NJ Department of Environmental Protection
Water Monitoring and Standards

Reappraisal Report of Shellfish Growing Area NE1 (Raritan Bay – Sandy Hook Bay)

August 2017

State of New Jersey
Chris Christie, Governor
Kim Guadagno, Lt. Governor

NJ Department of Environmental Protection
Bob Martin, Commissioner

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(Raritan Bay – Sandy Hook Bay)

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Cover Photo – Raritan Bay from Ideal Beach (Middletown, NJ) –by Scott Chernoff

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EXECUTIVE SUMMARY

Shellfish growing area NE1 lies within the New York-New Jersey Harbor Estuary. This Estuary is one of the largest and its watershed has some of the most diversified communities on the east coast. It is home to millions of residents, ports, industries, and transportation complexes. The New York-New Jersey Harbor Estuary includes the waters of New York Harbor and the tidally influenced portions of all rivers and streams that empty into the Harbor. Raritan and Sandy Hook Bays form the southeastern portion of the New York -New Jersey Harbor between the southern shoreline of Staten Island, New York, and the northern shoreline of Monmouth County, New Jersey. This report focuses on the waters of the Raritan Bay and Sandy Hook Bay that lies within New Jersey jurisdiction.

The general outline of this growing area includes a portion of the Raritan River, Raritan Bay, and Arthur Kill that lies south of the New Jersey/New York boundary, Sandy Hook Bay, and a short portion of the Shrewsbury River. The current shellfish classifications are *Restricted* and *Prohibited*. There is no direct market of shellfish harvested from this growing area due to the higher levels of bacteria that are found in these waters. Shellfish harvested from these waters must undergo depuration before they are marketable. Depuration is a process that purifies the shellfish by pumping UV treated bacteria-free water through clams in holding tanks for a minimum of 48 hours, thus rendering a product that will be safe for consumption. Depuration is used in all of the hard clams harvested from the *Restricted* waters of this growing area.

Water Monitoring & Standards, Bureau of Marine Water Monitoring (WM&S/BMWM) monitor this area in accordance with the National Shellfish Sanitation Program (NSSP). Water sampling is based on the Adverse Pollution Condition (APC) sampling strategy due to the discharge of treated wastewater effluent to the Raritan Bay by the Middlesex County Utility Authority (MCUA). Between 2012 and 2016, 2,332 water samples were collected from 53 monitoring sites and analyzed for fecal coliform. Data was assessed against the NSSP *Restricted* criteria and all monitoring stations not in *Prohibited* areas were found to be in compliance. Only 1 station, Station 20A, did not meet the *Restricted* criteria – however this station is in *Prohibited* waters near the mouth of the Raritan River and Arthur Kill. Seasonal and rainfall assessment suggested that the season and rainfall can highly influence the bacteria levels that are found in some areas of the bays – with 23 affected stations. Central and east Raritan Bay, and north Sandy Hook Bay contain stations that are affected by season. Stations in Raritan Bay and Sandy Hook Bay close to the shore, and stations in Sandy Hook bay near the NJ-NY boundary were affected by rainfall. The water quality of this shellfish growing area is not only influenced by the runoffs that occurs within this area, but is also affected by the discharges that occur in New York and possibly wildlife.

Generally, the bacteriological data shows water quality improvement during the summer and water quality deterioration during the winter in NE1. Sandy Hook Bay is the only area that has the potential to be upgraded in the future if the water quality continues to improve. The data does support the existing shellfish classification; therefore, no modification required.

GROWING AREA PROFILE

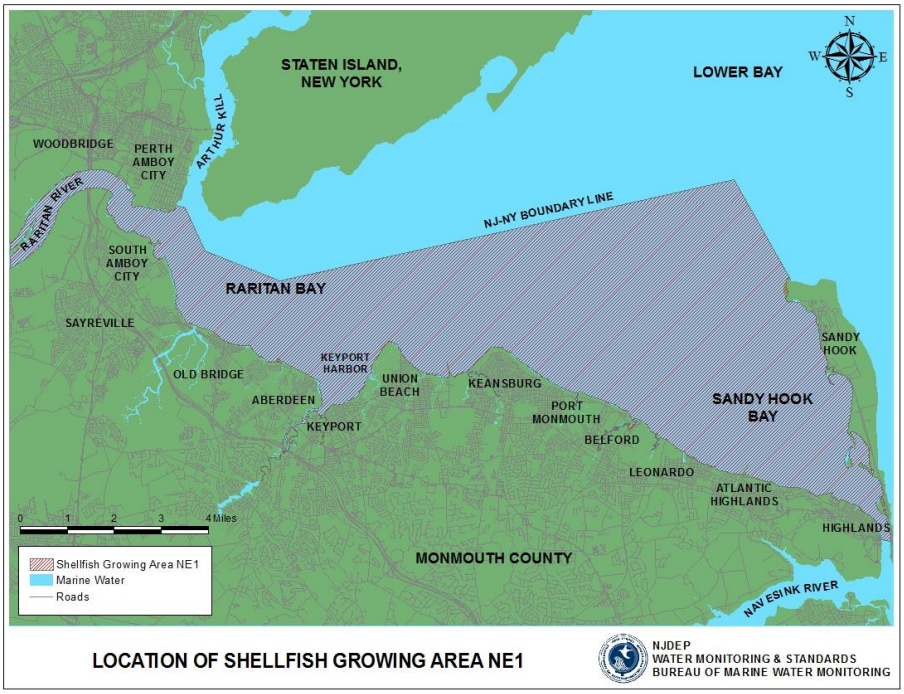
Location and Description

Shellfish growing area NE1 lies within the New York-New Jersey Harbor Estuary. This Estuary is one of the largest and most diversified communities on the east coast; home to millions of residents, ports, industries, and transportation complexes. The New York-New Jersey Harbor Estuary includes the waters of New York Harbor and the tidally influenced portions of all rivers and streams that empty into the Harbor.

