



A. Introduction

The New Jersey Vibrio Control Plan (VCP) is designed to detail program coordination, stipulate outbreak response, and define post-harvest time and temperature controls for shellfish. It states harvest time to temperature control for tidal, intertidal, and tide-dependent harvests and outlines Hazard Analysis and Critical Control Points (HACCP) plan requirements. Additionally, the VCP recommends best management practices to minimize risks associated with *Vibrio parahaemolyticus* (Vp) and *Vibrio vulnificus* (Vv).

Nationally reported illnesses linked to Vp have been increasing (Marder, MPH EP, Griffin PM, Cieslak PR, et al. Preliminary Incidence and Trends of Infections with Pathogens Transmitted Commonly Through Food — Foodborne Diseases Active Surveillance Network, 10 U.S. Sites, 2006–2017. *MMWR Morb Mortal Wkly Rep* 2018;67:324–328.

DOI: <http://dx.doi.org/10.15585/mmwr.mm6711a3>). This trend has made Vp a significant concern for regulators and the shellfish industry. Despite state and industry efforts to implement Vibrio Control Plans, shellfish-related illnesses continue to rise, particularly in the Northeast and Northwest regions.

Vp naturally occurs in coastal waters and is unrelated to pollution, meaning traditional shellfish sanitation controls are ineffective. Instead, elevated Vp levels are generally associated with water temperature and post-harvest handling. Studies show that Vp levels can double within 7.24 hours when shellfish are exposed to temperatures above 60 degrees Fahrenheit (National Shellfish Sanitation Program, NSSP, Guide for the Control of Molluscan Shellfish: 2023 Revision Section IV. Guidance Documents - Chapter IV. Naturally Occurring Pathogens, .01 Vibrio parahaemolyticus (Vp) Control Plan Guidance, <https://www.fda.gov/food/federal-state-local-tribal-and-territorial-cooperative-human-food-programs/national-shellfish-sanitation-program-nssp>).

Vp is a curved, rod-shaped, Gram-negative bacterium found in marine and estuarine environments. Consuming raw or undercooked shellfish with high Vp levels can lead to gastrointestinal illness in humans, with symptoms typically resolving within 72 hours but potentially lasting up to 10 days in immunocompromised individuals.

Vv is another naturally occurring bacterium found in marine and estuarine environments. Although illnesses from Vv are less common in Northeastern states like New Jersey, they can be severe. The mortality rate from Vv ingestion is approximately 50 percent in healthy individuals and 70 percent in those with liver disease. Untreated Vv infections can lead to septicemia and likely death if not treated within 72 hours. Additionally, Vv can enter the bloodstream through cuts or wounds, affecting individuals with certain medical conditions more severely.

Procedures to limit exposure to Vp and Vv have been developed by the Interstate Shellfish Sanitation Conference (ISSC, www.issc.org/) and are integrated into the National Shellfish Sanitation Program's Guide for the Control of Molluscan Shellfish (NSSP Guide). The New Jersey Department of Environmental Protection (NJDEP) and the New Jersey Department of Health

(NJDOH) conduct risk assessments and utilize NSSP Guide requirements along with New Jersey-specific *Vibrio* studies to develop and update the annual VCP.

B. Overview - 2025 *Vibrio* Season

New Jersey shellfish was implicated in eleven potential shellfish related *Vibrio* species illness cases in 2025, eight of which were confirmed by culture testing to be Vp and three of which were culture confirmed to be Vv.

Four of the eight culture confirmed Vp cases were traditional single source cases (i.e., only from New Jersey), and four were multiple sources cases (i.e., harvested from multiple states). Of the four single source New Jersey culture confirmed Vp cases, the first was all product from Delaware Bay, but from two separate growing areas within Delaware Bay. The second single source New Jersey Vp case involved product from one growing area on the Atlantic Coast. The third New Jersey Vp case involved product from multiple growing areas from the Atlantic Coast. And the fourth and final New Jersey Vp case involved product from both Delaware Bay and the Atlantic Coast. A multiple source case occurs when the consumer eats a mixed plate of oysters sourced from more than one state that includes an oyster which may have been harvested from New Jersey waters. In these multiple source cases, it is hard to accurately determine which oyster is responsible for the illness unless directly linked to an outbreak.

