NJ Department of Environmental Protection
Water Monitoring and Standards

Sanitary Survey Report of Shellfish Growing Area BB4

(Southern Barnegat Bay)

December 2017

Sanitary Survey Report of Shellfish Growing Area BB4 (Southern Barnegat Bay)

New Jersey Department of Environmental Protection (NJDEP)

Bureau of Marine Water Monitoring
Robert Schuster, Bureau Chief

December 2017

Data from
July 2013 to August 2017

Report Prepared by:
Lisa DiElmo

Acknowledgements:
Special acknowledgments are given to the Boat Captains for their perseverance in collecting shellfish water quality samples and to the laboratory staffs at Leeds Point for their analysis of these water quality samples. Avery special thank you to Dominick Fresco for all of his hard work performing shoreline surveys.

Cover Photo by Lisa DiElmo

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EXECUTIVE SUMMARY

Shellfish Growing Area BB4 is located in Ocean County. This growing area encompasses the back bay waters of Barnegat Bay from just above Little Sheepshead Creek extending north to just south of Westecunk Creek and extending east to Long Beach Island. Enclosed in these waterbodies are numerous creeks, coves and thorofares. These include Tuckerton Creek, Jeremy Creek, Thompson Creek, Parker Run, Tuckerton Cove, Edge Cove, Rose Cove, Parker Cove, Middle Channel, Barrel Channel and Hither Channel. The estimated size of this shellfish area is 13,552 acres. Approximately ninety-eight percent of the waters in this area are classified as either *Approved* or *Conditionally Approved* for shellfish harvest. Less than three percent of shellfish waters are designated as either *Prohibited* or *Restricted*.

This growing area is bordered by the following municipalities: Long Beach Township, Beach Haven Borough, Little Egg Harbor Township, Tuckerton Borough and Eagleswood Township. These communities are connected to city sewers that are managed by the Ocean County Utilities Authority (OCUA).

This report is based on data collected from July 2013 to August 2017. A total of 2407 water samples were collected from 72 sampling sites and analyzed for fecal coliform. Based on NSSP Systematic Random Sampling criteria, all monitoring stations meet their NSSP criteria for their current classification.

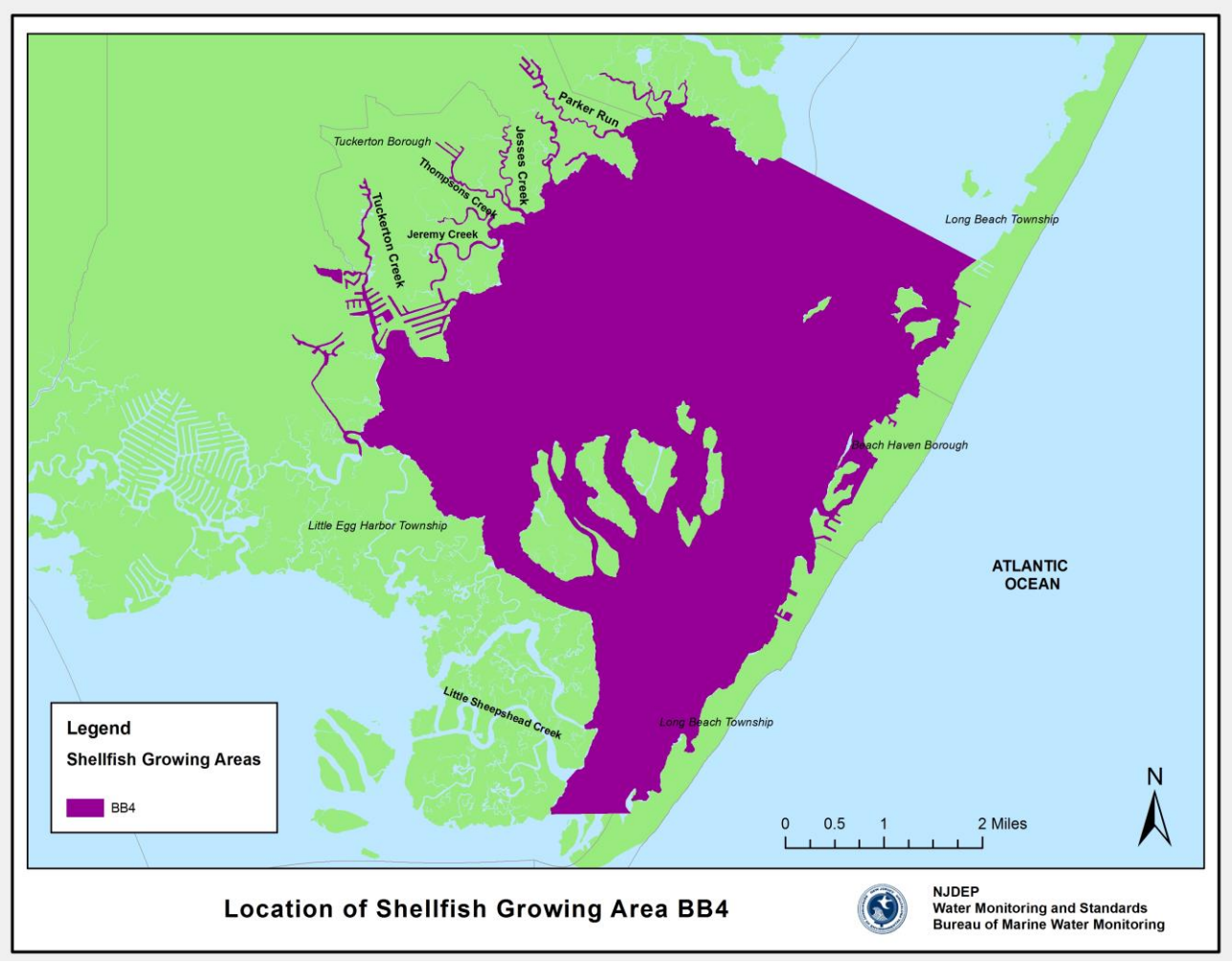
In this Sanitary Survey, an upgrade of 37.2 acres of shellfish water to *Conditionally Approved (Nov-Apr)* is being recommended for the *Restricted* section at the mouth of Tuckerton Creek and an upgrade of 39.7 acres of shellfish waters to *Approved* is being recommended for the *Conditionally Approved (Nov-Apr)* section at the mouth of Tuckerton Creek. These upgrades in classification are based on consistent good water quality and acceptable bacteriological results in these areas.

GROWING AREA PROFILE

Location and Description

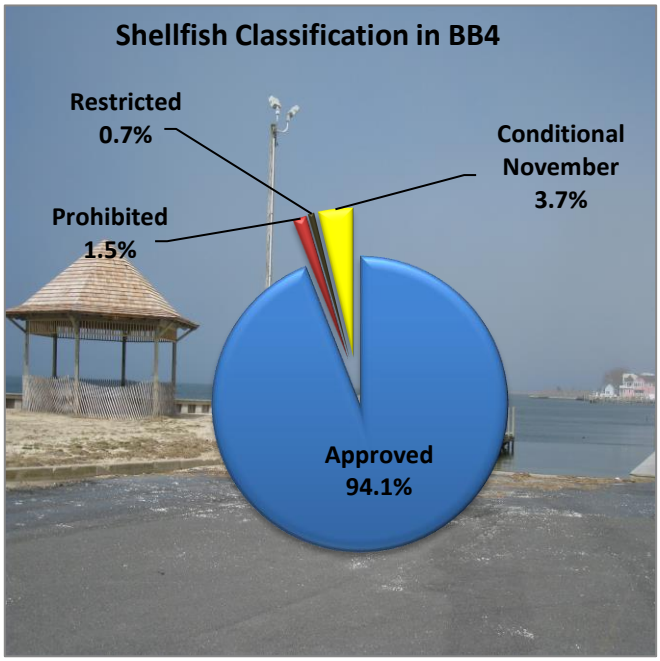
Shellfish Growing Area BB4 is located in Ocean County. This growing area encompasses the back bay waters of Barnegat Bay from just above Little Sheepshead Creek extending north to just south of Westecunk Creek and extending east to Long Beach Island. This growing area is bordered by the following municipalities: Long Beach Township, Beach Haven Borough, Little Egg Harbor Township, Tuckerton Borough and Eagleswood Township. See map below.

Enclosed in these waterbodies are numerous creeks, coves and thorofares. These include Little Egg Harbor Bay, Tuckerton Creek, Jeremy Creek, Thompson Creek, Parker Run, Tuckerton Cove, Edge Cove, Rose Cove, Parker Cove, Middle Channel, Barrel Channel and Hither Channel. All of these water sources feed into the Barnegat Bay which then feeds into the Atlantic Ocean via The Barnegat Inlet. The estimated size of this shellfish area is 13,552 acres.