Raritan-Sandy Hook Bay Complex

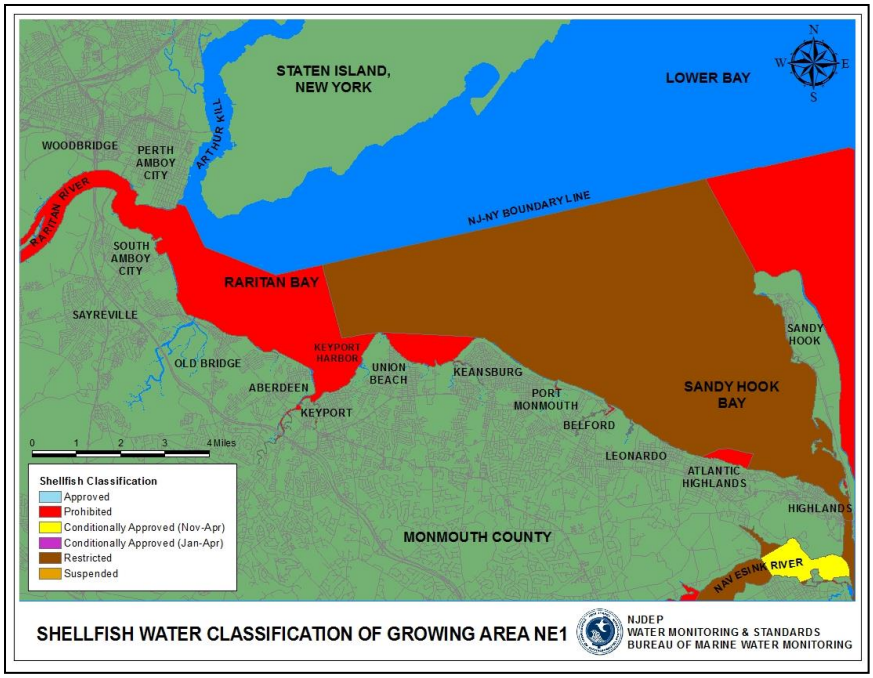
Raritan and Sandy Hook Bays form the southeastern portion of the New York - New Jersey Harbor between the southern shoreline of Staten Island, New York, and the northern shoreline of Monmouth County, New Jersey. This complex receives direct inflow from the Raritan River, the Shrewsbury and Navesink Rivers, and numerous smaller tributaries along the shorelines of Staten Island and New Jersey. The bays also receive indirect inflow from the Hudson through Lower New York Bay and the Passaic and Hackensack Rivers via Newark Bay and the Arthur Kill.

This report focuses on the waters of the Raritan Bay and Sandy Hook Bay that are within New Jersey jurisdiction. The approximate size of this shellfish growing area is thirty-three thousands acres. The general outline of this growing area includes a portion of the Raritan River, Raritan Bay, and Arthur Kill that lies south of the New Jersey/New York boundary, Sandy Hook Bay, and a portion of the Shrewsbury River.

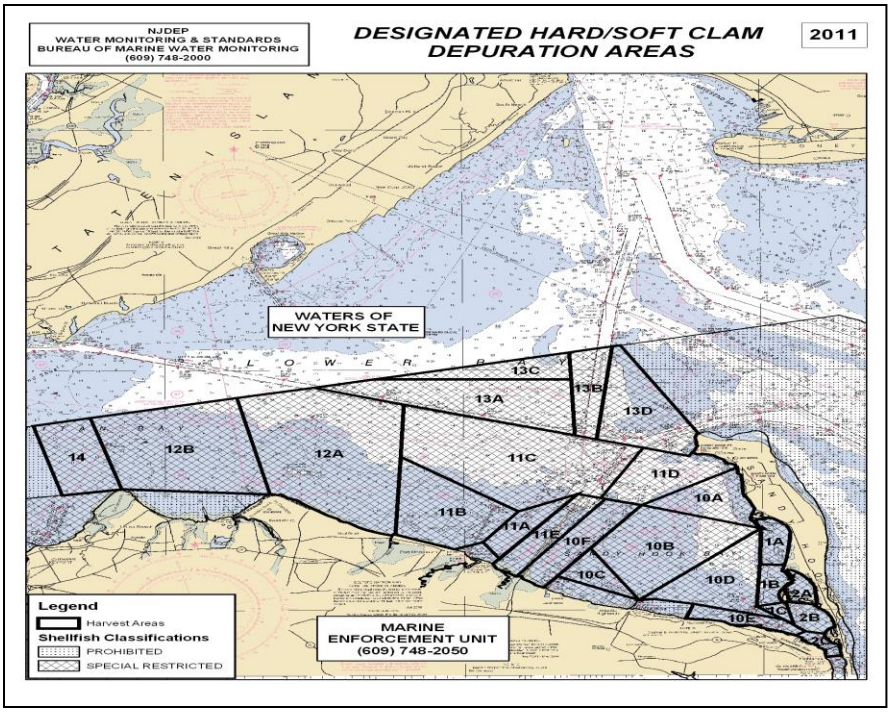


Growing Area Classification Summary

The current shellfish classifications for this area are *Restricted and Prohibited.* *Restricted* accounts for approximately 77% of all the shellfish waters in this area. Areas that are classified as *Restricted* include Sandy Hook Bay (except for the buffer zone that surrounds the Atlantic Highlands Municipal Yacht Basin, which is classified as *Prohibited).* The *Prohibited* areas can be found in the Raritan River, portions of Raritan Bay, Union and Belvedere Beaches, Atlantic Highlands Municipal Yacht Basin, and Keyport Harbor. The shellfish classifications for this growing area can also be found on the 2016 State of New Jersey Shellfish Growing Water Classification Charts # 1 and 2 or on WM&S/BMWM website at http://www.state.nj.us/dep/bmw/.



There is no direct market of shellfish harvested from this growing area due to the high levels of bacteria that are found in these waters. Shellfish harvested from these waters must undergo depuration before they are marketable. Depuration is a process that purifies the shellfish by pumping UV treated bacteria-free water through clams in holding tanks for a minimum of 48 hours. This renders the product safe for consumption. Clammers who wish to harvest shellfish from *Restricted* waters must obtain a valid shellfish license and permit. Harvesters can only harvest in designated areas.