New Jersey shellfish was implicated in three Vv cases in 2025. Two of these cases were multiple sources cases and one was a single source case. The single source Vv case was harvested from Bennie Sand in Delaware Bay. The patient consumed raw oysters, cooked mussels, cooked scallops, cooked shrimp and cooked crabs in New Mexico on July 19, 2025. The DOH investigation revealed that the raw oysters implicated in the case that were harvested from Bennie Sand, traveled through an Arizona dealer that was revealed to not be a certified dealer. The patient was also severely immunocompromised. Sadly, the patient is deceased. However, based upon the issues uncovered regarding the dealer being uncertified and the patient being immunocompromised, it does not seem likely that New Jersey growing waters were the source of this illness and very unfortunate death.

As part of the annual *Vibrio* sampling regime, the NJDEP collected oyster tissue samples from May to October 2025 (*Vibrio* season) in both the Delaware Bay and the Atlantic Coast (specifically Barnegat Bay). These samples were analyzed for total Vp, the virulent genes of Vp (trh and tdh), and Vv using Polymerase Chain Reaction. Strain identification was also performed using Next Generation Sequencing. A summary of the data suggests that *Vibrio* levels in oyster tissue may be higher following a rapid rise in water temperature than during months with the warmest water and air temperatures. In New Jersey, a quick rise in water temperature is commonly observed in June. In 2025, the highest levels *Vibrio* occurred during the later part of June and early July, consistent with the observation of rapidly rising water temperatures.

C. Coordination of New Jersey Agencies Responsible for Shellfish Sanitation

The requirements set forth in the NSSP Guide are accomplished through a coordinated effort of four agencies in New Jersey. These agencies, their physical locations, their role in shellfish

sanitation, and their relationship to one another are shown below. Implementation of the VCP requires cooperation and communication among these agencies.

New Jersey Department of Environmental Protection (NJDEP)

Bureau of Marine Water Monitoring (BMWM)
Division of Water Monitoring, Standards and Pesticide Control
P.O. Box 405
929 Stoney Hill Road
Leeds Point, NJ 08220
609-748-2000

<https://dep.nj.gov/wms/bmw/>

(Water monitoring, tissue monitoring, shellfish growing water classification, shellfish classification charts, and permits issued under N.J.A.C. 7:12)

Bureau of Marine Habitat and Shellfisheries
Division of Fish and Wildlife
P.O. Box 418
360 North Route 9
Port Republic, NJ 08241
609-748-2020

<https://dep.nj.gov/njfw/about/bureau-of-marine-habitat-and-shellfisheries/>

(Licensing, shellfish leases, and resource management)

NJ Division of Fish and Wildlife
Bureau of Law Enforcement
2434 Route 563
Egg Harbor City, NJ 08215
609-748-2050

<https://dep.nj.gov/njfw/conservation/bureau-of-law-enforcement/>

(Patrol, enforcement, and inspections)

New Jersey Department of Health (NJDOH)

Public Health and Food Protection Program, Division of Consumer Environmental and Occupational Health
P.O. Box 369
Trenton, NJ 08625-0369
609-826-4935

<https://www.nj.gov/health/ceohs/phfpp/>

(Inspections, certified dealers, depuration, illness reporting and investigation)

The following agencies have primary responsibility for decision making and implementation of the following aspects of the VCP:

NJDEP Bureau of Marine Water Monitoring

- Develop and coordinate the VCP.
- Monitor and analyze water and air temperature data and conduct a risk assessment as the basis for developing a VCP to control naturally occurring pathogens.
- Develop control strategies to minimize potential *Vibrio* illnesses.
- Close affected growing areas if outbreaks are epidemiologically associated.