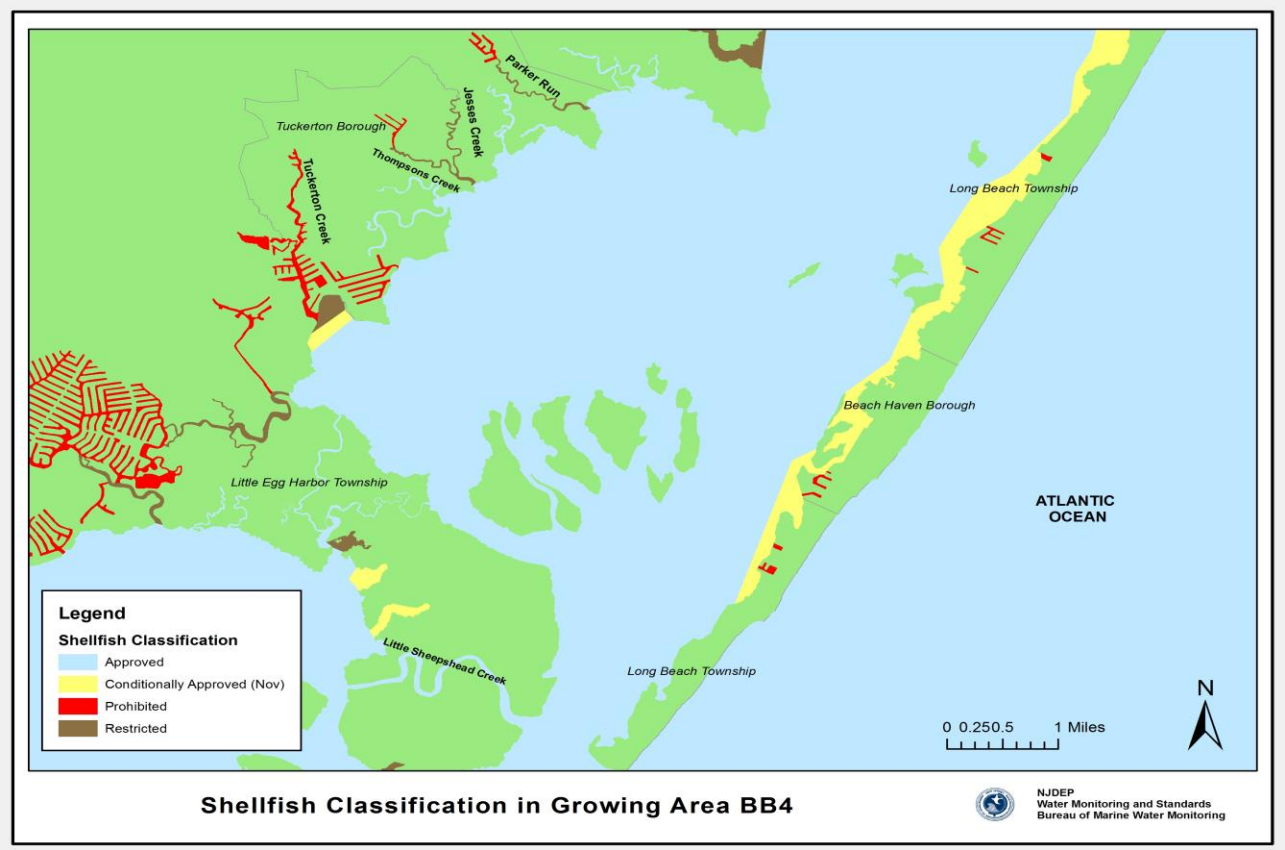


Growing Area Classification Summary

This growing area includes 13,552 acres of marine water. Approximately ninety four percent of the shellfish growing waters present in this area are classified as *Approved.* The remaining six percent of these waters are classified as *Conditionally Approved*, *Restricted* and *Prohibited.* Waters classified as *Restricted* and *Conditionally Approved* are used as buffers for marinas, lagoons and developed communities along the shoreline and are also sometimes used at the mouths of rivers or creeks that are classified as *Prohibited* to act as a buffer to an area adjacent to *Approved* waters.



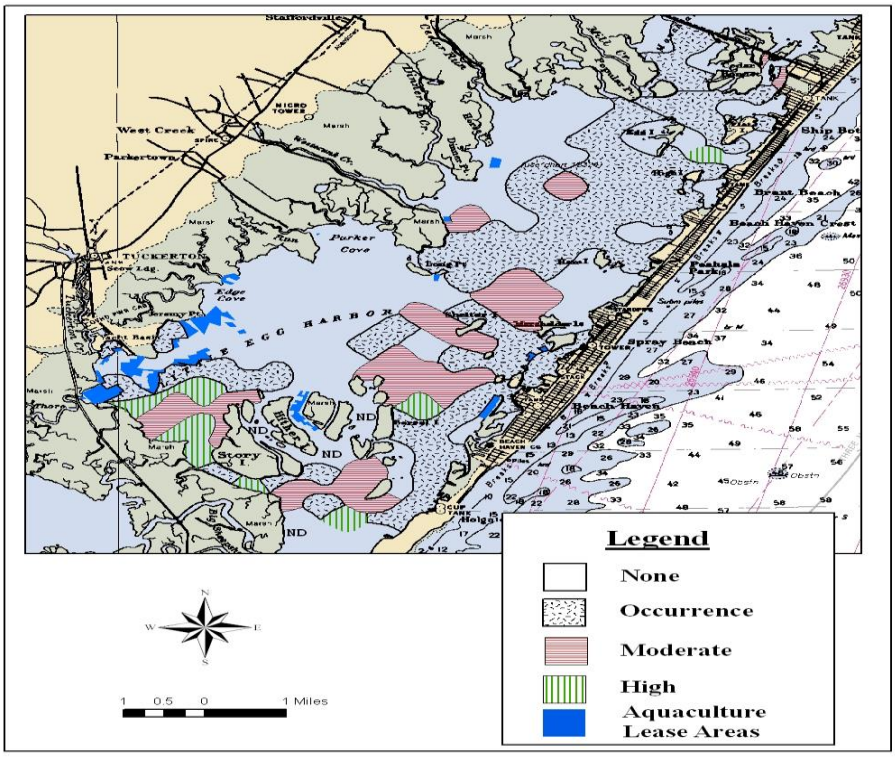
The map below illustrates the shellfish classifications for this growing area. It can also be found on the 2016 State of New Jersey Shellfish Growing Water Classification Charts # 10 or on WM&S/BMWM website at http://www.state.nj.us/dep/.



Evaluation of Biological Resources

There are several shellfish native to New Jersey that are commercially and recreationally important. These include: hard clams (*Mercenaria mercenaria*), soft clams (*Mya arenaria*), blue crabs (*Callinectes sapidus*), eastern oysters (*Crassostrea virginica*), surf clams (*Spisula solidissima*) and sea scallops (*Placopecten magellanicus*).

The most densely populated and economically productive species in the area is the hard clam (NJDEP, 1986). The most recent hard clam stock assessment, conducted in 2012, showed a 23 percent decrease in hard clam population in the Barnegat Bay since the last assessment in 1986. (NJDEP, 2015) According to this study, this growing area, for the most part, has a low to moderate distribution of hard clams. Factors that contribute to having a viable resource include: salinity, dissolved oxygen levels, bottom conditions and predator activity. The adjacent map shows hard clam density in this growing area. (Celestino, 2011).



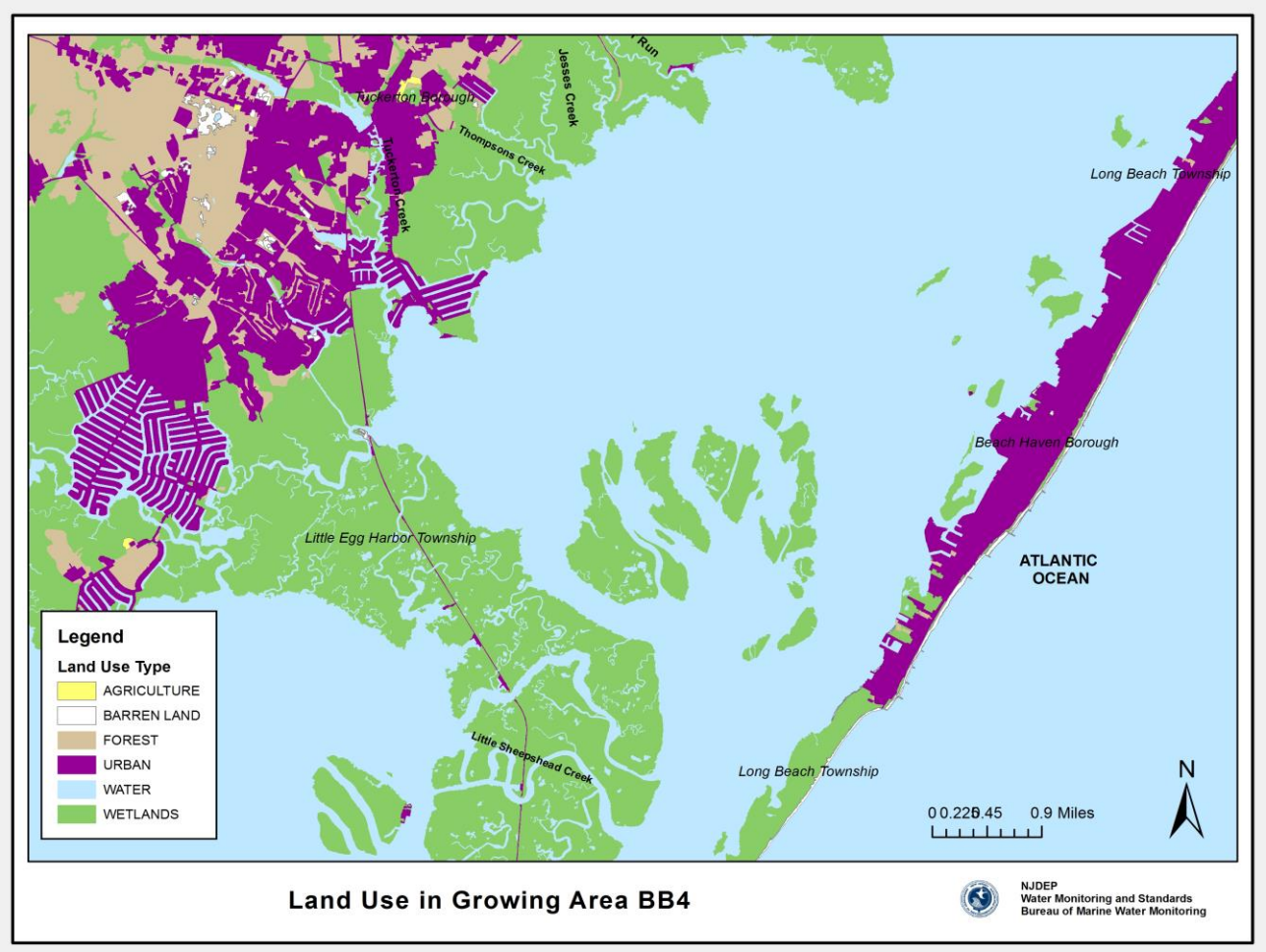
Shoreline Survey: Evaluation of Potential Pollution Sources

Shoreline surveys or site-specific visits of areas nearby or bordering shellfish growing waters can provide insight as to the location and nature of land use, surface water discharges, marinas, unpermitted discharges and stormwater inputs. Shoreline surveys of growing area BB4 were conducted during the timeframe of this report. The following sections detail information derived collectively from these surveys.

