IS IT SAFE TO EAT OYSTERS FROM MY GARDEN?

VIMS | William & Mary
Virginia Institute of Marine Science
Marine Advisory Program

Why the concern?

The biology of the oyster is the reason for caution. Bivalve shellfish feed and breathe by pumping water through their gills. But it's not just microscopic food particles (algae) that are filtered during pumping. If hazards such as bacteria, viruses, heavy metals, or toxic substances are present in the water – they are filtered too. While these hazards don't harm the shellfish, they can accumulate in the tissues faster than they are excreted and cause illness when shellfish is consumed raw or undercooked.

What is in the water that is of concern?

The concern is two-fold: human pathogens associated with pollution and those that are naturally occurring, or NOT associated with pollution.

Pollution sources such as septic systems, animal feces, and storm water runoff can introduce fecal coliform bacteria and viruses (Norovirus, Hepatitis A, etc.) into the water.

There are also naturally occurring threats NOT associated with pollution. Vibrio bacteria are naturally occurring and can be pathogenic, or cause human illness, through either eating undercooked seafood or an exposure of a wound to seawater. In addition, some species of algae known as Harmful Algae Blooms (HABs) have the ability to produce biotoxins under certain conditions. It's important to note that Virginia has NOT had any human illness related to HABs to date, unlike other areas of the country, but we are on the look-out.

Who manages the water quality for shellfish harvest and consumption?

The Virginia Department of Health (VDH), Division of Shellfish Safety (DSS) actively monitors water quality criteria in Virginia shellfish harvesting waters. Waters are grouped into what the Division calls 'growing areas', defined as tidal salt waters capable of growing shellfish. There are 105 of these growing areas stretching from Dahlgren to Virginia Beach to Assateague. DSS classifies growing areas as either approved (open) for shellfish harvest or condemned (closed) for harvest based on extensive water sampling and monitoring. Oysters can be consumed if the garden is located in an approved (open) growing area, or a conditionally restricted area, providing the temporary closure guidance is followed.

There are several types of closed, or condemned areas:

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- **Prohibited** – *areas with more significant pollution, such as heavy metals or toxins that the relay process is not sufficient to purge. No harvest of market shellfish, period.*
- **Restricted** - *areas closed to the harvest of shellfish however, harvest may be allowed by special VMRC relay permit. Relaying is a process where shellfish from areas with only moderate levels of pollution can be moved to an approved area where they will purge the contaminants.*

- **Conditional** - *areas normally open to harvest, but may be temporarily placed in restricted status when a specific condition has been met. These conditions are predictable pollution triggers which can be seasonal, in the case of marinas, or triggered by significant rain events. The conditional areas are based on a large amount of water monitoring data.*
  For a listing of the conditional areas and status:
  https://www.vdh.virginia.gov/environmental-health/conditional-shellfish-harvesting-status/

How do I know if it's safe to eat oysters from my garden?

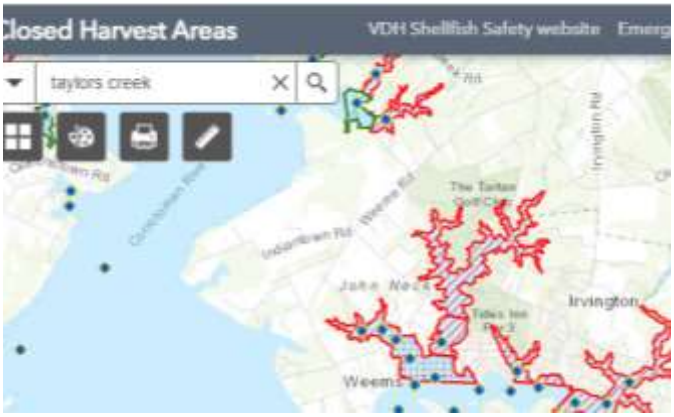
Oyster gardeners must check the growing area classification of their garden location. These classifications can change as new data is collected by DSS, so it's important to check at least annually. Below is more information on how to check the classification and how be notified automatically of a change in classification. Condemnation signs are posted in creeks by the Virginia Marine Resources Commission, however the physical sign should be viewed as a secondary method of condemnation notification.