NJDEP Bureau of Law Enforcement – Marine Region

- Prevent illegal harvest by enforcing closure of implicated growing areas.
- Ensure compliance with harvest, transport, and temperature control measures in Section F below, including harvest hours and maximum hours to refrigeration.
- Enforce vessel requirements including, but not limited to, shading and icing of harvested oysters.

NJDOH – Public Health and Food Protection Program

- Ensure compliance with time and temperature restrictions including, but not limited to, harvester landings, certified dealer handling, processing, and transport.
- Inspect certified dealers' operations and ensure required cooling times and temperatures are met and all HACCP plans are updated and implemented.
- Epidemiologically confirm, document, and conduct trace back for each *Vibrio* species illness case reported in the State or from other authorities. Initiate, communicate, and monitor shellfish recall(s) if a growing area is implicated as a result of an illness or due to post-harvest mishandling, initiating a firm specific related recall.
- Notify the NJDEP and the U.S. Food and Drug Administration (FDA) of any confirmed *Vibrio* illness.
- Notify the shellfish industry and local health jurisdictions in the State of the potential for illnesses due to *Vibrio* prior to historical times of onset or at a minimum of once a year.
- Issue a health advisory to the public about the potential problem and advise the industry to educate wholesalers, retailers, and consumers.

D. Outbreak Response (*Vibrio parahaemolyticus* and *Vibrio vulnificus*)

In the event of confirmed cases of shellfish-related food borne illnesses caused by the naturally occurring marine bacterium Vp and/or Vv, the NJDEP and the NJDOH shall comply with the requirements at N.J.A.C. 7:12, N.J.A.C. 8:13, the latest edition of the NSSP Guide, and the VCP.

E. NJDEP – Bureau of Marine Water Monitoring *Vibrio* Sampling

In 2026, the BMWW will continue its program of sampling and analyzing oyster tissue from the Delaware Bay and Barnegat Bay harvest areas during the *Vibrio* season. The objective is to evaluate the levels of *Vibrio parahaemolyticus* (Vp) and *Vibrio vulnificus* (Vv) in oyster tissue. Advanced techniques such as Polymerase Chain Reaction (PCR) and Next Generation Sequencing (NGS) will be employed to assess the various genetic strains present in both bays.

This data will offer critical insights into whether specific Vp and Vv genetic strains, previously

identified in isolation from illness investigations, are also present in oysters harvested from the implicated areas. Such information is essential for understanding the correlation between oyster contamination and reported illnesses, thereby informing targeted mitigation strategies and enhancing public health safety.

F. Harvest, Transport, and Temperature Control Measures

Subchapter 8 of N.J.A.C. 7:12 deals with harvest, handling and transport requirements for shellfish license holders. Any person who violates any requirement of N.J.A.C. 7:12-8 may be subject to prosecution and/or penalties pursuant to N.J.S.A. 23:2B-14, 50:1-5 et seq., 58:24-9, 58:24-10, 58:24-10.1, and 2C:64-1 et seq., including the forfeiture of shellfish, which may be seized and returned to the water or destroyed.

N.J.A.C. 7:12-8.6 *Vibrio parahaemolyticus* Control Plan time to temperature control requirements for harvesting oysters.

1. SUBTIDAL HARVEST

If a shellfish license holder is conducting subtidal harvesting of oysters, the shellfish license holder shall comply with the following hours from harvest to refrigeration:

Dates of harvest	Maximum hours to refrigeration ¹	Start of harvest ²
June 1 – June 14	7	Sunrise
June 15 – July 14	6	Sunrise
July 15 – August 31	7	Sunrise

¹ Hours to refrigeration means the total number of hours (inclusive of any transport time) from the start of harvest until the oysters are placed in refrigeration. “Refrigeration” means a mechanical unit that is chilled to a temperature of 45 degrees Fahrenheit (7.2 degrees Celsius) or colder at the time shellfish are placed in the unit and maintained at that temperature thereafter.