Land Use

The surrounding landscape has not changed significantly since the last shoreline survey, however there is still some rebuilding from Superstorm Sandy being done. The majority of land use in this area is comprised of urban communities and wetlands. Long Beach Township, Beach Haven Borough, Little Egg Harbor Township, Tuckerton Borough and Eagleswood Township are primarily residential communities with very few large commercial businesses. The communities along the shore are primarily connected to city sewer; however, there are some areas further inland that use septic

systems. The wetlands act as a barrier from the surrounding population centers. The wetlands utilize the nutrients obtained for plant growth and act as a purifier against pollutants. By doing so, these wetlands help to reduce pollutants entering the shellfish waters. The figure below shows a representation of land use in this growing area**.**



Surface water discharges

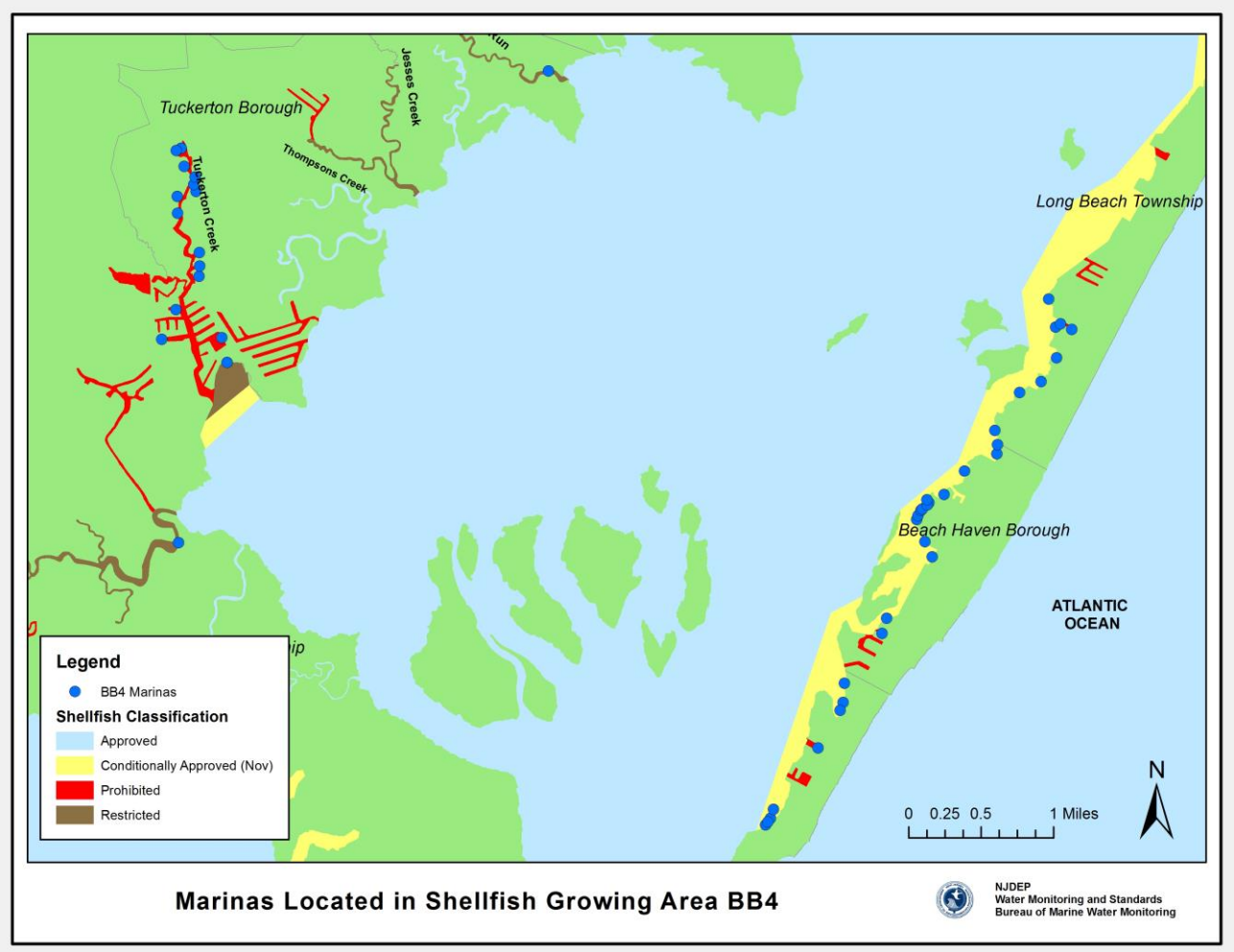
A surface water discharge involves the release of treated effluent from various municipal and industrial facilities directly into a river, stream or the ocean. The discharge of pollutants from a point source is authorized under the New Jersey Pollutant Discharge Elimination System (NJPDES) and the regulations are found at N.J.A.C. 7:14A. The main purpose of the NJPDES program is to ensure proper treatment and discharge of wastewater.

There are no direct discharges from factories, wastewater treatment facilities or generating stations in Shellfish Growing Area BB4. Although some nearby residences have septic systems, wastewater from communities and businesses in this area is generally treated at the Ocean County Utilities Authority. Treated effluent is discharged into the ocean so it doesn't impact this growing area. For more information on the locations of septic systems in this growing area, please see Appendix B.

Marinas

The discharge of sewage from vessels into the waterways can contribute to the degradation of the marine environment by introducing disease-causing microorganisms (pathogens) such as bacteria, protozoan and viruses into the marine environment. Chemical compounds, such as oil and gasoline resulting from spills, leaks and pressure washing from vessels can poison fish and other marine organisms. By-products from the biological breakdown of petroleum products can be harmful to fish and wildlife and pose threats to human health if ingested. *(Klein, 2009)* For this reason, waters within the marina basin are restricted from shellfish harvest.

The waters enclosed by the marina are classified as *Prohibited*. Depending on the size of the marina, the water quality, flushing rates and water depth, shellfish waters immediately adjacent to each marina, known as the buffer zone, may be classified as *Prohibited*, *Restricted* or *Conditionally Approved* (no harvest during summer months when the marina is normally active). Marina buffers are calculated using the NJ Marina Buffer Equation. For additional information on the marina buffer equation, see the *Shellfish Growing Area Report Guidance Document 2011*.
There are forty-three marinas in this shellfish growing area. The locations of these marinas are displayed on the following map:



Marina Name	Address	Municipality	County	# of Boat Slips	Dates of Operation	Facility Services
Lindy Trailer Park	5310 S. West Ave.	Long Beach Twp	Ocean	24	Seasonal	Restrooms, Fish Cleaning Table
BB4 Condo 2	West Ave.	Long Beach Twp	Ocean	30	Seasonal	N/A
Watersgate Marina	128 Osborne Ave.	Long Beach Twp	Ocean	24	Seasonal	Fish Cleaning Table
BB4 Private Property 1	S. Pennsylvania Ave.	Long Beach Twp	Ocean	10	Seasonal	N/A
BB4 Private Property 2	S. Pennsylvania Ave.	Long Beach Twp	Ocean	10	Seasonal	N/A
Mordecai Boat Basin	500 Liberty Ave.	Beach Haven	Ocean	58	Seasonal	Maintenance, Restrooms, Fish Cleaning Table
Sam Cotovs Dock	499 Holyoke Ave.	Beach Haven	Ocean	10	Seasonal	Restrooms
Little Egg Yacht Club	401 Berkeley Ave.	Beach Haven	Ocean	104	Year Round	Restrooms, Boat Ramp
Bayview of Beach Haven Condos	398 S. West Ave.	Beach Haven	Ocean	30	Seasonal	N/A
Amberview Condos	130 S. West Ave.	Beach Haven	Ocean	38	Seasonal	N/A
Beach Haven Yacht Club and Marina	20 S. West Ave.	Beach Haven	Ocean	55	Year Round	Fuel, Pump Out, Restrooms, Fish Cleaning Table
BB4 Condo 2	S. West Ave.	Beach Haven	Ocean	6	Seasonal	N/A
Pollys Dock	112 N. West Ave.	Beach Haven	Ocean	10	Seasonal	Maintenance, Restrooms, Restaurant, Fish Cleaning Table
Morrisons Beach Haven Marina	525 2nd St.	Beach Haven	Ocean	139	Year Round	Restrooms, Fish Cleaning Table, Boat Lift, Fuel, Pump Out
Harborview Club and Marina Condos	8th St.	Beach Haven	Ocean	24	Seasonal	N/A
Shelter Harbor Marina Condos	1000 N. Bay Ave.	Beach Haven	Ocean	206	Seasonal	Restrooms, Fish Cleaning Table, Pump Out
Sportsmans Marina	W. 20th St.	Long Beach Twp	Ocean	65	Seasonal	Restrooms, Boat Lift
Spray Beach Yacht Club	2300 Long Beach Blvd.	Long Beach Twp	Ocean	135	Seasonal	Restrooms, Fish Cleaning Table
Bay Haven Marina	2702 Long Beach Blvd.	Long Beach Twp	Ocean	22	Seasonal	Restrooms
Southwicks Marina	19 W. 32nd St.	Long Beach Twp	Ocean	93	Year Round	Maintenance, Restrooms, Fish Cleaning Table, Boat Lift, Fuel, Pump Out
Beach Haven Terrace Dock Assn.	Bayview Ave.	Long Beach Twp	Ocean	18	Seasonal	N/A
Holgate Marina	83 Tebco Terrace	Long Beach Twp	Ocean	100	Seasonal	Maintenance, Fuel, Restrooms, Fish Cleaning Table, Boat Lift
Shelter Cove Marina	910 S. Green St.	Tuckerton	Ocean	250	Year Round	Maintenance, Fuel, Restrooms, Pump Out, Boat Ramp
Total Marine	355 Great Bay Blvd.	Little Egg Harbor	Ocean	80	Year Round	Restrooms, Fish Cleaning Table, Boat Lift, Boat Ramp

