2022 CONNECTICUT SHELLFISH COMMISSION GATHERING
CONNECTICUT DEPARTMENT OF AGRICULTURE, BUREAU OF AQUACULTURE
EMILY MARQUIS, FISHERIES BIOLOGIST I
OVERVIEW OF PRESENTATION

- Harmful Algal Bloom Update
- Statewide Shellfish Disease Update
- Per- and Polyfluoroalkyl Substances (PFAS) Update
- Vibrio Update
<table>
<thead>
<tr>
<th>HAB genus</th>
<th>Toxin</th>
<th>Syndrome</th>
<th>Potential effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexandrium</td>
<td>Saxitoxin</td>
<td>Paralytic Shellfish Poisoning (PSP)</td>
<td>Tingling, numbness, burning in extremities or mouth; lack of coordination/staggering; drowsiness; fever; rash; <strong>respiratory difficulty and/or arrest; death</strong> &lt;br&gt;-Gastrointestinal: Nausea, vomiting, diarrhea</td>
</tr>
<tr>
<td>Pseudo-nitzschia</td>
<td>Domoic acid</td>
<td>Amnesic Shellfish Poisoning (ASP)</td>
<td>-Dizziness; headache; disorientation; short-term memory loss; <strong>seizures; respiratory difficulty; coma; long-term neurological damage, including memory defects and weakening/death muscles in extremities; death</strong> &lt;br&gt;-Gastroenteritis usually develops within 24 hours of consumption – nausea, vomiting, abdominal cramps, diarrhea</td>
</tr>
<tr>
<td>Dinophysis</td>
<td>Okadaic acid</td>
<td>Diarrhetic Shellfish Poisoning (DSP)</td>
<td>-Gastrointestinal onset within 30 mins-few hours of consumption: Incapacitating diarrhea, nausea, vomiting, abdominal pain; recovery typically within 3 days &lt;br&gt;-Potential association with cancer (long-term exposure)</td>
</tr>
<tr>
<td>Prorocentrum</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
HAB MONITORING STATIONS (RECREATIONAL SHOWN IN RED)
## ANNUAL NUMBER OF HAB SAMPLES

<table>
<thead>
<tr>
<th>Year</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recreational HAB samples</td>
<td>14</td>
<td>56</td>
<td>83</td>
</tr>
<tr>
<td>Total HAB samples</td>
<td>179</td>
<td>226</td>
<td>244</td>
</tr>
</tbody>
</table>
K. *papilionacea* was detected in Massachusetts and does produce brevetoxins, which are regulated by the FDA; however, *K. papilionacea* produces lower concentrations of brevetoxin than *K. brevis*. *K. brevis* is the most common *Karenia* species that causes red tide in Florida, which is associated with shellfish closures and animal kills. *K. mikimotoi* does not produce brevetoxins, but does cause large blooms in Maine and Massachusetts now and has been associated with fish kills due to hypoxia.
<table>
<thead>
<tr>
<th>Sample Type</th>
<th>Sampled Volume (L)</th>
<th>Concentrated Volume (ml)</th>
<th>Sample Growing Area</th>
<th>Cell Count (K.p. cells/L)</th>
<th>Date Collected</th>
<th>Water Temp (°F)</th>
<th>Salinity (psu)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hard Clam (~20 animals various size)</td>
<td>N/A</td>
<td>N/A</td>
<td>BB3</td>
<td>100</td>
<td>10/13/2021</td>
<td>66.3</td>
<td>31</td>
</tr>
<tr>
<td>Oyster (15 animals)</td>
<td>N/A</td>
<td>N/A</td>
<td>BB1</td>
<td>1150</td>
<td>10/13/2021</td>
<td>66.7</td>
<td>32</td>
</tr>
<tr>
<td>Whole Water</td>
<td>1</td>
<td>N/A</td>
<td>BB1</td>
<td>1150</td>
<td>10/13/2021</td>
<td>66.7</td>
<td>32</td>
</tr>
<tr>
<td>Water Concentrate #1</td>
<td>14</td>
<td>40</td>
<td>BB1</td>
<td>1150</td>
<td>10/13/2021</td>
<td>66.7</td>
<td>32</td>
</tr>
<tr>
<td>Water Concentrate #2</td>
<td>15</td>
<td>40</td>
<td>BB3</td>
<td>5460</td>
<td>10/11/2021</td>
<td>65</td>
<td>32</td>
</tr>
</tbody>
</table>