² For purposes of the start of harvest under this subsection, sunrise shall mean the time of sunrise in Trenton, New Jersey. The sunrise time shall apply regardless of where a harvester intends to harvest or is harvesting shellfish. The Trenton sunrise timetable is included in the NJ Hunting and Trapping Digest available from the NJDEP’s Division of Fish and Wildlife and on-line at <https://dep.nj.gov/njfw/digests/>.

a) A shellfish license holder conducting subtidal harvesting who places harvested oysters

directly in refrigeration on the vessel is not subject to the maximum hours to refrigeration in the table (at 1) above. However, the shellfish license holder shall:

- i. Maintain a NJDOH approved refrigeration unit;
- ii. Notify the NJDEP's Division of Fish and Wildlife, Bureau of Law Enforcement - Marine Region, at njdfwcommercialnotify@dep.nj.gov or 609-748-2050 prior to June 1 that the harvester will be using, on the vessel, refrigeration that is approved by the NJDOH; and
- iii. Fly a flag that is a minimum size of 18 inches by 18 inches, orange, and bearing a black diagonal stripe.

2. INTERTIDAL HARVEST

If a shellfish license holder is conducting intertidal harvesting of oysters from June 1 through August 31, the maximum hours to refrigeration (inclusive of any transport time) is four hours, starting when the first oysters to be harvested are exposed to the air by the receding tide.

3. TIDE DEPENDENT HARVEST

If a shellfish license holder is conducting tide dependent harvesting of oysters from June 1 through August 31, the maximum hours to refrigeration (inclusive of any transport time) is four hours, starting when harvest begins. On each harvest day prior to any harvest activity, the shellfish license holder shall notify the NJDEP's Division of Fish and Wildlife, Bureau of Law Enforcement - Marine Region, at njdfwcommercialnotify@dep.nj.gov or 609-748-2050 to provide the name of the shellfish license holder, location of harvest, and harvest start time.

4. ALL HARVEST

Each shellfish license holder harvesting oysters shall record on each harvest day, in a journal with permanently bound pages, the harvest start time, the time the last-harvested shellfish was placed into refrigeration, and the shell temperature of the shellfish in one container from the day's harvest at offloading, including the time the temperature was measured.

- a) To measure the shell temperature, the shellfish license holder shall use a handheld laser thermometer that is accurate and properly calibrated per the manufacturer's specifications. The shellfish license holder shall provide each harvest day's information to the certified dealer on the transaction record.
- b) The shellfish license holder shall submit to the BMW at the address in N.J.A.C. 7:12-1.1(l) a copy of the journal by September 15 of each year.

G. Additional Required Control Measures

1. No product may be shipped the same day as harvest without prior approval from the NJDOH.

2. Oyster vessels actively harvesting oysters during the *Vibrio* season with adequate and approved refrigeration may, within a one hour interval, utilize and fill up to 24 individual bushel baskets on the shaded deck of the harvest vessel prior to placing the oysters into a refrigeration unit in an appropriately tagged oyster cage as required by N.J.A.C. 7:25A-2.3, for the purpose of limiting the number of times the unit doors are opened and closed to maximize cooling.
3. Proper shading of the shellfish product must be in place on the boat (N.J.A.C. 8:13). Coolers with adequate ice are considered proper shading.
4. For subtidal aquaculture activities, notification of landing location must be supplied to NJDOH Public Health and Food Protection Program, Virginia Wheatley at 609-826-4935 or virginia.wheatley@doh.nj.gov.

H. Additional Recommended Best Management Practices

The following Best Management Practices are recommended but not required by the 2026 VCP.

*Method, if used, is required to be validated, inspected, and approved by the NJDOH.