Marina Name	Address	Municipality	County	# of Boat Slips	Dates of Operation	Facility Services
Schimpfs Marina	35 N. Boom Way	Little Egg Harbor	Ocean	70	Seasonal	Fuel, Maintenance, Restrooms, Fish Cleaning Table, Boat Lift, Boat Ramp
Maritime Marine	470 S. Green St.	Tuckerton	Ocean	70	Seasonal	Pump Out, Restrooms, Boat Lift, Boat Ramp, Fish Cleaning
Stewarts Marine	102 W. Main St.	Tuckerton	Ocean	14	Seasonal	Restrooms, Restaurant
GEB Marina/Dockside Café	338 S. Green St.	Tuckerton	Ocean	58	Year Round	Restrooms, Restaurant, Fish Cleaning Table, Boat Lift, Boat Ramp
Skinners Marina	501 Bartlett Ave.	Tuckerton	Ocean	65	Seasonal	Fuel, Boat Lift, Boat Ramp
Tuckerton Marine	464 S. Green St.	Tuckerton	Ocean	47	Year Round	Maintenance, Restrooms, Boat Ramp
Escape Harbor Marina	17 W. 32nd St.	Long Beach Twp	Ocean	60	Seasonal	Restrooms, Fish Cleaning Table
BB4 Unknown 1	W. Main St.	Tuckerton	Ocean	5	Seasonal	N/A
Tuckerton Seaport	120 W. Main St.	Tuckerton	Ocean	17	Year Round	Restrooms, Restaurant
Phil Keeney and Sons	313 S. Green St.	Tuckerton	Ocean	10	Seasonal	Restrooms, Boat Ramp
Tuckerton Municipal Docks	S. Green St.	Tuckerton	Ocean	35	Seasonal	N/A
Farrenys Boat Basin	5500 S. West Ave.	Long Beach Twp	Ocean	30	Seasonal	Restrooms, Fish Cleaning
Black Whale Cruises Dock	Cedar St. at the Bay	Beach Haven	Ocean	10	Seasonal	N/A
Beach Haven Municipal Slips	Dock Rd.	Beach Haven	Ocean	11	Seasonal	Restrooms
BB4 Unknown 2	Bartlett Ave.	Tuckerton	Ocean	10	Seasonal	Fish Cleaning Table
Munros Marina	124 E. Anchor Dr.	Little Egg Harbor	Ocean		Seasonal	Maintenance, Boat Ramp, No Wet Storage
BB4 Private Property 3	S. Pennsylvania Ave.	Long Beach Twp	Ocean	5	Seasonal	N/A
BB4 Private Property 4	436 Pelham Ave.	Long Beach Twp	Ocean	10	Seasonal	N/A
BB4 Private Property 5	1900 West Ave.	Long Beach Twp	Ocean	5	Seasonal	N/A

Spills, Unpermitted Discharges and Closures

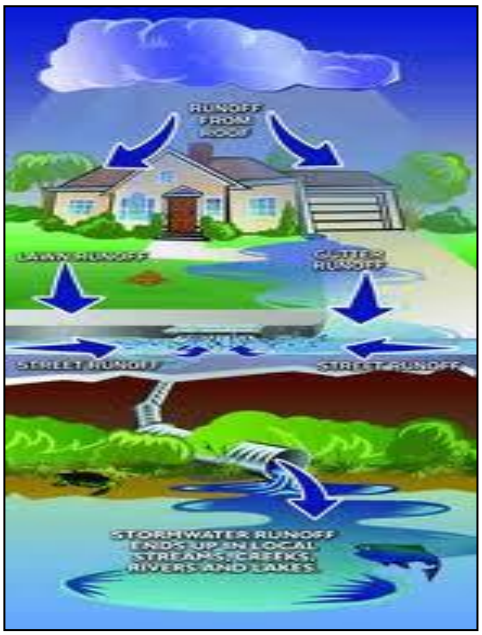
Indirect discharges are groundwater discharges, malfunctioning septic systems, known contaminated sites, spills and dredging projects. Under normal circumstances, these indirect discharges do not routinely affect water quality. However, on occasion they have the potential to result in the closure of shellfish waters due to accidental discharges that result in higher than normal bacteria counts.

Leaks or spills can take place within shellfish growing waters and are frequently the result of a variety of conditions such as sunken boats, pump station failure, broken or blocked sewer lines, manhole overflow, broken pipes in commercial and residential locations or improper run off from commercial or residential locations, construction and roadways.

Often, the spills or unpermitted discharges noted in the above paragraph have limited impact on the chemical or bacteriological water quality. Generally, the spills and discharges are rather small, and their distance to these shellfish growing waters is such that impact is reduced from dilution, percolation and absorption.

Storm Water Discharges

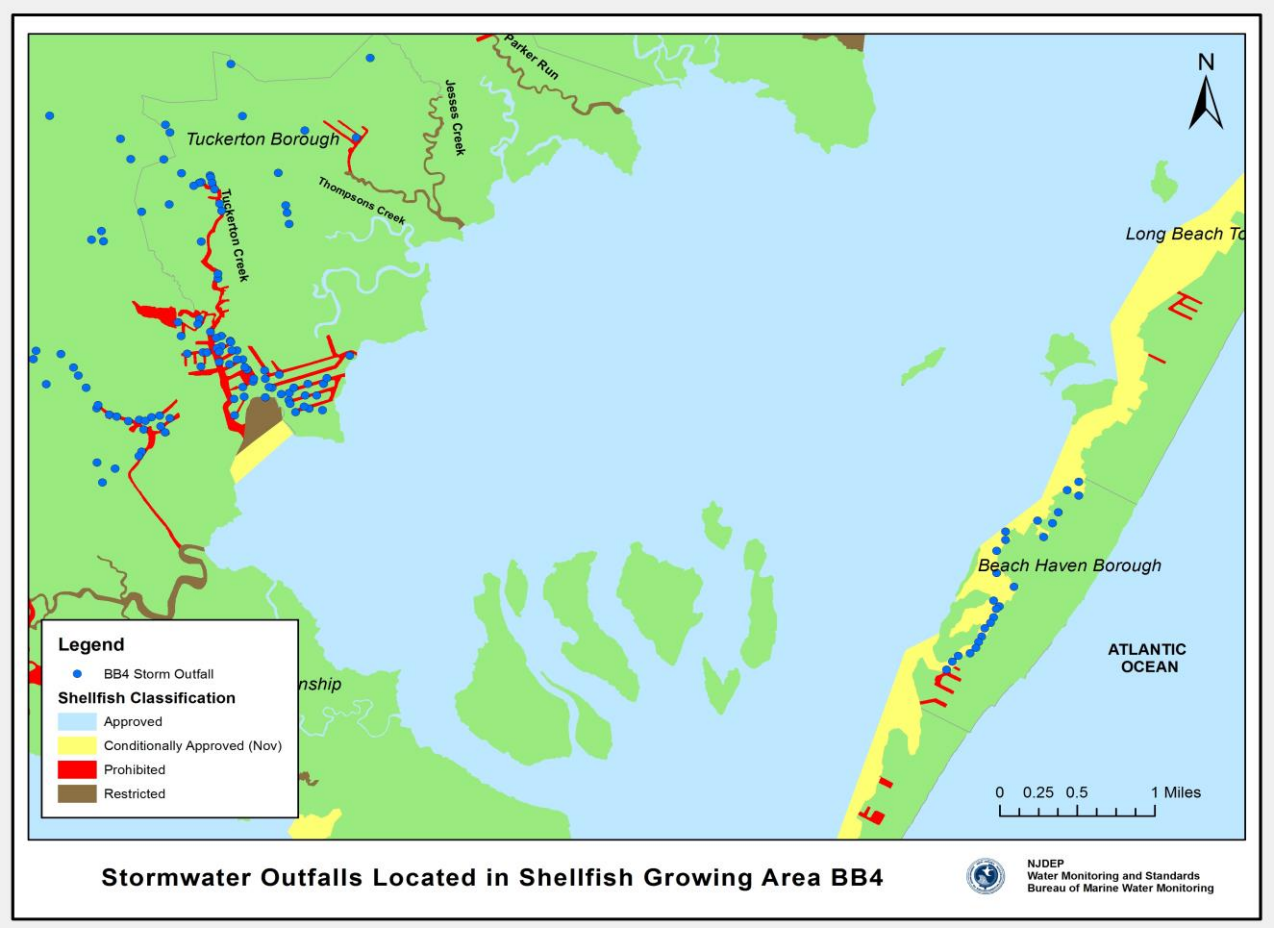
Non-point source pressures on shellfish beds in New Jersey originate in materials that enter the water via stormwater. Stormwater runoff is generated when precipitation from rain and snowmelt flows over land or impervious surfaces and does not percolate into the ground. As the runoff flows over the land or impervious surfaces (paved streets, parking lots and building rooftops), it accumulates debris, chemicals, sediment or other pollutants that could adversely affect water quality if the runoff is discharged untreated. The typical pollutants that are associated with stormwater run-off are bacteria, heavy metals, pesticides, herbicides, fertilizers, chlorides, petroleum and nutrients. (NJStormwater.Org) Most of the stormwater outfalls within this growing area are near residential and urbanized areas. (Illustration by: morgan-hill.ca.gov)



Collecting information on the location and nature of stormwater inputs is partially accomplished by conducting shoreline surveys of shellfish growing area waterways, nearby communities and surrounding rivers, creeks and lagoons.

Stormwater outfalls in this area generally discharge to nearby creeks and lagoons and are generally found near more developed areas. The highest emphases are placed on the stormwater outfalls that discharge directly to shellfish waters. Stormwater impacted areas include lagoon communities in Tuckerton, along Tuckerton Creek and in Beach Haven.

The locations of stormwater outfalls for this growing area are shown below.