Brevetoxin was not detected in shellfish or water samples in Massachusetts during this event.
Information provided by Massachusetts Division of Marine Fisheries, Shellfish Sanitation and Management Program
<table>
<thead>
<tr>
<th>Collected</th>
<th>Station</th>
<th>Town</th>
<th>Surface Temp (°C)</th>
<th>Surface Temp (°F)</th>
<th>Surface Salinity</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/6/2021</td>
<td>59-25.0</td>
<td>Groton</td>
<td>19.3</td>
<td>66.7</td>
<td>31.9</td>
</tr>
<tr>
<td>10/6/2021</td>
<td>45-11.1</td>
<td>East Lyme</td>
<td>20.2</td>
<td>68.4</td>
<td>31.1</td>
</tr>
<tr>
<td>10/6/2021</td>
<td>59-6.0</td>
<td>Groton</td>
<td>19.2</td>
<td>66.6</td>
<td>25.6</td>
</tr>
<tr>
<td>10/6/2021</td>
<td>137-8.0</td>
<td>Stonington</td>
<td>19.1</td>
<td>66.4</td>
<td>31.6</td>
</tr>
<tr>
<td>10/6/2021</td>
<td>45-8.1</td>
<td>East Lyme</td>
<td>20</td>
<td>68</td>
<td>30.7</td>
</tr>
<tr>
<td>10/12/2021</td>
<td>84-6.0</td>
<td>Milford</td>
<td>19.9</td>
<td>67.8</td>
<td>27.6</td>
</tr>
<tr>
<td>10/12/2021</td>
<td>51-3.0</td>
<td>Fairfield</td>
<td>19.4</td>
<td>66.9</td>
<td>26</td>
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<tr>
<td>10/13/2021</td>
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<td>West Haven</td>
<td>19.8</td>
<td>64.8</td>
<td>27.5</td>
</tr>
<tr>
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<td>014-5.2</td>
<td>Branford</td>
<td>20</td>
<td>64.8</td>
<td>27.9</td>
</tr>
<tr>
<td>10/25/2021</td>
<td>103-9.1</td>
<td>Norwalk</td>
<td>18.2</td>
<td>64.8</td>
<td>27.6</td>
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<tr>
<td>10/25/2021</td>
<td>35-2.9</td>
<td>Darien</td>
<td>18.6</td>
<td>64.2</td>
<td>27.8</td>
</tr>
<tr>
<td>10/25/2021</td>
<td>158-11.0</td>
<td>Westport</td>
<td>17.9</td>
<td>64.2</td>
<td>27.7</td>
</tr>
<tr>
<td>10/28/2021</td>
<td>27-12.7</td>
<td>Clinton</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10/28/2021</td>
<td>27-2.3</td>
<td>Clinton</td>
<td></td>
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### TROPICAL HABS IN CONNECTICUT

<table>
<thead>
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<th>Collected</th>
<th>Station</th>
<th>Town</th>
<th>Surface Temp (°C)</th>
<th>Surface Temp (°F)</th>
<th>Surface Salinity</th>
</tr>
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<tr>
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<td>66.6</td>
<td>25.6</td>
</tr>
<tr>
<td>10/28/2021</td>
<td>27-12.7</td>
<td>Clinton</td>
<td>19.6</td>
<td>67.5</td>
<td></td>
</tr>
<tr>
<td>10/28/2021</td>
<td>27-2.3</td>
<td>Clinton</td>
<td>19.6</td>
<td>67.5</td>
<td></td>
</tr>
<tr>
<td>11/2/2021</td>
<td>57-18.2</td>
<td>Greenwich</td>
<td>19.0</td>
<td>66.2</td>
<td>31.9</td>
</tr>
<tr>
<td>11/2/2021</td>
<td>14-5.2</td>
<td>Branford</td>
<td>16.4</td>
<td>61.5</td>
<td>28.1</td>
</tr>
<tr>
<td>11/2/2021</td>
<td>57-9.1</td>
<td>Greenwich</td>
<td>16.4</td>
<td>61.5</td>
<td></td>
</tr>
<tr>
<td>11/3/2021</td>
<td>27-2.3</td>
<td>Clinton*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11/3/2021</td>
<td>27-12.7</td>
<td>Clinton</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11/3/2021</td>
<td>59-12.5</td>
<td>Groton*</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>11/8/2021</td>
<td>137-10.0</td>
<td>Stonington</td>
<td></td>
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<td></td>
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<tr>
<td>11/14/2021</td>
<td>57-18.2</td>
<td>Greenwich</td>
<td></td>
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<tr>
<td>11/14/2021</td>
<td>57-9.1</td>
<td>Greenwich</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Karenia papilionacea @ 133 cells/L