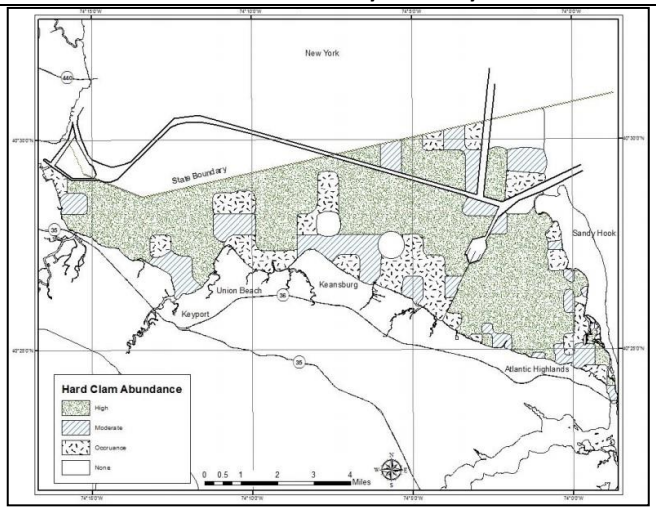


Evaluation of Biological Resources

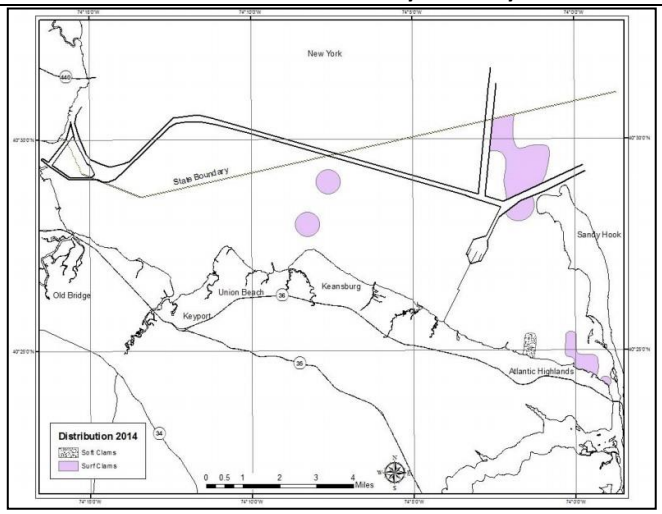
There is an abundance of biological resources that are beneficial to New Jerseys' economy. New Jersey is considered one of the U.S.'s major ports for commercial fishery landings. The five major fishing ports in New Jersey are Belford, Point Pleasant, Barnegat Light, Atlantic City, and Cape May. Four of these ports are ranked among the top 50 ports in the nation based on harvest value. The surf clam (*Spisula solidissima*) fishery is one of New Jersey's most valuable fisheries. More than 80% of the total Mid-Atlantic and New England area catch of surf clams are landed in New Jersey (Bureau of Shellfisheries). The 2014 commercial fisheries statistics show over 17.5 million pounds of clams and bivalves harvested, with a dockside value of over 12.7 million dollars (NOAA-NMFS).

In 2014, NJDEP Bureau of Shellfisheries conducted a hard clam (*Mercenaria mercenaria*) stock assessment of the Raritan and Sandy Hook bays, an area which provides over 50% of the state's commercial hard clam landing through the depuration program. They found high density of hard clams in the Raritan and Sandy Hook bays, estimated at 839.1 million and 355.1 million, respectively. Compared to the 2000 study, hard clam resource in the Raritan and Sandy Hook bays have increased by 39% and 4%, respectively. The study also indicated the presence of soft clams (*Mya arenaria*), blue mussels (*Mytilus edulis*), and Atlantic surf clams (*Spisula solidissima*) (Bureau of Shellfisheries). The shellfish density maps from the NJDEP Bureau of Shellfisheries for hard, soft, and surf clams are shown below.

2014 Shellfish Inventory of Hard Clams in the Raritan and Sandy Hook Bay



2014 Shellfish Inventory of Surf and Soft Clams in the Raritan and Sandy Hook Bay



Shoreline Survey: Evaluation of Potential Pollution Sources

Shoreline surveys or site-specific tours of areas nearby or abutting 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 survey of NE1 was conducted in 2017. The following sections detail information derived collectively from those surveys, and those that preceded them.

Shoreline Survey

A shoreline survey was conducted for the growing area on June 26th, June 29th, and July 11th of 2017. Live horseshoe crabs and whelks were seen on Ideal Beach in Middletown in the early morning, while shorebirds were seen along all of the Raritan Bay and Sandy Hook Bay shoreline. Undeveloped areas near the water had different species of grasses and common reed (*Phragmites australis*). The dunes in Keansburg and Middletown by the recreational beaches were populated with shrubs and grasses. There was much trash noted on Ideal Beach (Middletown) and the Keansburg beaches.

Hurricane Sandy caused damage and destruction throughout NE1 in 2012; much of the shoreline development has changed since the last shoreline survey and report. Some marinas were destroyed and rebuilt, some were repaired, and some have not changed much since the last report. Many of the homes and buildings in the Atlantic Highlands and Highlands area have been raised since Hurricane Sandy. On Lighthouse Point Road, which is on a point of land sticking into Sandy Hook Bay in Highlands, NJ, there was a trailer park that was destroyed by Hurricane Sandy. At the time of the shoreline survey, there was a completed condominium complex built at the end of the point, while another was being constructed next to it. Much of the houses and buildings in Highlands and Atlantic Highlands have been raised recently or were in the process of being raised. A flood control wall was being constructed by Pews Creek on Port Monmouth Road in Middletown. The flood control wall on Thornes Creek in Keansburg prevented major damage from occurring to the marinas upstream during Hurricane Sandy.

Following counts of Enterococci above the bathing standard of 104 CFU/100mL as part of the Cooperative Coastal Monitoring Program in June 2017 at Highlands Rec Center beach in Highlands, NJ, a dye study was used to determine the source of bacterial pollution. A leak was found in the sanitary sewer line near Linden and Waterwitch streets, which was leaking into the stormwater system and out Mary's Creek next to the bathing beach. The sanitary sewer line was repaired following the dye study. Continued sampling of Growing Area NE1 will determine if the repaired sanitary sewer leak had an impact on Sandy Hook Bay's water quality.