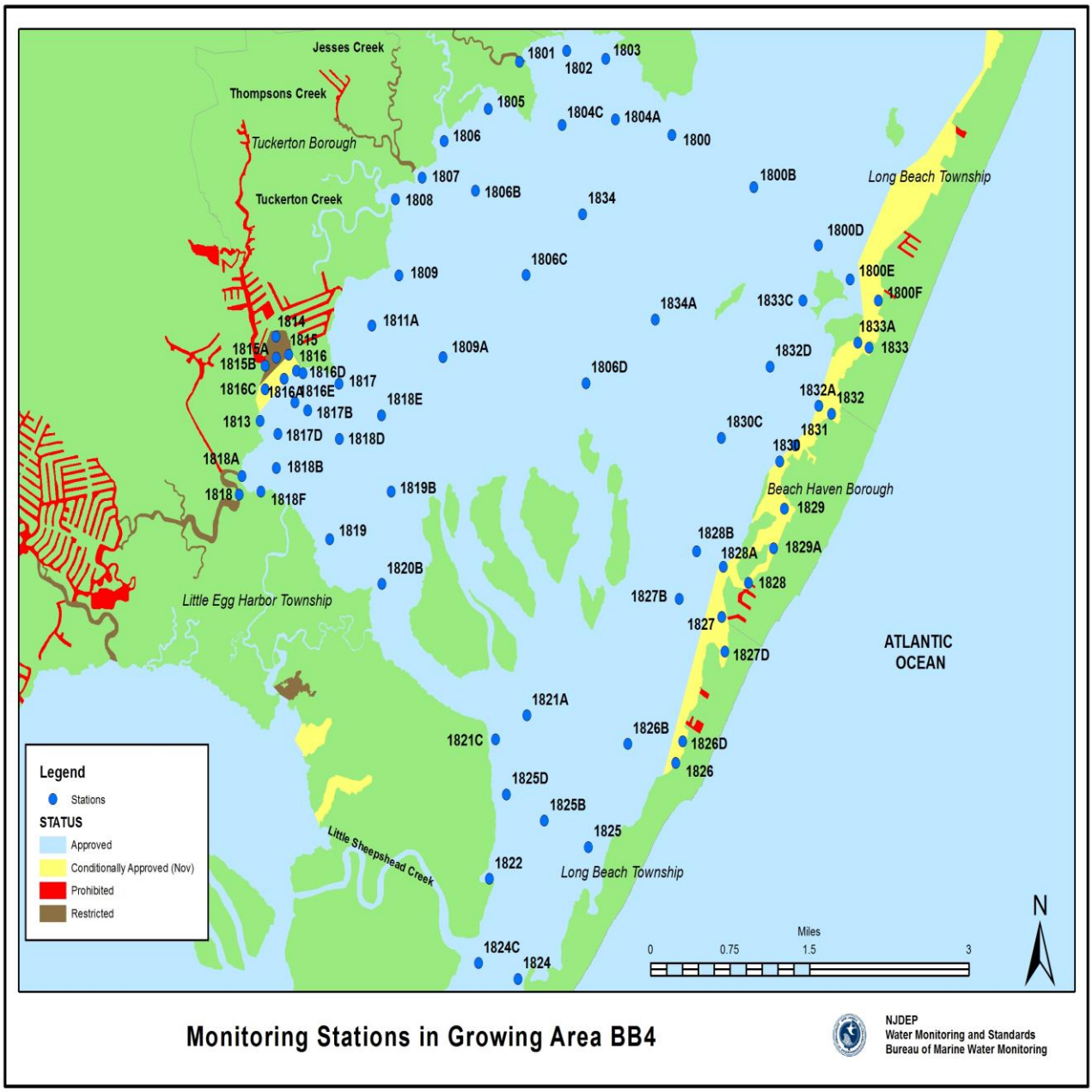
WATER QUALITIES STUDIES

Sampling Strategy

The State shellfish control authority has the option of choosing one of two water monitoring sampling strategies for each growing area, Systematic Random Sampling (SRS) or Adverse Pollution Conditions sampling strategy (APC). For additional information on the types of sampling strategies, see the *Shellfish Growing Area Report Guidance Document, 2011*. This growing area is sampled using the SRS strategy. The SRS strategy is regularly used in areas where precipitation, seasonality or tide play significant roles.

Each shellfish producing state is directed to adopt either the total coliform or fecal coliform criterion to classify its waters. The criteria were developed to ensure that shellfish harvested from designated waters would be free of pathogenic (disease-producing) bacteria. In 2012, New Jersey adopted the fecal coliform criterion for classifying shellfish waters. See the *Shellfish Growing Area Report Guidance Document, 2011* for additional information.

Water sampling was performed in accordance with the Field Procedures Manual (*NJDEP, 2005*). From July 2013 through August 2017, approximately 2407 water samples were collected for fecal coliform bacteria from 72 monitoring stations. The locations of these stations are shown in the map below. Data management and analysis was accomplished using database applications developed for the Bureau. Mapping of pollution data was performed with the use of Geographic Information System (GIS: ArcGIS).



BACTERIOLOGICAL QUALITY

Compliance with NSSP SRS Criteria

According to the NSSP *Guide for the Control of Molluscan Shellfish, 2011*, the water quality of each growing area must be evaluated before an area can be classified as *Approved*, *Conditionally Approved (Nov-Apr or Jan-Apr), Restricted* or *Prohibited*. A *Conditionally Approved* area must be sampled and meet the *Approved* criterion during the time of the year that it is open for shellfish harvest.

Three separate assignment runs (121, 131 and 132) are required for this growing area. The SRS Sampling Strategy requires a minimum of the most recent 30 samples collected from each sampling station. These assignment runs provided sufficient samples for evaluation of this growing area. All monitoring stations in this growing area meet the NSSP requirements for their current classification.

The current data shows that stations in the mouth of Tuckerton Creek that are currently classified as *Conditionally Approved (Nov-Apr)*, meet the criteria for the *Approved* classification. Therefore, a recommendation is being made for these waters to be upgraded. Thirty-nine acres will go from a *Conditionally Approved (Nov-Apr) classification* to an *Approved* classification (see 'Recommendations' for further information).

The current data shows that stations in the mouth of Tuckerton Creek that are currently classified as *Restricted*, meet the criteria for a *Conditionally Approved (Nov-Apr)* classification. Therefore, a recommendation is being made for these waters to be upgraded. Thirty-seven acres will go from a *Restricted* classification to a *Conditionally Approved (Nov-Apr)* classification. (see 'Recommendations' for further information).

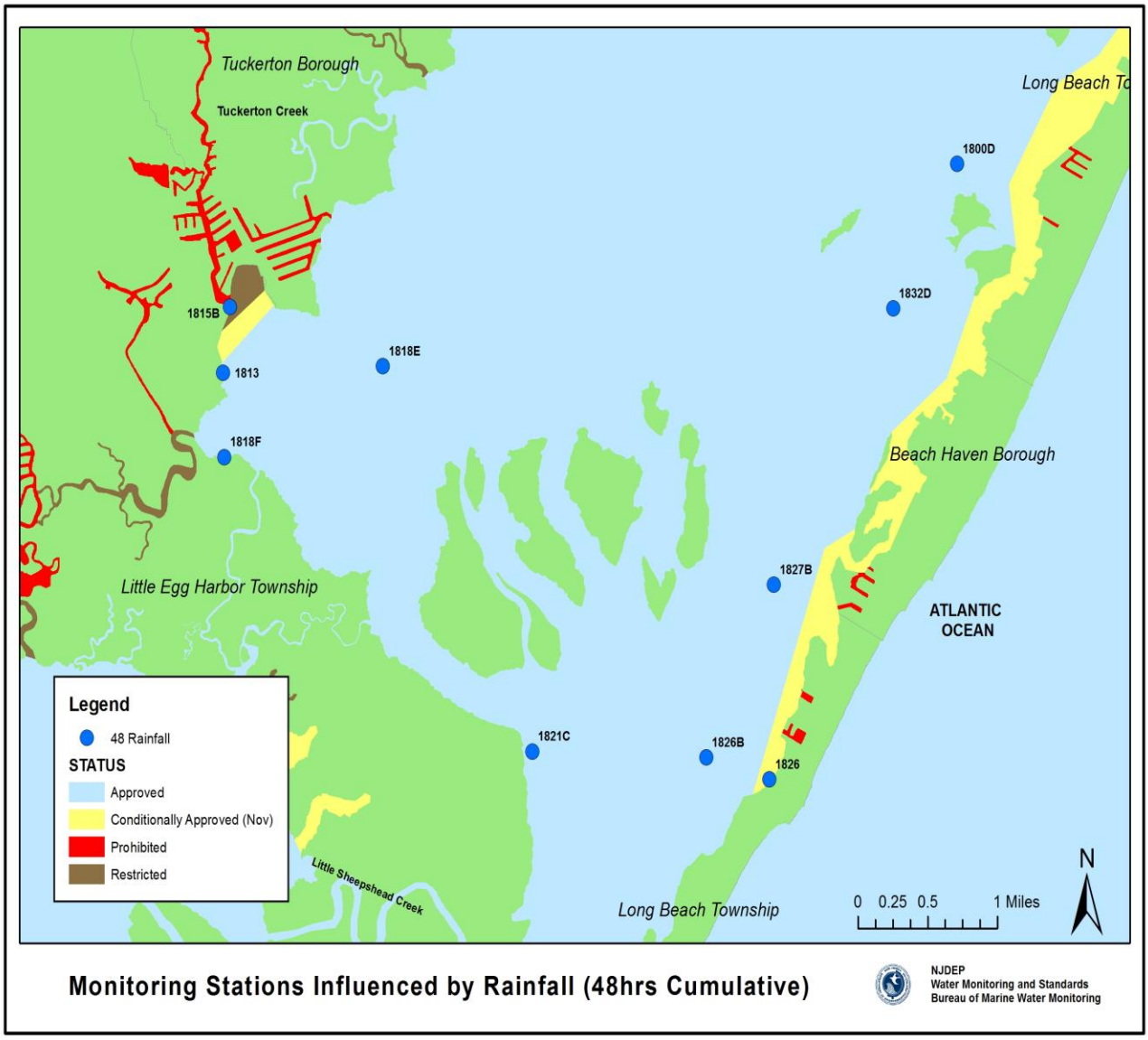
Rainfall Effects

The meteorological monitoring provides valuable contextual data for interpreting water quality implications of short-term weather events and for investigating estuarine responses to longer-term climatic variability (*NERRS, 2008*). Precipitation patterns in the coastal areas of New Jersey are typical of the Mid-Atlantic coastal region. Summer storms are localized and often associated with thunder and lightning activity. Winter storms are frequently associated with northeasters. Hurricanes can occur during the summer and early fall.

Rainfall amounts are based on the closest established NOAA/National Weather Service station; each assignment run is assigned to a weather station to accurately reflect the rainfall at the sampling stations. Precipitation assessment for this shellfish growing area was based on rainfall data collected at Stations RA019 and RA020. These rainfall stations were selected to help determine whether run-off would affect the shellfish waters within this growing area. WM&S/BMWM uses the t-test method to assess rainfall effects. This method compares the coliform values from samples collected during dry weather to samples collected during wet weather and identifies areas where runoff can potentially affect water quality. The wet/dry cutoff determines whether a sample was collected under wet or dry conditions. For this growing area, the wet/dry cutoff criterion was set at 0.2 inches, which is the typical standard used for assessing rainfall effects. The t-test calculated the statistical probability for each station based on 24, 48 and 72 hours of rainfall cumulative. Any stations with a t-statistical

probability of less than 0.05 are believed to be impacted. Stations that are found to be impacted tend to have a higher coliform count during a rainfall event. However, if they are impacted by rain it does not necessarily mean they are also out of compliance with NSSP.

Overall, in this growing area, there is very little influence from rainfall prior to sampling. With rainfall 24 hours prior to sampling, five stations are affected. These stations are most likely affected due to the first flush of rainwater through urban areas and over impervious surfaces.