Ostreopsis @ 33,373 cells/L
“EAST COAST STORM BRINGING WORST COASTAL FLOODING SINCE 2003 TO PARTS OF MID-ATLANTIC”

...and with it, tropical HABs!

Karenia papilionacea (133 cells/L)

Representative image

Ostreopsis sp. (33,373 cells/L)

Representative image
RESEARCH TO DIRECT MANAGEMENT

- Funded 2022-2023: Transport of microcystin into Greenwich shellfish growing areas
- Future funding (2023-2025?): *Alexandrium* cyst surveys
- Future funding (2023-2025?): *Pseudo-nitzschia* species assemblage and domoic acid monitoring (statewide)
AUGUST PSEUDO-NITZSCHIA BLOOM

*Pseudo-nitzschia* concentrations and domoic acid test results - week of 8/9/2021

- **8/9**
  - 84-L385 negative
  - 84-6.0 24,196 cells/L
  - 84-14.5 40,638 cells/L
  - 84-11.0 11,989 cells/L
- **8/11**
  - 76-4.3 12,778 cells/L
  - 45-10.1 135,003 cells/L
  - 152-12.1 280,892 cells/L
  - 59-L30 negative

**Upward trends:**
- 8/9: 51-3.0 19,446 cells/L
- 8/11: 60-7.0 35,196 cells/L
AUGUST PSEUDO-NITZSCHIA BLOOM

Highest Pseudo-nitzschia concentration recorded yet
WE NEED YOUR HELP TO COVER CT’S COASTLINE...

Please report discolored water, strange marine animal behavior and/or animal kills!

1) Take a sample; 2) take a photo; 3) call DA/BA
NEW FDA REQUIREMENT FOR HAB MONITORING

- In addition to the water quality (results and frequency) and shellfish testing and sanitary survey requirements...
- To open new growing areas where historic HAB data is not available for a hydrographically linked waterbody, the DABA will comply with the newly required 36 samples over 3 years.
2021 SHELLFISH DISEASE UPDATE
SHELLFISH PATHOLOGY METHODS

1997-2016
Histology

2019-2021
Triplex PCR

Roger Williams University
SHELLFISH DISEASE SURVEILLANCE SAMPLING LOCATIONS

1997-2016

NEW YORK

CONNECTICUT

LONG ISLAND

2019-2021

NEW LONDON

Bridgeport

Groton

Old Saybrook

New Haven

Milford

1997-2016 2019-2021

Miles

20

0

Hampton Bays

Long Island Sound

Greenwich

Stamford

Norwich

New London

Bridgeport

0

10

20

Miles

oyster

hard clam
**PATHOLOGY DATA INTERPRETATION**

- **Prevalence:** percent of animals positive in the population (each sample set was typically 30 shellfish)

- **Weighed Intensity:** total of the scores for each individual animal/total number of animals in the sample set. Weighed intensity is used to report findings from any pathology lab, regardless of the method used to do the evaluation, and provides an overall standardized score to assess the level of infection in each group of oysters by each of the parasites.
  
  - **Dermo:** Intensity ratings are: 0.5, very light; 1.0, light; 2.0, light to moderate; 3.0, moderate; 4.0, heavy; 5.0, very heavy. **Populations with weighed intensities above 2.0 usually show noticeable mortality.** Populations with intensities above 2.0 can also show sporadic mortality.