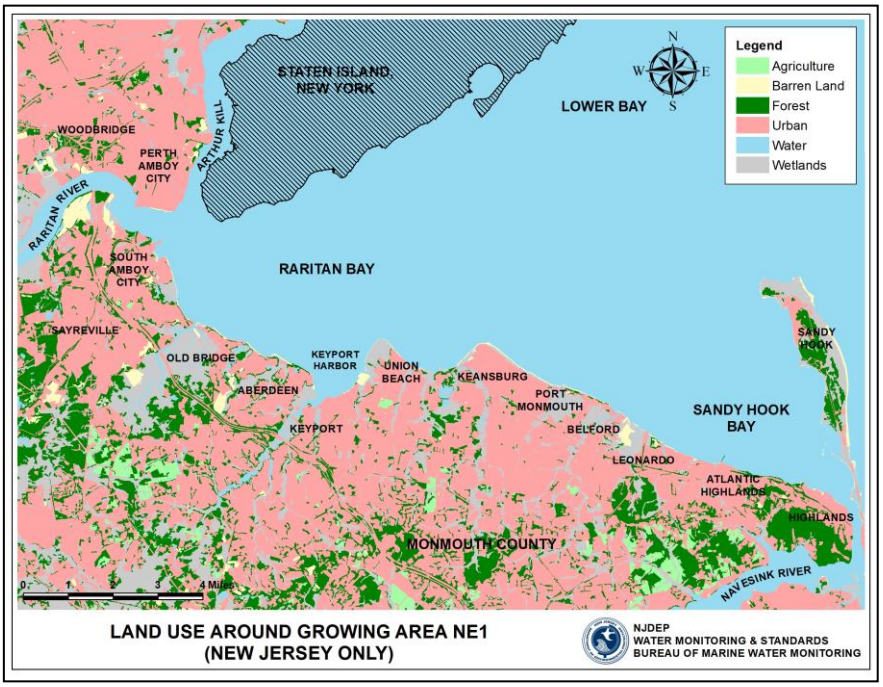
Land Use

Shellfish growing area NE1 is adjacent to the following Watershed Management Areas (WMA): WMA 07-Arthur Kill, WMA 09-Lower Raritan, and WMA 12-Monmouth. These are heavily populated areas, with numerous industries and transportation complexes. Urban development makes up the majority of the land uses in this area. As population grows and more urban lands are needed; forest, wetland, and agriculture landscape are being redeveloped into urban areas.

Recent Classification Changes

The Prohibited waters of Keyport Harbor were downgraded from their former Restricted classification in early 2014. Pursuant to N.J.A.C. 7:12-1.4(b) the Department shall immediately suspend harvest in any waters that, at the time of sampling, do not meet the standards for the particular waters' classification, pending the establishment by rulemaking of the appropriate classification and boundaries of the waters as Prohibited, Restricted, Conditionally Restricted, Conditionally Approved, or Approved. On April 9, 2014, Administrative Order No. 2014-01 suspended 957.0 acres in Keyport Harbor to shellfishing. The downgraded area was south of a line between Conaskonk Point, Union Beach, New Jersey and Aberdeen Township, New Jersey, and north of Matawan Creek. Additionally, Administrative Order 2014-01 suspended harvest from 17 acres of Restricted waters at Atlantic Highlands Municipal Marina. The downgraded area was an expansion of the Prohibited buffer zone at Atlantic Highlands Municipal Marina. The suspended waters were classified as Prohibited upon the adoption of the Shellfish Growing Water Classification rules, N.J.A.C. 7:12, listed in the September 19, 2016, edition of the New Jersey Register.

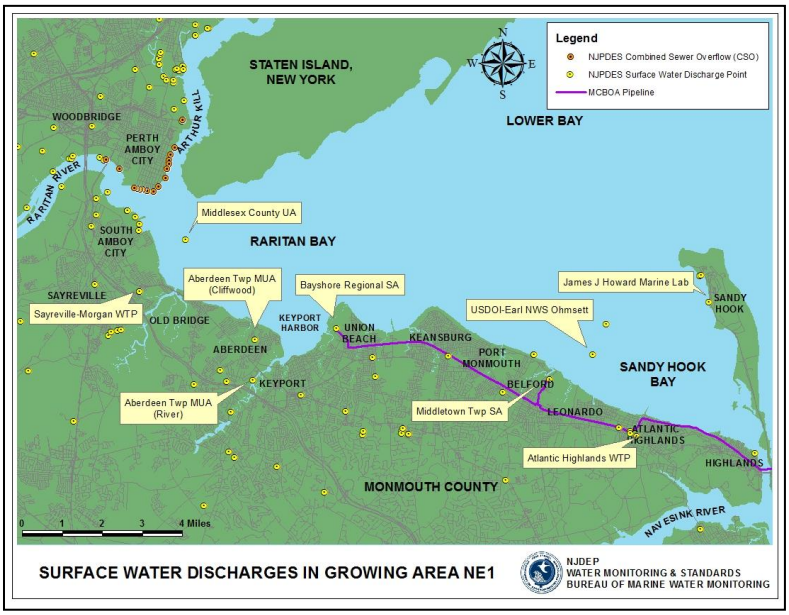
Land Use Type	2007 (Acres)	2012 (Acres)	% Net Change
WMA 12 (MONMOUTH)			
Agriculture	11,665	10,502	-10%
Barren Land	3,167	3,158	-0.28%
Forest	31,169	31,898	2%
Urban Land	112,862	113,613	1%
Water	97,865	97,812	-0.05%
Wetland	40,876	40,395	-1%
WMA 9 (LOWER RARITAN)			
Agriculture	10,471	9,853	-6%
Barren Land	3,722	3,356	-10%
Forest	34,693	34,469	-1%
Urban Land	129,911	131,745	1%
Water	5,987	6,079	2%
Wetland	40,257	39,268	-2%
WMA 7 (ARTHUR KILL)			
Agriculture	103	69	-33%
Barren Land	1,064	1,021	-4%
Forest	7,683	7,458	-3%
Urban Land	83,807	83,947	0.17%
Water	4,180	4,198	0.43%
Wetland	4,410	4,321	-2%



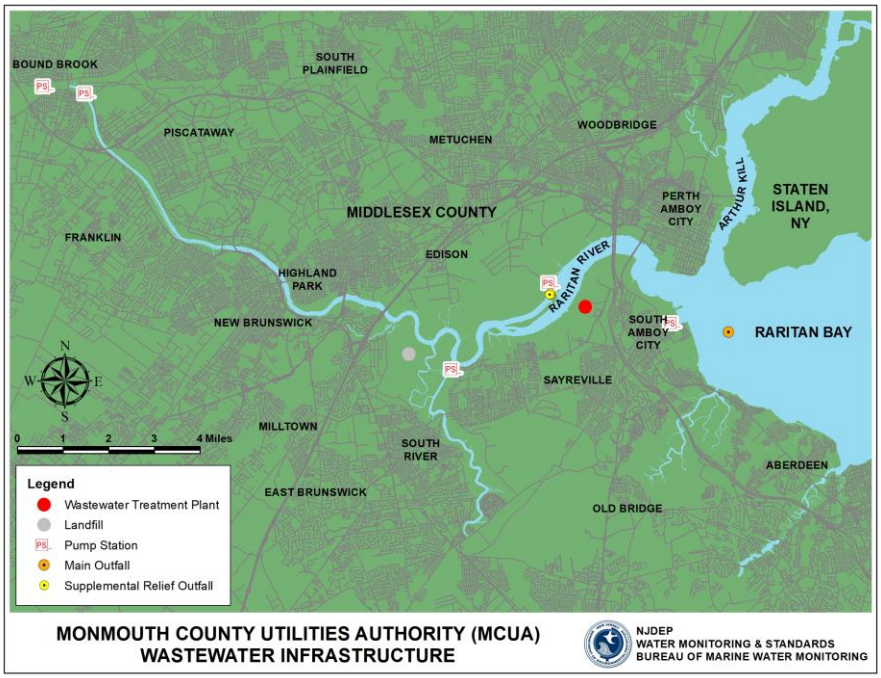
As more forest, wetland, and agriculture are being redeveloped to urban areas, it puts stress on the surrounding ecosystem. The process of urbanization impacts the ecosystems through the conversion of natural land covers to impervious surfaces. The displacement of cropland, grassland, and forested areas by paved surfaces and buildings greatly intensifies stormwater runoff, diminishes groundwater recharge, and promotes urban heat formation. These factors were identified by the Environmental Protection Agency as being the most significant threat to water resources. The toxic and pathogenic pollutants transported from impervious surfaces to watersheds in the form of non-point source pollution have been shown to substantially degrade streams, rivers, and lakes (EPA).