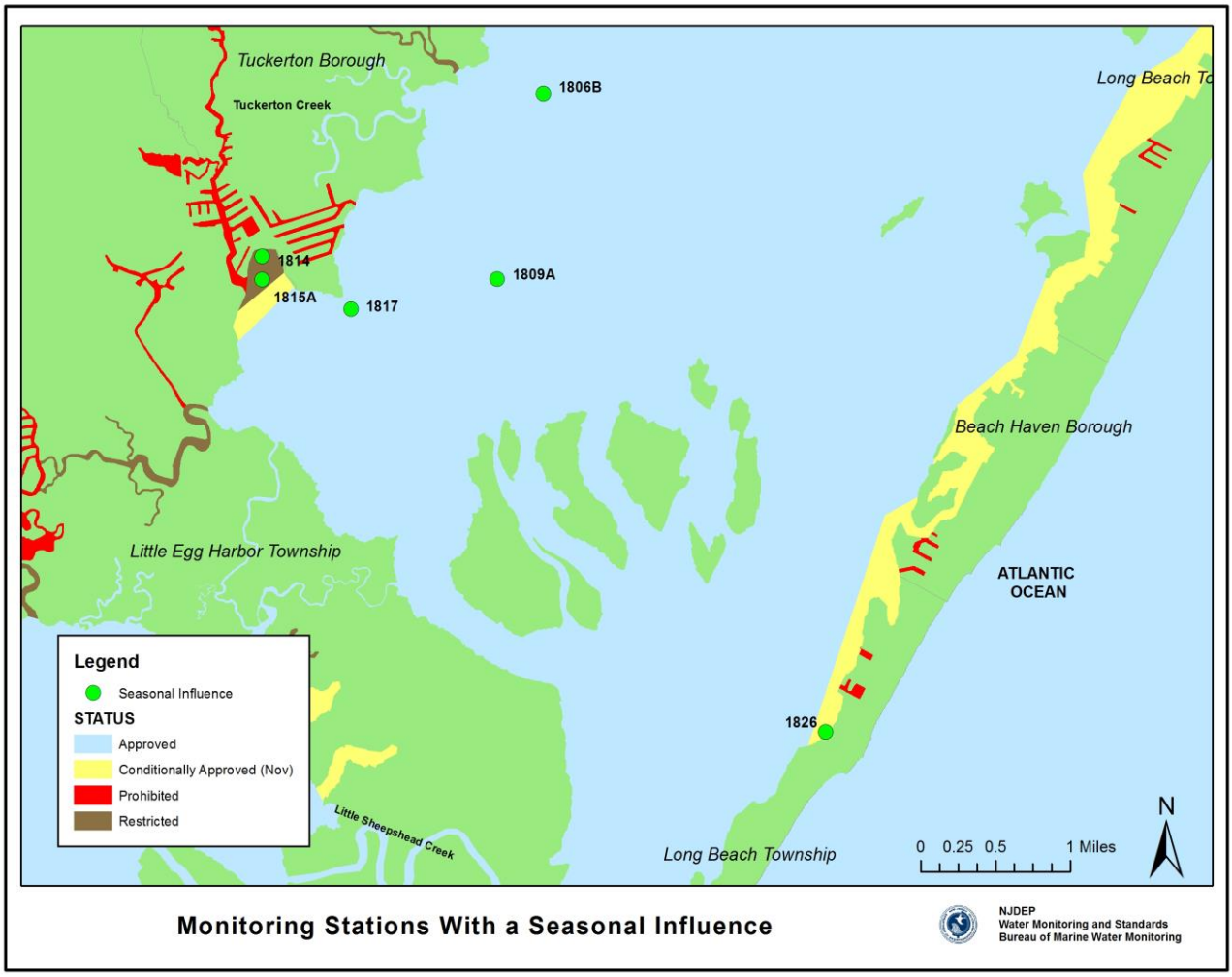


This growing area sees the greatest influence with rainfall 48 hours prior to sampling with ten stations being affected. This is likely due to the spread of the 24 hour impacted stations. There are three stations in this growing area that were affected by rainfall at 72 hours cumulative. All of the stations affected by rain meet the criteria for their current classifications.

Seasonal Effects

Temperature, precipitation, wind and the general circulation of the atmosphere have seasonal variations that also affect the marine environment (*Ingmanson and Wallace, 1989*). Seasonal variation may also be the result of a variety of conditions, including specific agricultural land-use practices, biological activity, stream flow and/or sediment.

To determine whether seasonal variation can influence bacteria counts, WM&S/BMWM uses a t-test to compare the coliform values from samples collected during the summer season versus samples collected during the winter season. Based on the t-test results, six monitoring stations had a t-statistical probability of less than 0.05. Two of the five monitoring stations show a higher summer geometric mean. This is likely due to summer related activities. All of the stations with a seasonal influence meet the criteria for their current classification.



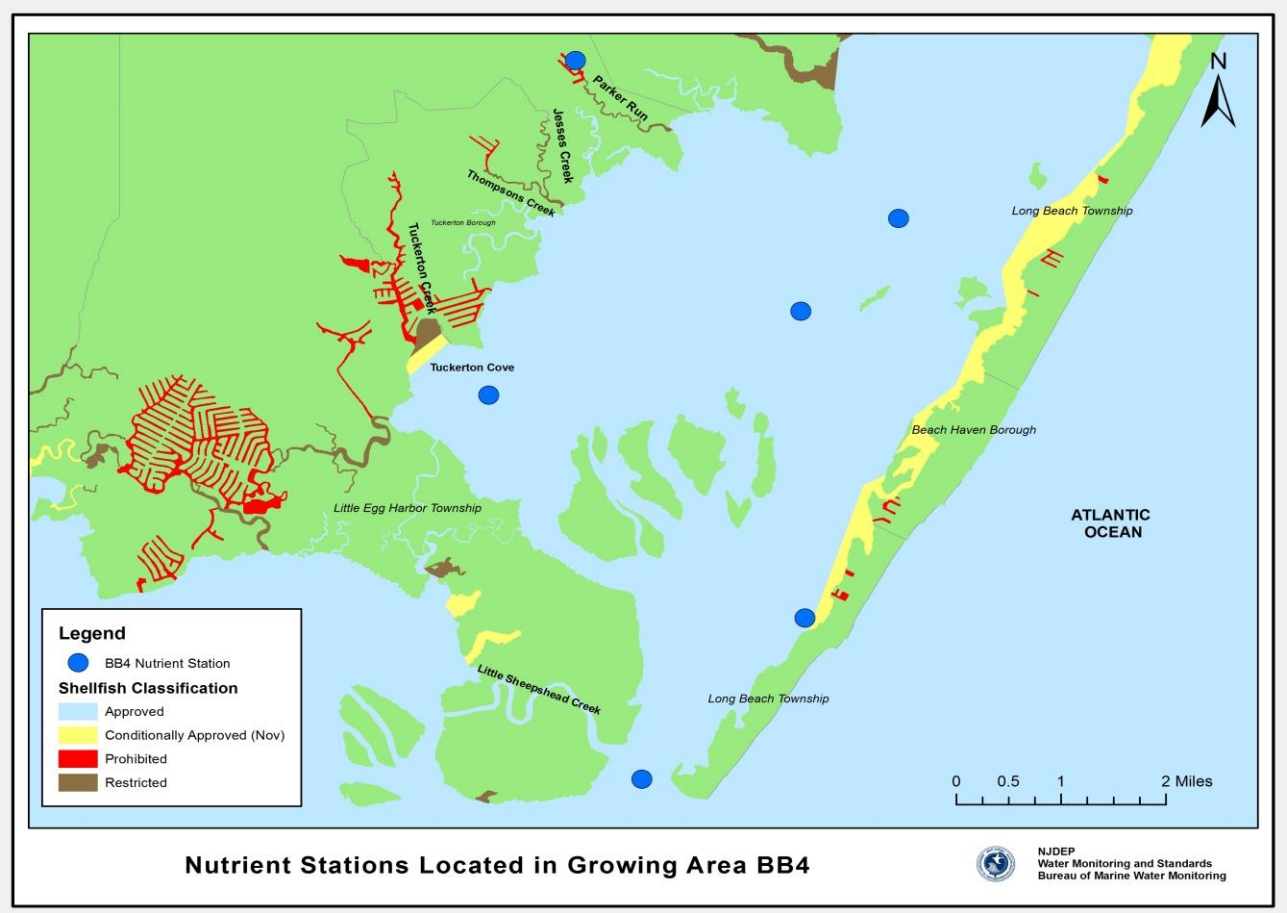
RELATED STUDIES

Nutrients

WM&S/BMWM performs additional water quality studies related to the bacteriological monitoring program. Nutrient monitoring and the collection of nutrient data as part of the NJ Coastal Monitoring Network is an example of one of those studies.