  - **MSX and SSO:** Intensity rating are: 1, light; 2.0, moderate; 3.0, severe. **Populations with weighed intensities of 2.0 and greater usually show noticeable mortality.** Populations with MSX or SSO intensities of 1.5 can show sporadic mortality.
The 1997 outbreak of MSX infection in market size oysters caused serious economic damage to the oyster industry.

The following year, infection spread to seed oyster beds and caused devastating mortality.

Populations began to recover after 2004.

MSX-prevalence in Connecticut oysters has been in steady decline since the 1998 outbreak.

MSX occurs in CT as a co-infection with another haplorosporian parasite, SSO.
ANNUAL AVERAGE PREVALENCE OF MSX AND SSO (1997-2021)

Annual MSX and SSO Prevalences (%)
MSX PREVALENCE BY LOCATION (2019-2021)
ANNUAL AVERAGE MSX WEIGHED INTENSITY (1997-2021)
CT OYSTER DISEASE HISTORY: DERM0

- Dermo is a slow-killing disease.
- It takes up to three years in Connecticut after initial infection for parasite intensities to approach levels high enough to cause death of the oyster.
- Oysters are marketed when they are three to four years old. Consequently, Dermo has not caused significant mortalities in Connecticut’s commercial oyster stocks.
- Dermo-associated mortalities have been detected in areas of unusually slow oyster growth or during restoration efforts when oysters are grown indefinitely.
ANNUAL AVERAGE DERMO PREVALENCE IN CT (1997-2021)
ANNUAL AVERAGE DERMO WEIGHED INTENSITY (1997-2021)
### Expected Mortality - 2019-2021 Samples

Result Interpretation (Mortality) provided by Consulting Pathologist

<table>
<thead>
<tr>
<th>Type of expected mortality</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Expected Dermo mortality</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calf Island, Greenwich; Fords Beach, Stamford; Outer Norwalk Harbor; Wilson Cove, Norwalk; Westport Cockenoee; Sasco Beach, Fairfield; Housatonic River; West Shore, Milford; Quinnipiac River; Jarvis Creek, Branford; Mystic River, Stonington</td>
<td>11 (61.11%)</td>
<td>8 (57.14%)</td>
<td>3 (20%)</td>
<td>22 (47.82%)</td>
</tr>
<tr>
<td><strong>Expected MSX mortality</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hammonasset River</td>
<td>1 (5.56%)</td>
<td>1 (7.14%)</td>
<td>2 (13.33%)</td>
<td>4 (8.7%)</td>
</tr>
<tr>
<td><strong>Expected Dermo and MSX mortality</strong></td>
<td></td>
<td></td>
<td></td>
<td>4 (8.7%)</td>
</tr>
<tr>
<td>Thames River</td>
<td>1 (5.56%)</td>
<td>1 (7.14%)</td>
<td>2 (13.33%)</td>
<td></td>
</tr>
<tr>
<td><strong>Expected Dermo and SSO mortality</strong></td>
<td></td>
<td></td>
<td></td>
<td>1 (2.17%)</td>
</tr>
<tr>
<td>Stony Creek, Branford</td>
<td>1 (5.56%)</td>
<td>0</td>
<td>0</td>
<td>1 (2.17%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2019: 14 (77.78%)</td>
<td>2020: 10 (71.43%)</td>
<td>2021: 7 (46.67%)</td>
<td>31 (67.39%)</td>
</tr>
</tbody>
</table>
2019-2021

Commissions who are experiencing noticeable or significant mortality in their growing area(s) should report this finding to the Bureau and seek additional guidance from the consulting pathologist.

**Dermo Status**

- 97.83% of shellfish samples were infected with Dermo
- 54% of samples exceeded the Dermo weighed intensity of 2
- Dermo prevalence and weighed intensity were significantly higher for wild than hatchery samples
- In Connecticut this level of infection has not historically caused significant mortalities in our commercial oyster stocks.
- Individual reports have not indicated a high level of mortality despite this moderate to high prevalence of disease.