Where can I find growing area status information?

You can look up the growing are classification in several different ways on the DSS and VMRC websites and these are listed below. If you are interested in the DSS sampling station locations and data, there is a specific map that will provide all of that information.

1. **VDH /Division of Shellfish Safety (DSS)**

   Shellfish Harvesting Area Map
   This map has the sampling station locations identified as green circles on the map. As you zoom in close, you can click on a station to find detailed data.
   - Go to VDH/ DSS website: www.vdh.virginia.gov/shellfish
   - Select "Shellfish Harvesting Area Map"
   - Adjust the map to find your location



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- Click on any area to see the classification information
- For specific seawater sampling information -click on the green circles

Shellfish Closures

- Go to VDH/ DSS website: www.vdh.virginia.gov/shellfish
- Click on the link titled "Shellfish Closures".
- Click either from the list of locality names or select the area of the map where your garden is located
- Click on the link shown for the tributary of interest to see the report and map depicting the current status.

Google Earth - Classification of Shellfish Growing Areas

You will need to have google earth installed on your computer to see the condemnation layers

- Go to VDH/ DSS website: www.vdh.virginia.gov/shellfish
- Click on the link titled "Classification of Shellfish Growing Areas".
- Scroll down and click on the google earth icon
- Enter your address in the search bar (upper left) to zoom to your location

2. Virginia Marine Resources Commission (VMRC) Desktop Map

- Go to the links, Maps and Mobile Apps : https://mrc.virginia.gov/links.shtm
- Click on "Chesapeake Map Online Map"
- Zoom to the area of interest
- Select the "shellfish condemnation" map layer on the left-hand menu
- If the area of interest is highlighted (red, or green), click on it and the specific condemnation information will appear with a link to the VDH/DSS condemnation report

- If there is no coloration of the location, it is open, or approved, for shellfish harvest

HOW TO BE NOTIFIED OF A SHELLFISH CONDEMNATION CHANGE

Growing area status can change and it's important to keep up with the with the most recent classification. It is also important protection in the event of an emergency closure, such as a sewage spill. A simple way to do this is to sign up for an email notification from Virginia Department of Health, Shellfish Safety specific to your growing area number (not the creek name or your address, etc).

How do I find my growing area number?
To look up your growing area number either 1) use this link
http://www.vdh.virginia.gov/content/uploads/sites/20/2016/05/growingareas_22x34.pdf
to look it up on a map, or 2) ask for assistance from one of the contacts listed below.

What does the notification entail?
You will receive an email with details of what has changed along with a direct link to the modified shellfish closure document. There are over 100 growing areas, so it's important to be specific to the growing area(s) of interest to limit the number of notifications. Not all notifications will mean a change for your garden location, but a quick review of the report will let you know whether or not it applies.

To be notified by email of a change to your area:

Email Daniel Powell (daniel.powell@vdh.virginia.gov)
Subject: "Request notice of classification change"
Include: your full name, phone, email and the growing area number(s) of interest

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PRACTICAL ADVICE FOR CONSUMING OYSTERS FROM THE GARDEN

We can't control Mother Nature but we can practice some simple measures to reduce risk:

- Know your growing area classification and do not eat oysters from closed growing areas
  Note – bacteria and viruses can survive low cooking temperatures

- Do not eat raw/undercooked oysters if you have an illness or medication that reduces your immune response as this puts you at high risk for serious illness or death from a specific Vibrio species infection (V. vulnificus). Examples include, but are not limited to: liver disease, diabetes, cancer, stomach disorders.

- Keep oysters on ice/refrigerated until you eat them - especially important in the warm months when natural bacteria levels in water are higher. It's the same reason you don't leave milk on the counter – bacteria multiply faster in warm temps.

- Don't eat oysters harvested after a rain event (run off from land could temporarily introduce pollution). Wait a day or two for oysters to purge. For major rain events like hurricanes - wait 7-10 days.

- Discard cracked or gaping oysters

BASIC SHELLFISH HANDLING TIPS

- Keep us COLD - keep oysters on ice/refrigerated until you eat them
- Let us DRAIN – keep oysters out of melted ice water
- Let us BREATHE - don't seal in an airtight container

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