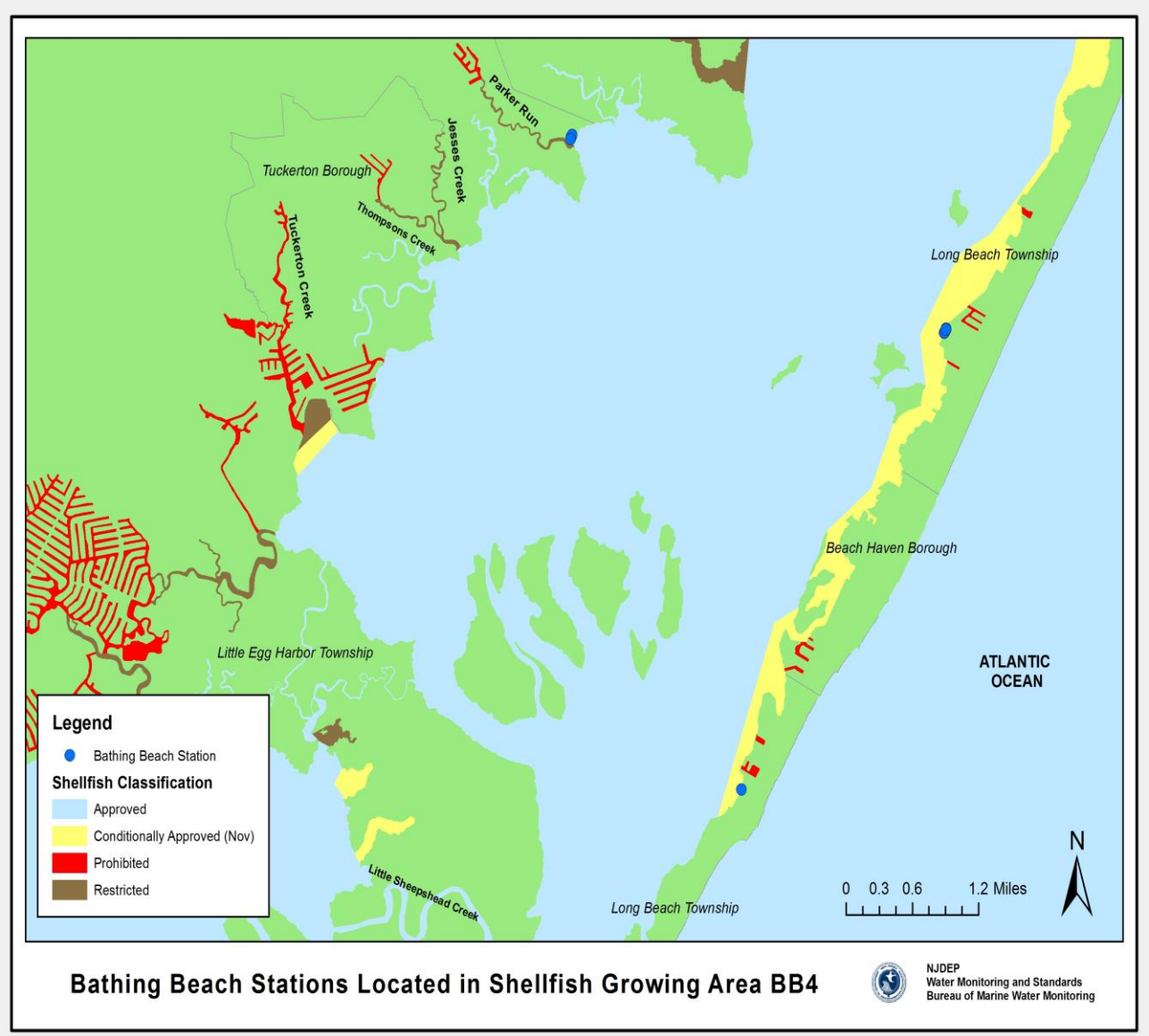
Nutrient stations are sampled monthly on a biennial basis. The 90 nutrient stations are spread throughout the State's back bay waters and tidally impacted rivers. At these nutrient monitoring sites, various parameters are measured including water temperature, biogenic silica, chlorophyll a, pH, salinity, secchi depth, total suspended solids, dissolved oxygen, ammonia, nitrate and nitrite, orthophosphate, total nitrogen and total phosphorus. WM&S/BMWM compiles the results of nutrient levels from such stations and then prepares a separate report. For full nutrient assessment, see the Estuarine Monitoring Reports, available at: http://www.state.nj.us/dep/bmw/.

Six nutrient monitoring sites sampled under the Estuarine monitoring program are located within this shellfish area. Between 2013 and 2017, water samples were collected and analyzed for various parameters (listed above). The map below displays the location of the nutrient monitoring sites.



Cooperative Coastal Monitoring Program

NJDEP, along with the New Jersey Department of Health and Senior Services and local health agencies, implements the Cooperative Coastal Monitoring Program (CCMP) which is responsible for conducting sanitary surveys of beaches and monitors the concentration of bacteria in coastal and estuarine waters that are open to the public for recreational bathing. The local health agencies collect water samples each week at 175 ocean and 43 bay monitoring stations from mid-May through mid-September. Samples are taken once a week, usually on Monday and continued sampling is performed as needed. The samples collected at these sites are tested for Enterococci. Local health agencies and law enforcement may close a beach at any time if the results exceed the State Sanitary Code of 104 Enterococci per 100mL. WM&S/BMWM utilizes these data as adjunct information. The closure of shellfish waters does not necessarily correspond to these results. There are nine CCMP beach sampling sites located within this growing area. For more information regarding this program, bathing beach data and closures, see https://www.njbeaches.org/.



National Coastal Condition Assessment

The National Coastal Condition Assessment (NCCA) is a statistical survey of the condition of our Nation's marine and Great Lakes coasts. The goals of the NCCA are to address questions about the quality of the Nation's coastal waters. The first NCCA sampling field study was conducted in 2010. The most recent field study was conducted in 2015. Data collected includes benthic macroinvertebrates, chlorophyll a, ecological fish tissue contaminants, dissolved oxygen, nitrogen, phosphorus, salinity, sediment contaminants, sediment toxicity and water clarity. The most recent report of NCCA data for this area was written in 2010. A total of 238 NCCA sites were sampled to assess approximately 10,700 square miles of Northeast Coast waters (epa.gov). For additional NCCA data or program information, visit https://www.epa.gov/national-aquatic-resource-surveys/ncca.

