
ENVIRONMENTAL Fact Sheet



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Rainfall Closures of Shellfish Harvesting Areas

Why are Shellfishing Areas Closed After Rainstorms?

Most of the open shellfish harvesting areas in coastal New Hampshire are subject to closures following significant rainfall events. The amount of rainfall that triggers a closure varies from area to area, but in all cases the closure is put in place because of the likelihood of high bacteria levels in the water. High bacteria may indicate the presence of disease-causing organisms, which can become concentrated within filter-feeding shellfish.

Illness can result in those who eat contaminated shellfish.

Where Does the Pollution Come From?

Rain that falls on roadways, parking lots, rooftops, and other surfaces picks up a variety of

contaminants, including bacteria. The bacteria can be from the feces of wildlife, domestic pets, farm animals, or other sources. Some of the rainfall flows directly to the shellfishing area, while some may first flow down sewer grates and into the underground storm sewer system. Storm sewers may also receive illegal discharges of human sewage. If the rainfall is heavy enough, the network of storm sewer pipes will discharge a large volume of polluted runoff to nearby rivers, streams, and estuaries. Because the water in storm sewers does not undergo any treatment or disinfection, the runoff often significantly pollutes nearby shellfish beds, thereby making harvesting closures necessary.



Rain washing over paved surfaces picks up bacteria and other pollutants. The polluted runoff often flows into storm sewer systems, some of which discharge directly to shellfishing areas.

How Much Rain Triggers A Closure?

The amount of rain that generates enough bacterial contamination to warrant a closure varies from area to area. For example, the Hampton/Seabrook Estuary is relatively small, and is surrounded by land that is rather intensely developed with roads, parking lots, and buildings. Thus, small rainstorms can produce a high volume of runoff discharging to a relatively small body of water. Conversely, the Great Bay Estuary is surrounded by less intense development, and its much larger size means it can absorb more pollution before bacteria levels rise to the point where closure is necessary. The N.H. Department of Environmental Services (DES) conducts intensive studies in all shellfish harvesting areas to determine how much rain can be expected to adversely affect a given harvesting area, and how long it will take the area to flush itself of the bacterial contamination once the rain ends.

What Is the Process to Reopen an Area Closed Because of Rainfall?

Areas under a rainfall closure cannot be reopened until the high bacteria levels in the water have been flushed from the system by the tides, and until the filter-feeding shellfish have had enough time in the now-clean water to purge themselves of contaminants they picked up after the storm. The amount of time required for these two processes to occur is not constant throughout the year. This is because shellfish are affected by changes in water temperature, salinity, tidal height, and other factors.

The regulations DES follows calls for a standard 14-day closure of areas affected by rainfall (the 14-day period begins after the rainfall event has stopped). In reality, the shellfish typically purge themselves in less than 14 days, so DES often uses an alternative decision-making process to reopen areas under a rainfall closure.

When a closure is put in place and after the rain ends, DES begins collecting water and shellfish tissue samples for a period of several days.

Water testing usually begins the day after the storm, while shellfish tissue testing typically begins a few days after that (the additional time is necessary because there is usually a delay in the appearance of high bacteria in the shellfish). When the test results show that water and meat samples have returned to "pre-storm" or "baseline" levels, the closure is lifted.



The procedure of using water and meat testing to reopen shellfish beds is relatively new, having been started in 2003. DES will continue to use this system for several years, until there are enough data to determine if there is a consistent, predictable pattern in the time required for shellfish to purge themselves of high bacteria levels. When and if that pattern is documented for various harvesting areas, new management procedures (e.g., auto-matic reopening of areas after a standard closure period developed from site-specific sampling) may be implemented.

How Can Harvesters Determine If an Area is Under a Rainfall Closure?

Harvesters should frequently consult the "Clam Hotline" (1-800-43-CLAMS) for updated information regarding the open/closed status of shellfish harvesting areas. **NOTE: The Hotline is typically updated each week on Friday afternoon during the harvesting season.** For more information on shellfish harvesting in coastal New Hampshire, visit the DES [Shellfish Program web site at www.des.nh.gov/wmb/shellfish](http://www.des.nh.gov/wmb/shellfish).

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