1. Evaporative Cooling* – Wet or mist oysters with water (from Approved classification), stored under required shading to reduce temperatures through evaporative cooling.
2. Rapid Chilling* – In between dredges, cool oysters in a container of ice from a potable water source and sea water (from Approved classification). Proper drainage should be provided. Monitor water quality to prevent sediment buildup. The slurry is the most effective way of rapidly cooling shellfish. When the next dredge is brought in, transfer oysters in the slurry to a shaded area or into a refrigerated unit.
3. Icing* – Layer bushel baskets, bushel bags, or oysters in cages with ice to reduce shell temperatures during transport to landing.
4. Reduce time to refrigeration to 5 hours – Keeping the time to refrigeration to a maximum of 5 hours, especially when air temperatures exceed 70°F, is the most effective way to maintain low *Vibrio* levels without direct refrigeration.
5. If using onboard refrigeration, limit the number of times the refrigeration unit doors are opened and closed to maximize cooling.
6. Offload boats quickly, get product on a pre-chilled refrigerated vehicle efficiently, and get the product to the certified dealer as soon as possible.
7. Do not place tarps onto flatbed truck directly onto the containers of shellstock without adequate air space to allow for the free flow of air.

I. Prohibitions for all Harvesters and Certified Dealers

1. Off-loading of oysters from boats directly onto interstate trucks intended for same day interstate shipment is prohibited.
2. No product shall be shipped the same day it was harvested without prior approval from the NJDOH.

J. Certified Dealers - Annual Evaluation of the Forced-Air Unit

1. Certified Dealers shall annually conduct an evaluation of their forced-air unit operation.
2. The annual evaluation shall ensure the following:
 - a) Unit is operating and in good repair;
 - b) Unit is capable to hold a maximum day's harvest amount while providing adequate circulation of cold air;
 - c) Unit is capable of holding a day's harvest while holding other products;
 - d) Compressor is sized adequately and can cool product down to 50°F or less (40°F is optimum) in 8 hours in June, and 6 hours in July and August;
 - e) Time to temperature requirements are met. The NJDOH wholesale temperature requirement is 45°F in 10 hours (overnight) to ship from a certified dealer. Due to the 2018 Vv cases, oysters shipped from a certified dealer will be required to be cooled down to 50°F or less (40°F is optimum) in 8 hours in June and 6 hours in July and August. To meet this requirement, cooldown should start at the dock. No product may be shipped the same day as harvest without prior approval from the NJDOH;
 - f) NJDOH verification of adequate refrigeration and cooling prior to certification for the *Vibrio* season is required; and
 - g) The continuous temperature recording unit at the initial certified dealer is able to continuously record the ambient temperature of the product with a back-up alarm.
3. The NJDOH has resource information to assist the purchase and installation of a recording thermometer on the forced air unit. The cost is inexpensive to install this device.
 - a) The NJDOH will not certify the Certified Dealer operation unless a continuous recording thermometer is installed on the forced air unit. This will allow the NJDOH to inspect the forced air unit and ensure that it is operational and maintains appropriate temperatures.

K. Hazard Analysis and Critical Control Points (HACCP) Plans

1. Certified Dealers shall record the time and the temperature of the shellfish when it is offloaded and received by the Certified Dealer. This can be done by utilizing a laser (infrared) thermometer (gun type) and "shooting" the temperature of the shell or by placing a probe thermometer between the shells and checking the meat. Thermometers must be calibrated, and manufacturer's directions must be followed.
2. After holding overnight, and before releasing the product for interstate shipment, the time released, and the temperature of the product must be recorded. Product shall not be released for intrastate and/or interstate shipment until 5am after overnight holding on the day of harvest. No product may be shipped the same day as harvest without prior approval from the NJDOH.
3. The implementation of the HACCP Plans includes monitoring records to indicate the time and temperature as indicated above, the establishment of Critical Limits, and corrective actions when Critical Limits are not met.
 - a) HACCP plans state that this will be performed.