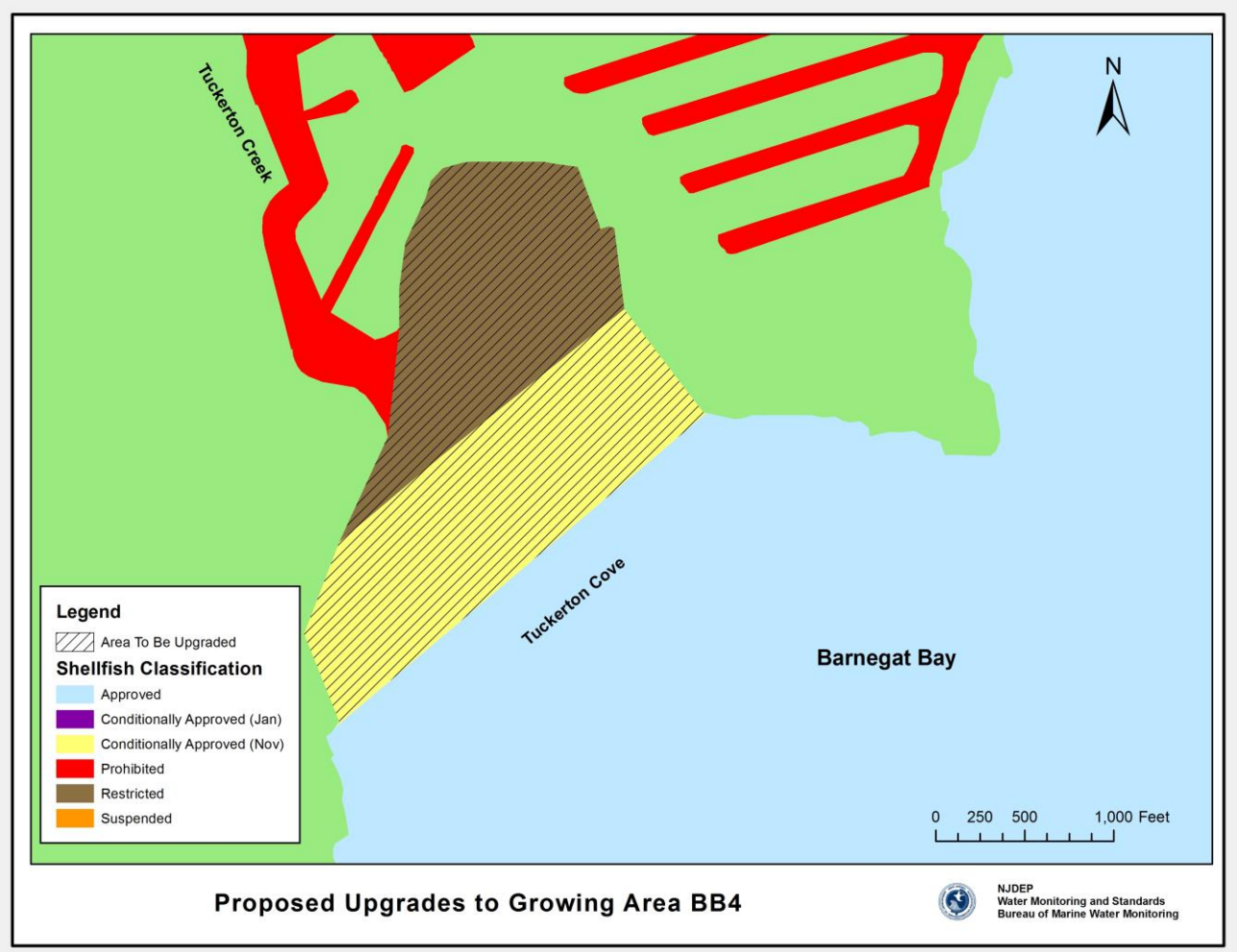
CONCLUSIONS

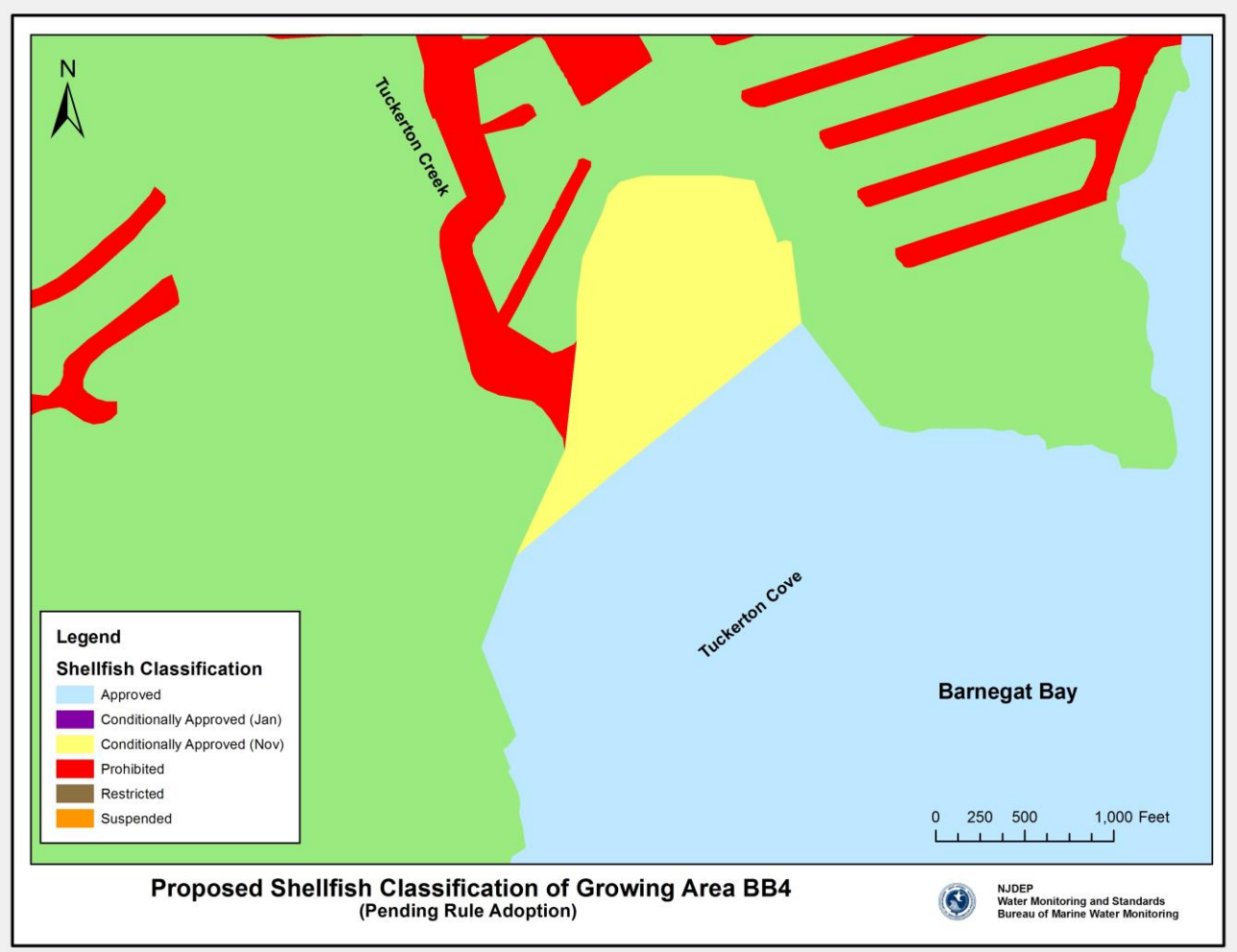
The following conclusions are based on the water quality data from July 2013 through August 2017. Based on NSSP Systematic Random Sampling criteria, all monitoring stations within this growing area meet the NSSP criteria for their current classification.

In this Sanitary Survey, an upgrade of shellfish classification to *Conditionally Approved (Nov-Apr)* is being recommended for the *Restricted* section at the mouth of Tuckerton Creek and an upgrade of shellfish classification to *Approved* is being recommended for the *Conditionally Approved (Nov-Apr)* section at the mouth of Tuckerton Creek. These upgrades in classification are based on consistent good water quality and acceptable bacteriological results in these areas.

RECOMMENDATIONS

It is recommended that 37.2 acres at the mouth of Tuckerton Creek be upgraded from *Restricted* to *Conditionally Approved (Nov-Apr)* and 39.7 acres at the mouth of the Tuckerton Creek be upgraded from *Conditionally Approved (Nov-Apr)* to *Approved*. The following maps show the location of the upgraded areas and proposed shellfish classification. Otherwise, continue sampling the remainder of the growing area according to NSSP SRS protocol.





Regulation Description

Existing Language in N.J.A.C. 7:12-4.1 Shellfish growing water classification -- Conditionally Approved

(a) The following shellfish growing waters are classified as Conditionally Approved, and are in the closed status from May 1 through October 31 and are in the open status from November 1 through April 30:

…

4. Barnegat Bay to Little Egg Harbor Bay-Long Beach Island area:

…

iv. Tuckerton area (Note: A portion of Tuckerton Cove is designated as Restricted. See N.J.A.C. 7:12-3. Portions of Tuckerton Creek are designated as Prohibited. See N.J.A.C. 7:12-2): The waters of Tuckerton Cove between a location on Gaunt Point situated on the eastern bank of Tuckerton Cove at the terminus of South Green St. with coordinates of latitude 39 degrees 34 minutes 35.9 seconds N., and longitude 74 degrees 19 minutes 53.1 seconds W., and then bearing 229 degrees T for 0.45 nautical miles to a point on the western bank with coordinates of latitude 39 degrees 34 minutes 18.7 seconds N., and longitude 74

degrees 20 minutes 19.2 seconds W., then in a northerly direction for 0.20 nautical miles along the western shoreline to a point with coordinates of latitude 39 degrees 34 minutes 28.8 seconds N., and longitude 74 degrees 20 minutes 19.3 seconds W., then bearing 050 degrees T for 0.34 nautical miles to a point on the eastern bank with coordinates of latitude 39 degrees 34 minutes 41.7 seconds N., and longitude 74 degrees 19 minutes 58.8 seconds W., and terminating.

Existing Language in N.J.A.C. 7:12-3.1 Shellfish growing waters that are classified as Restricted

(a) The following shellfish growing waters are classified as Restricted:

…

18. Tuckerton area (Note: Portions are also designated as Prohibited or Conditionally Approved. See N.J.A.C. 7:12-2 and 4): The waters of Tuckerton Cove and tributaries thereof between a location on Gaunt Point that is west of Little Egg Harbor Boulevard and situated on the eastern bank of Tuckerton Cove with coordinates of latitude 39 degrees 34 minutes 41.7 seconds N., and longitude 74 degrees 19 minutes 58.8 seconds W., and then bearing 230 degrees T for 0.34 nautical miles to a point on the west bank of Tuckerton Cove with coordinates of latitude 39 degrees 34 minutes 28.8 seconds N., and longitude 74 degrees 20 minutes 19.3 seconds W., then in a northeasterly direction along the western shore of Tuckerton Cove for 0.11 nautical miles to a point on the western shoreline with coordinates of latitude 39 degrees 34 minutes 34.7 seconds N., and longitude 74 degrees 20 minutes 15.8 seconds W., then bearing 6 degrees T for 0.10 nautical miles to a point on the eastern bank of Tuckerton Cove, southeast of Parker Rd. with coordinates of latitude 39 degrees 34 minutes 40.7 seconds N., and longitude 74 degrees 20 minutes 14.9 seconds W., then continuing northeast, west, then southeast along the Tuckerton Cove shoreline to the point of origin and terminating.

Suggested Language in N.J.A.C. 7:12-4.1 Shellfish growing water classification -- Conditionally Approved

(a) The following shellfish growing waters are classified as Conditionally Approved, and are in the closed status from May 1 through October 31 and are in the open status from November 1 through April 30:

1-3 – no change

4. Barnegat Bay to Little Egg Harbor Bay-Long Beach Island area:

i.-iii. – no change

iv. Tuckerton area (Note: [A portion of Tuckerton Cove is designated as Restricted. See N.J.A.C. 7:12-3.] Portions of Tuckerton Creek are designated as Prohibited. See N.J.A.C. 7:12-2): [The waters of Tuckerton Cove between a location on Gaunt Point situated on the eastern bank of Tuckerton Cove at the terminus of South Green St. with coordinates of latitude 39 degrees 34 minutes 35.9 seconds N., and longitude 74 degrees 19 minutes 53.1 seconds W., and then bearing 229 degrees T for 0.45 nautical miles to a point on the western bank with coordinates of latitude 39 degrees 34 minutes 18.7 seconds N., and longitude 74

degrees 20 minutes 19.2 seconds W., then in a northerly direction for 0.20 nautical miles along the western shoreline to a point with coordinates of latitude 39 degrees 34 minutes 28.8 seconds N., and longitude 74 degrees 20 minutes 19.3 seconds W., then bearing 050 degrees T for 0.34 nautical miles to a point on the eastern bank with coordinates of latitude 39 degrees 34 minutes 41.7 seconds N., and longitude 74 degrees 19 minutes 58.8 seconds W., and terminating.] **All waters starting at a point with coordinates of latitude 39° 34' 41.8" North and longitude 74° 19' 58.7"West moving along the shoreline in a north westerly direction to a point with coordinates of latitude 39° 34' 40.8"North and longitude 74° 20' 15.5"West crossing over Tuckerton Creek to a point with coordinates of latitude 39° 34' 35.3"North and longitude 74° 20' 17.0"West moving along the shoreline in a southernly direction to a point with coordinates of latitude 39° 34' 29.0"North and longitude 74° 20' 19.2"West and moving to the point of origin and terminating.**

Suggested Language in N.J.A.C. 7:12-3.1 Shellfish growing water classification -- Restricted

(a) The following shellfish growing waters are classified as Restricted:

…

18. [Tuckerton area (Note: Portions are also designated as Prohibited or Conditionally Approved. See N.J.A.C. 7:12-2 and 4): The waters of Tuckerton Cove and tributaries thereof between a location on Gaunt Point that is west of Little Egg Harbor Boulevard and situated on the eastern bank of Tuckerton Cove with coordinates of latitude 39 degrees 34 minutes 41.7 seconds N., and longitude 74 degrees 19 minutes 58.8 seconds W., and then bearing 230 degrees T for 0.34 nautical miles to a point on the west bank of Tuckerton Cove with coordinates of latitude 39 degrees 34 minutes 28.8 seconds N., and longitude 74 degrees 20 minutes 19.3 seconds W., then in a northeasterly direction along the western shore of Tuckerton Cove for 0.11 nautical miles to a point on the western shoreline with coordinates of latitude 39 degrees 34 minutes 34.7 seconds N., and longitude 74 degrees 20 minutes 15.8 seconds W., then bearing 6 degrees T for 0.10 nautical miles to a point on the eastern bank of Tuckerton Cove, southeast of Parker Rd. with coordinates of latitude 39 degrees 34 minutes 40.7 seconds N., and longitude 74 degrees 20 minutes 14.9 seconds W., then continuing northeast, west, then southeast along the Tuckerton Cove shoreline to the point of origin and terminating.] **Reserved**

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Supporting Documentation

Data Sheets – Sanitary Survey Report for Shellfish Growing Area BB4 (Southern Barnegat Bay), December 2017 see the Shellfish Growing Area Reports section at *www.state.nj.us/dep/wms/bmw*.

Shoreline survey field notes and pictures - Sanitary Survey Report for Shellfish Growing Area BB4 (Southern Barnegat Bay), December 2017 see the Shellfish Growing Area Reports section at *www.state.nj.us/dep/wms/bmw*.

APPENDICES

A. Data Listing – July 2013 through August 2017
    1. Seasonal Evaluation
    2. Wet/Dry Statistics
    3. Rainfall Amount
B. Shoreline and Septic Survey Sheets, Potential Contamination Sites
C. Municipal and Individual Pump Station Locations