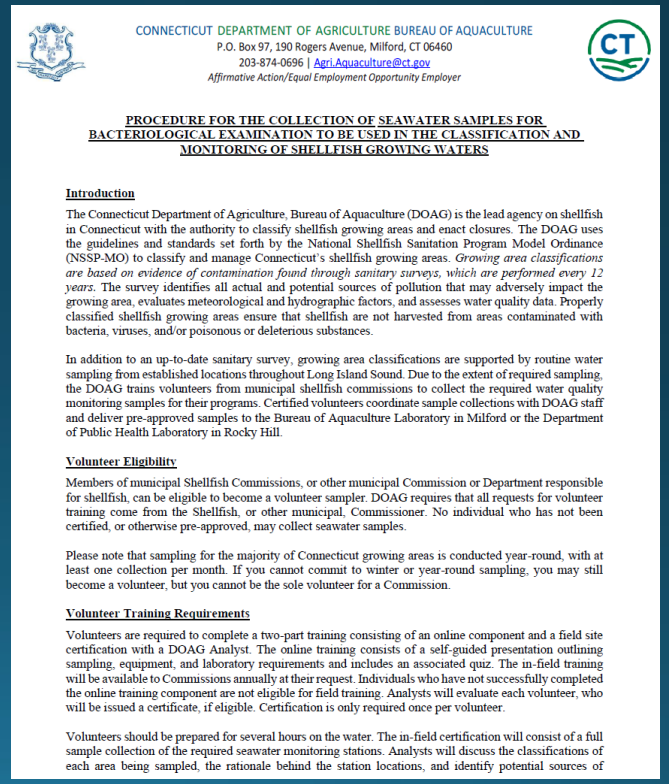
Self Guided Course

Connecticut Department of Agriculture

Bureau of Aquaculture

Water Quality Volunteer Program
Quality Assurance Training

New SOPs



CONNECTICUT DEPARTMENT OF AGRICULTURE BUREAU OF AQUACULTURE
P.O. Box 97, 190 Rogers Avenue, Milford, CT 06460
203-874-0696 | Agri.Aquaculture@ct.gov
Affirmative Action/Equal Employment Opportunity Employer

PROCEDURE FOR THE COLLECTION OF SEAWATER SAMPLES FOR BACTERIOLOGICAL EXAMINATION TO BE USED IN THE CLASSIFICATION AND MONITORING OF SHELLFISH GROWING WATERS

Introduction

The Connecticut Department of Agriculture, Bureau of Aquaculture (DOAG) is the lead agency on shellfish in Connecticut with the authority to classify shellfish growing areas and enact closures. The DOAG uses the guidelines and standards set forth by the National Shellfish Sanitation Program Model Ordinance (NSSP-MO) to classify and manage Connecticut's shellfish growing areas. *Growing area classifications are based on evidence of contamination found through sanitary surveys, which are performed every 12 years.* The survey identifies all actual and potential sources of pollution that may adversely impact the growing area, evaluates meteorological and hydrographic factors, and assesses water quality data. Properly classified shellfish growing areas ensure that shellfish are not harvested from areas contaminated with bacteria, viruses, and/or poisonous or deleterious substances.

In addition to an up-to-date sanitary survey, growing area classifications are supported by routine water sampling from established locations throughout Long Island Sound. Due to the extent of required sampling, the DOAG trains volunteers from municipal shellfish commissions to collect the required water quality monitoring samples for their programs. Certified volunteers coordinate sample collections with DOAG staff and deliver pre-approved samples to the Bureau of Aquaculture Laboratory in Milford or the Department of Public Health Laboratory in Rocky Hill.

Volunteer Eligibility

Members of municipal Shellfish Commissions, or other municipal Commission or Department responsible for shellfish, can be eligible to become a volunteer sampler. DOAG requires that all requests for volunteer training come from the Shellfish, or other municipal, Commissioner. No individual who has not been certified, or otherwise pre-approved, may collect seawater samples.

Please note that sampling for the majority of Connecticut growing areas is conducted year-round, with at least one collection per month. If you cannot commit to winter or year-round sampling, you may still become a volunteer, but you cannot be the sole volunteer for a Commission.

Volunteer Training Requirements

Volunteers are required to complete a two-part training consisting of an online component and a field site certification with a DOAG Analyst. The online training consists of a self-guided presentation outlining sampling, equipment, and laboratory requirements and includes an associated quiz. The in-field training will be available to Commissions annually at their request. Individuals who have not successfully completed the online training component are not eligible for field training. Analysts will evaluate each volunteer, who will be issued a certificate, if eligible. Certification is only required once per volunteer.

Volunteers should be prepared for several hours on the water. The in-field certification will consist of a full sample collection of the required seawater monitoring stations. Analysts will discuss the classifications of each area being sampled, the rationale behind the station locations, and identify potential sources of

Sampler Training

- Self guided course consisting of training slide deck and detailed SOPs
- Online Quiz

- On-Water Training
- Provided following successful completion of online component
- Full Sample run of all Approved and Conditionally Approved Stations
- DoAg staff will describe area classifications and station location rationale
- Samplers must successfully collect samples
- DoAg staff will transport samples to the lab

Sampler Training

Sample Strategy

- Defines sampling strategies
- Outlines sample timing & lab schedule
- Explains how requirements vary by growing area classification

Growing Area Classification Review

- Defines Approved and Conditionally Approved areas
- Explains closure & reopening requirements
- Explains type and number of samples needed by classification

Sampler Training

- Provides a list of required sampling equipment and supplies
- Explains the information you should know before planning your collection
- Explains aseptic sampling procedure and other rules for collection (depth of collection, etc.)
- Review of proper sample storage, delivery timing, and transport requirements
- Proper sample bottle labelling and data to record on the field sheet
- Provides overview of common sampling mistakes

Sampler Training

- Knowledge check – Online Quiz
- 11 Points
- Tests knowledge of key points and common misunderstandings
- Must be successfully completed **prior to** on-water training
- DoAG will evaluate each individual for satisfactory collection and basic knowledge
- Samplers must successfully complete both segments prior to conducting sample collection

Questions?

Alissa Dragan
Alissa.dragan@ct.gov
203-874-0696, etx 119
860-818-7034