Surface Water Discharges

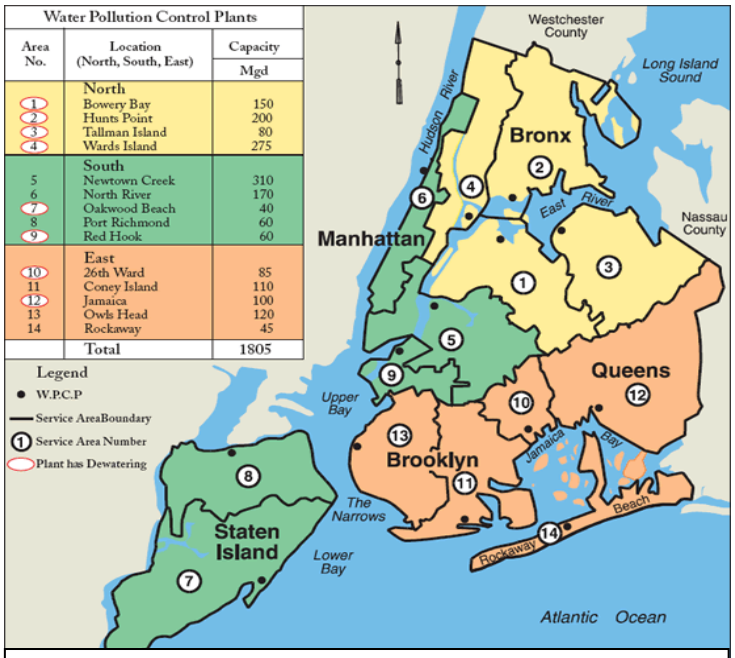
A surface water discharge involves the release of treated effluent from various municipal and industrial facilities directly into a river, stream, or the ocean. The discharge of pollutants from a point source is authorized under New Jersey Pollutant Elimination System (NJPDES), and the regulations are found at N.J.A.C. 7:14A. The main purpose of the NJPDES program is to ensure proper treatment and discharges of wastewater. By doing so, the permit limits the amount or concentration of pollutants that can be discharged into ground water, streams, rivers, and the ocean.



Major focuses are on the wastewater treatment facilities that are permitted to discharge directly into shellfish waters because they have the greatest potential to impair water quality. The Middlesex County Utilities Authority (MCUA) is the only facility in this shellfish growing area that has a permit to discharge treated wastewater effluent into the bay. MCUA has an outfall that discharges up to 130 MGD (million gallons per day) into a *Prohibited* area of Raritan Bay. Flows exceeding 130 MGD discharge the difference further upriver into the North Channel of the Raritan River via a Supplementary Relief Outfall. This area also is classified as *Prohibited*. The other wastewater treatment facilities along this growing area are connected to the Monmouth County Bayshore Outfall Authority (MCBOA). The MCBOA operates a 14-mile pipeline from Union Beach to Sandy Hook. The pipeline is used to transport treated wastewater effluent from three local wastewater facilities (Bayshore Regional Sewerage Authority, Middletown Sewage Authority, and Atlantic Highlands Wastewater Treatment Plant) and discharging it into the Atlantic Ocean, approximately one mile east of Highlands Beach.



The water quality of this shellfish growing area is influenced not just by the contaminants generated in New Jersey, but can also be impaired by the discharges that occur in New York City. According to the Interstate Environmental Commission (IEC) 2011 annual report, there were 105 reported bypasses in New York City between January 1st and November 30th of 2011 – which was the lowest number of bypasses the IEC had had seen in years (IEC, 2011, p.29). However, not all of their recorded bypasses are of raw sewage; they also include any type of substance or sludge spill, and reduction of treatment (IEC, 2011, p.29). The common causes of a bypass event are power outage, blockage, equipment failure, broken pipes, system overflows, and wet weather. Much of the bypasses are wet weather related. When there is rain, the flows to wastewater treatment plants increase. If the flow is greater than the plant's design flow, part of the flow bypasses all or certain treatment steps, resulting in the discharges of raw or partially treated sewage (IEC).