**MSX Status**

- 84.78% of shellfish samples were infected with MSX
- 0% of samples exceeded the weighed intensity of 2
- Hatchery populations had higher MSX prevalence and weighed intensity, but not significantly higher than wild oysters
- 26% of samples exceeded the MSX intensity of 1.5
- The current prevalence of MSX may be causing low levels of background mortalities in CT populations (e.g. the Hammonasset River)
HEMOCYTIC NEOPLASIA

- Hemocytic neoplasia (HN) was detected in 1 hard clam, from a New Jersey hatchery source.
- HN has been associated with high mortality rates in Wellfleet, MA, and is an infectious disease that is believed to mainly infect (and sometimes kill) hatchery hard clams.
- Health reports are required prior to importation of shellfish into CT. Ensure health reports have assessed hard clams for HN prior to importation.
- Hard clams that are sitting on the surface should be collected and tested for HN.
**IMPORTATION POLICY**

https://portal.ct.gov/DOAG/Aquaculture/Aquaculture/Shellfish-Importation

**Northern quahog:** The Bureau of Aquaculture will not allow the importation of clams from south of NJ.

**Eastern oyster:** The Bureau of Aquaculture does not allow the importation of oysters with the exception of hatchery stock from RI and MA, or stock from NY and Long Island Sound.

**Bay scallops:** The Bureau of Aquaculture does not allow the importation of scallops from outside of Long Island Sound.

**Prior to all importations:**

Prior to any shellfish importation, the source must be approved by the Bureau of Aquaculture.

The applicant must arrange with Bureau of Aquaculture for a sample of live animals to be tested.

The source of product is not guaranteed to be approved and should be a consideration in any project plans.
ALL INFORMATION PRESENTED IN THE 2021 DISEASE UPDATE REPORT

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

Bryan P. Hurlburt
Commissioner

David H. Carey
Director

2021 Statewide Shellfish Disease Update

Shellfish health is a critical factor in maintaining viable wild and cultivated populations, which support a robust aquaculture industry. The Connecticut Department of Agriculture, Bureau of Aquaculture (DABA) has monitored shellfish health since 1997. This report provides recent oyster and hard clam disease data with historic context.

https://portal.ct.gov/-/media/DOAG/Aquaculture/Pathology/2021-Statewide-Shellfish-Disease-Update.pdf
2021 PFAS UPDATE
WHAT ARE PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)?

- PFAS are a group of 5,000+ man-made chemicals that are persistent in the environment.
- PFAS were widely used in manufacturing, non-stick products and food packaging, and fire fighting foam, to name a few sources.
- Perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) are 2 of the most widely used and studied PFAS chemicals.
- Scientific studies have demonstrated PFAS have reproductive, developmental, carcinogenic, immune, and hormonal effects on humans.
- The EPA began establishing PFAS health advisories for drinking water in 2016.
- Additional information is available on www.epa.gov/pfas
PFAS HISTORY IN CONNECTICUT

- 2013-15 – EPA-mandated testing confirms that none of Connecticut’s large public drinking water systems contain elevated PFAS levels.
- 2016 – DPH adopts the EPA drinking water action level (70 ppt).
- June 2019 – PFAS firefighting foam spill into the Farmington River gains press attention.
- November 2019 – PFAS Action Plan released, listing evaluating food sources, including shellfish, as PFAS exposure pathways as a key recommended action.
- 2020 – DEEP develops GIS map of PFAS sources, and establishes a PFAS takeback program.
- 2021 – Alternative fluorine-free firefighting foam identified.
- Learn more at: https://portal.ct.gov/DEEP/Remediation--Site-Clean-Up/Contaminants-of-Emerging-Concern/Per--and-Polyfluoroalkyl-Substances?msclkid=8f24df2faf8811ecad36d4e0f7989e5f
PFAS ARE DETECTABLE IN FISH AND SHELLFISH

Sinclair et al. 2006. This data is not relevant to fish consumption since they analyzed fish liver, but demonstrates PFAS contamination and uptake in NY fish.
All samples were non-detectable for 14 PFAS chemicals!