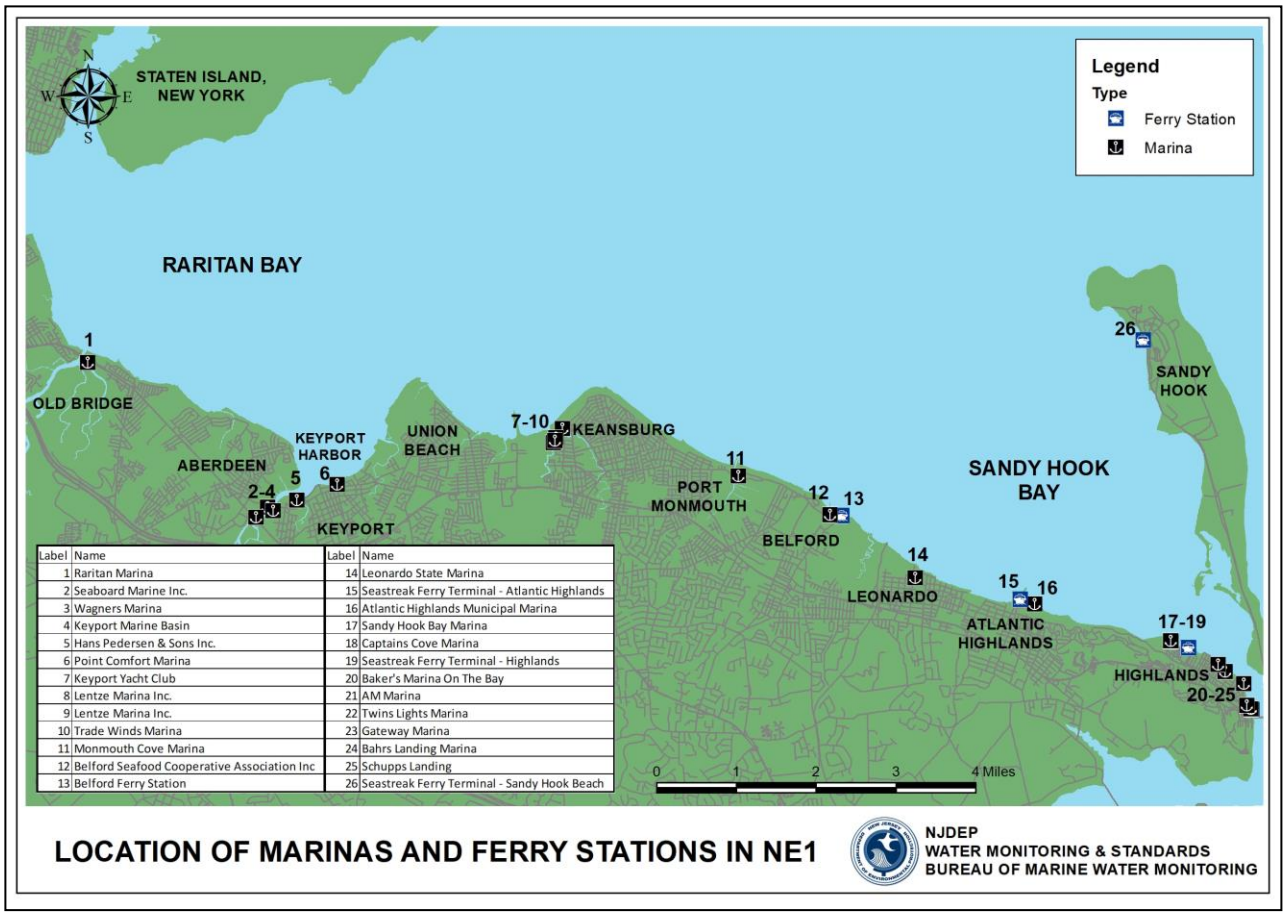
New York City Plants Location and Capacities (Source: NYDEC)

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. Research has shown that by-products from the biological breakdown of petroleum products can harm fish and wildlife, and pose threats to human health if ingested. (NOAA). For this reason, waters within the marina basin are restricted to shellfish harvesting.


Sail Boats in Keyport Harbor (Picture By: Julie Nguyen)

The waters enclosed by the marina, (the marina basin) 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.



Spills, Unpermitted Discharges, and Closures

Indirect discharges are groundwater discharge, malfunctioning septic systems, known contaminated sites, spills, dredging projects, and impacts from wildlife areas. Under normal circumstances, these indirect discharges do not routinely affect water quality. However, on occasion they do result in the closure of shellfish waters due to accidental discharge that results in higher than normal bacteria counts. During this reporting period, there were many reports of unpermitted discharges including sewage spills, sunken boats, oil and gas spills, and chemical spills. Most of the spills were terminated within a few hours and the discharges were usually into nearby creeks, lagoons, or near the shore. By the time the pollutants reaches shellfish waters, the bacteria levels had diminished. During this report period, there were 2 shellfish bed closures. Shellfish beds were closed to harvest on 10/26/2012 in anticipation of Hurricane Sandy, and closed again on 10/2/2015 in anticipation of a Nor'easter storm.

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, chlorides, petroleum, and nutrients (NJStormwater.Org).

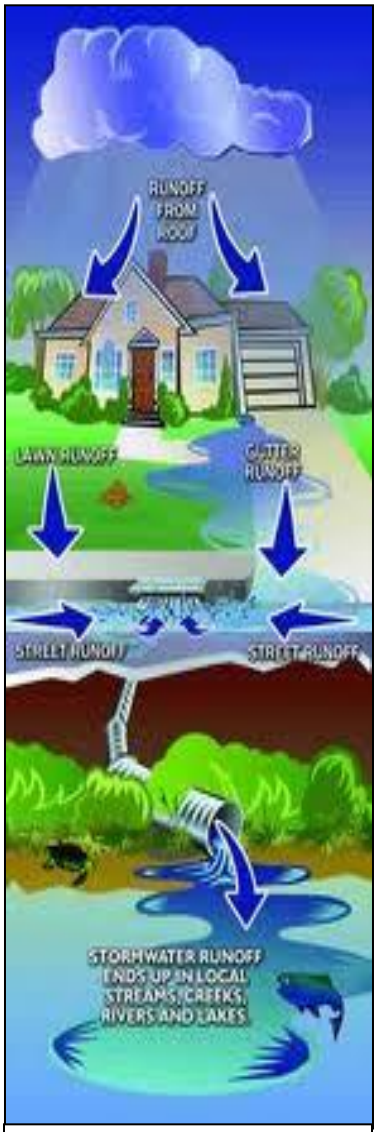
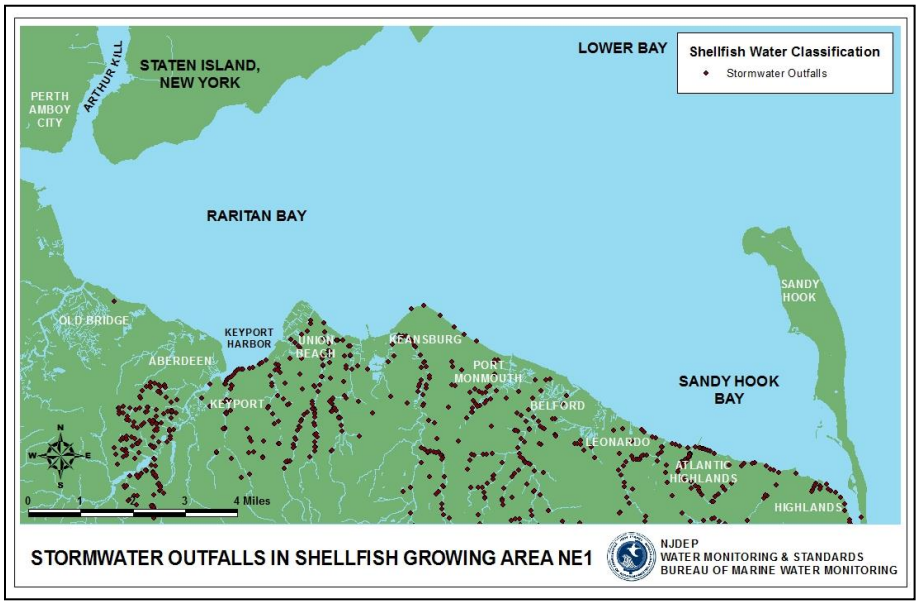


Illustration By: NJStormwater.Org



Stormwater outfalls in this area usually discharges to nearby creeks, but there are some that discharges directly to shellfish waters. The highest emphases are placed on the stormwater outfalls that discharge directly to shellfish waters. The figure above shows the location of stormwater outfalls in this shellfish growing area.

Water Quality Studies

Sampling Strategy

The State Shellfish Control Authority has the option of choosing one of two water monitoring sampling strategies for each growing area. For additional information on the types of sampling strategies, see the *Shellfish Growing Area Report Guidance Document, 2011.* This shellfish growing area uses the Adverse Pollution Condition Sampling Strategy (APC) because of the treated wastewater effluent discharges to the Raritan Bay.

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. Combinations of these criteria may also be used. New Jersey uses the fecal coliform analysis.

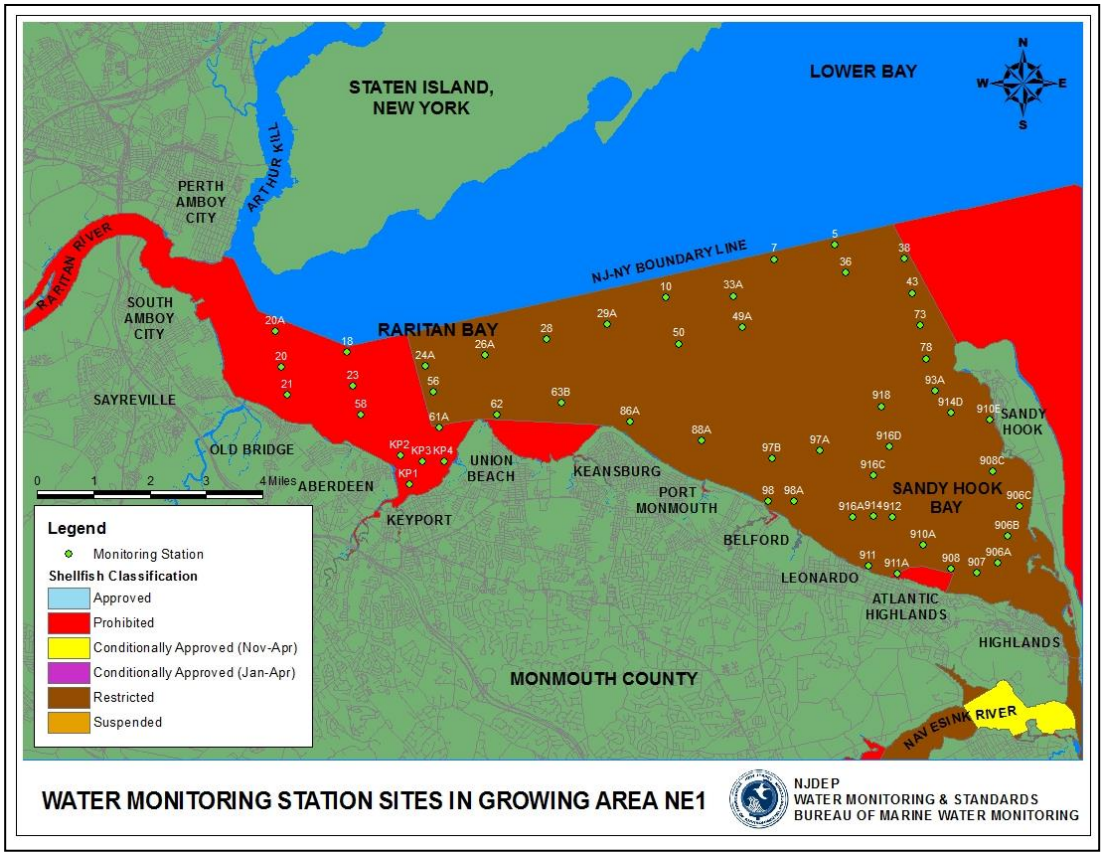
Each classification criterion is composed of a measure of the statistical 'central tendency' (geometric mean) and the relative variability of the data set. For the Adverse Pollution Condition sampling strategy, variability is expressed as the percentage that exceeds the variability criteria. An area to be approved under the *Conditionally Approved* classification must be sampled and meet the criterion during the time of year that it is approved for the harvest of shellfish. The table below shows the statistical criteria for the APC sampling strategy.

Statistical Criteria for Adverse Pollution Condition Sampling Strategy (APC)

Classification	Total Coliform Criteria		Fecal Coliform Criteria	
	Geometric Mean (MPN/100 mL)	**No More Than 10% Of The Samples Can Exceed** (MPN/100 mL)	**Geometric Mean** (CFU/100 mL)	**No More Than 10% Of The Samples Can Exceed** (CFU/100 mL)
Approved	70	330	14	31
Restricted	700	3300	88	163

Water sampling was performed in accordance with the Field Procedures Manual (NJDEP, 2005). From 2012 through 2016, approximately 2,332 water samples were collected for fecal coliform bacteria from 53 monitoring stations. The locations of these stations are shown in the map below. These samples were analyzed by the fecal mTEC test (APHA, 1970 & 1995). Water quality sampling, shoreline and watershed surveys were conducted in accordance with the NSSP *Guide for the Control of Molluscan Shellfish, Revision 2015*. Data management and

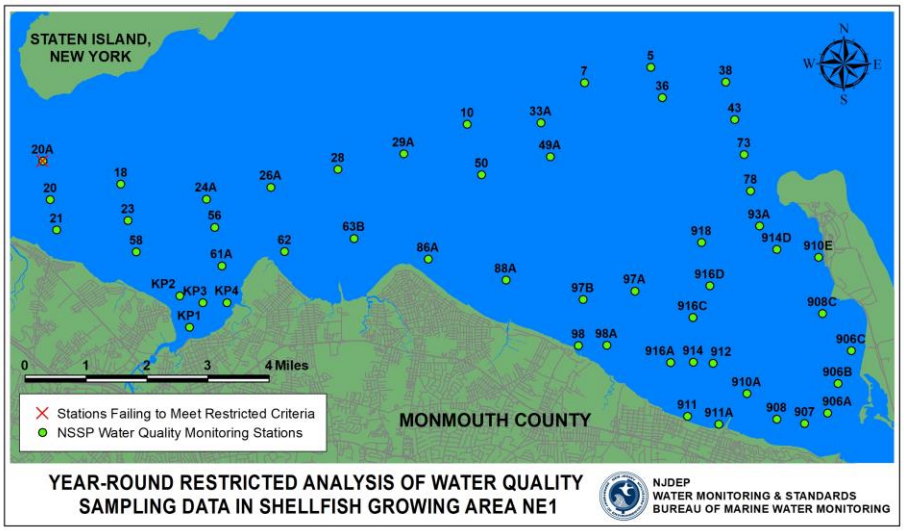
analysis was accomplished using database applications developed for the Bureau. Mapping of pollution data was performed with the Geographic Information System (GIS: ArcMap).