Study performed by UConn CESE (Willig, Perkins, and Provatas)
FUTURE PFAS WORK

- The Greenwich 2020 study authors are conducting a study in Groton this year.
- We are currently waiting to see if we receive funding from the legislature for shellfish PFAS testing along the coastline.
- FDA is currently working on establishing PFAS regulations for shellfish.
2021 VIBRIO UPDATE
WHAT ARE VIBRIO?

- *Vibrio* are naturally-occurring brackish-salt water bacteria that can be pathogenic.
- Exposure to *Vibrio* can occur through consumption of raw seafood or direct wound contact with seawater.
- Globally, *Vibrio parahaemolyticus* is the leading cause of seafood-associated gastroenteritis.
- *Vibrio vulnificus* can cause life-threatening illness, including sepsis, through seafood consumption or wound infection (salt water contact). Commonly sensationalized by the media as “flesh-eating bacteria.”
- *Vibrio cholerae* causes cholera, which is rare in the US and other industrialized nations. Cholera can be life-threatening but is easily prevented and treated.
Keep in mind that some people are at greater risk for foodborne illness, and should not eat raw or partially cooked fish or shellfish.

Susceptible groups include:
- Pregnant women
- Young children
- Older adults
- Persons whose immune systems are compromised
- Persons who have decreased stomach acidity
- Persons who have chronic liver disease or reduced liver function

If you are unsure, ASK YOUR HEALTHCARE PROVIDER
**HOW TO AVOID VIBRIO**

- Do not expose wounds to seawater during the summer-fall.
  - If you cut yourself in the field, immediately wash the wound and apply antibiotic ointment and a waterproof Band-Aid.

- Harvest shellfish as soon as the tide goes out. Properly ice and shade shellfish immediately after collection.

- Properly refrigerate shellfish. Immediately discard dead shellfish. Consume shellfish within recommended timeframes. Do not consume shellfish that do not open during cooking.

- For enhanced protection, thoroughly cook shellfish during the summer-fall.
VIBRIO OUTBREAK IN CONNECTICUT & MANAGEMENT RESPONSE

- Cases predominantly impacted Darien-Westport.
- Implemented a statewide *Vibrio parahaemolyticus* Control Plan and rapid cooling requirements to internally cool shellfish to below 50°F within 3-5 hours of harvest.
CONFIRMED CONNECTICUT **VIBRIO PARAHAEOMOLYTICUS** SHELLFISH ILLNESSES (DABA) AND **VIBRIO VULNIFICUS** WOUND INFECTIONS (DPH)

Confirmed Connecticut Vp shellfish and Vv wound cases (2009-2020)

*Shellfish Vp cases for 2019 and 2020 not yet available, but were similar to 2013-2018 range, with low to very few annual confirmed cases

Vv wound cases provided by Connecticut Department of Public Health
VIBRIO VULNIFICUS MAKES HEADLINES IN SUMMER 2020

Figure 1. Vibriosis wound infection cases by month - Connecticut, 2020

Potentially deadly bacteria sickens 5 along Connecticut shoreline, prompting warning

All five patients had pre-existing wounds or sustained new wounds when they were infected with the Vibrio vulnificus bacteria while swimming, crabbing or engaging in other water activities.

https://portal.ct.gov/DPH/Epidemiology-and-Emerging-Infections/CTEPI/Volumes/41/No4/a1
WEBSITE RESOURCES

Welcome to the Bureau of Aquaculture
David H. Carey, Bureau Director
Staff & Contact Us
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General Information about the Bureau
Shellfish Sanitation Program
Laboratory Services
Shellfish Area Classifications and Maps
Harmful Algal Bloom Monitoring

Recreational Shellfishing
Recreational Shellfishing and Shellfish Handling Guidance
Recreational Shellfish Growing Area Contacts, Hotlines, and Maps
Shellfish Commission Guidance Documents

Environmental Benefits of Shellfish & Shellfish Aquaculture
Oyster & Clam Disease Fact Sheets
Shellfish Handling and Guidance
Importation Policy
Related Links | Definitions and FAQs

2020 Guidance for Recreational Shellfish Harvesting in Connecticut

https://portal.ct.gov/DOAG/Aquaculture1/Aquaculture/Aquaculture-Home-Page