BACTERIOLOGICAL QUALITY

Compliance with NSSP APC Criteria

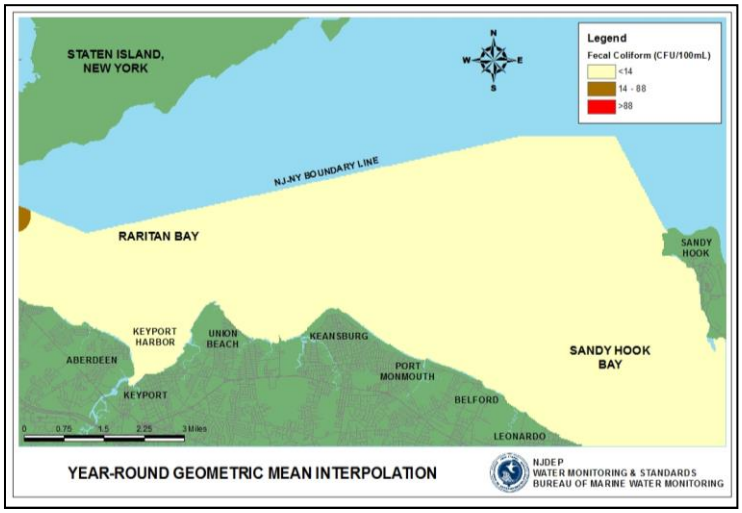
Since there are no *Approved* waters in this growing area, fecal coliform results were compared against NSSP *Restricted* criteria. Based on the dataset analyzed in this report, all stations in *Restricted* waters were in compliance with NSSP *Restricted* criteria. All stations met both the geometric mean and the ten percent exceeding criteria cutoff. Therefore,

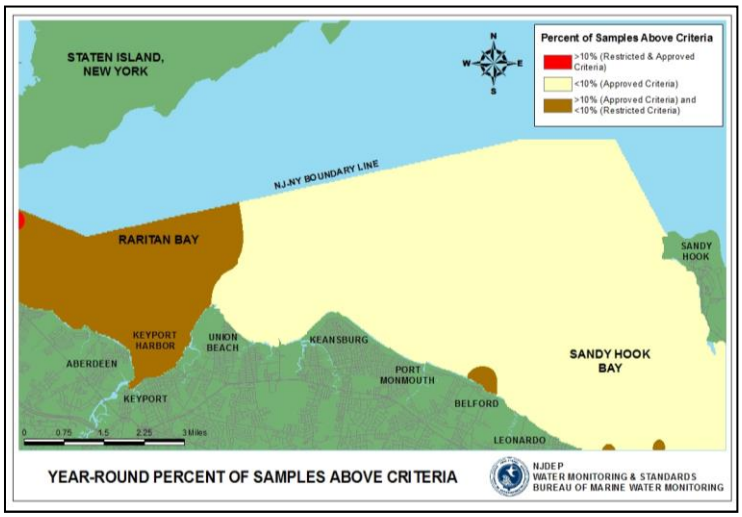


all monitoring stations in this shellfish growing area met their respective shellfish classifications.

Although there are no *Approved* waters, WM&S/BMWM does evaluate this data against NSSP Approved criteria to determine if an upgrade is possible. When assessing these data against the *Approved* criteria, thirty-one percent of the monitoring stations exceeded the criteria. As shown in the figures, the shellfish waters of Raritan Bay, Keyport Harbor, and small areas of Sandy Hook Bay currently do not meet the ten percentile cutoff criteria, but would have been in compliance if it was only based on geometric means. In general, the water quality in Sandy Hook Bay to some extent is better than the water quality in the Raritan Bay and Keyport Harbor. Therefore, Sandy Hook Bay has the greatest potential to be upgraded if the water quality trend improves.

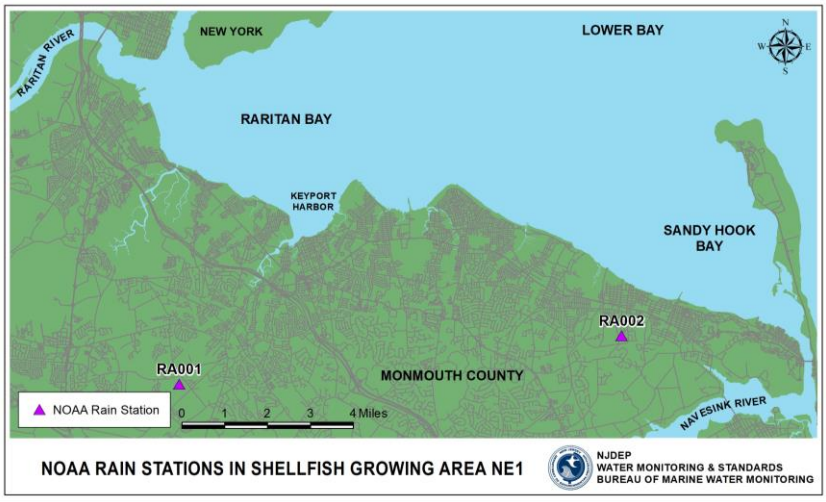
For *Restricted* waters to be upgraded to *Conditionally Approved (Nov.-Apr.)* (or *Jan.-Apr.)*, the water quality would have to meet the bacteriological standards for the timeframe the waters would be open to shellfishing.



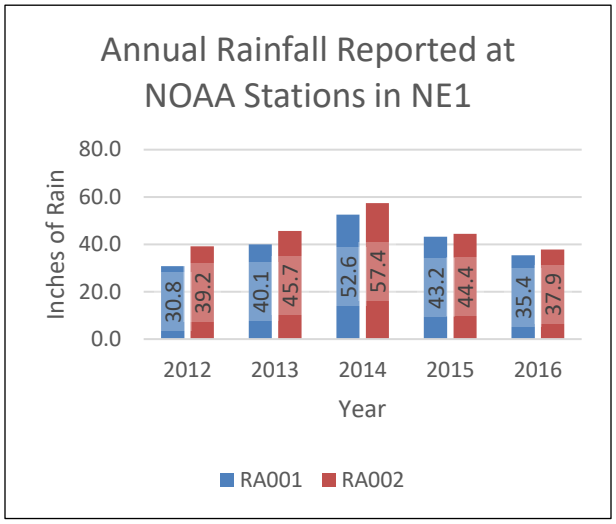


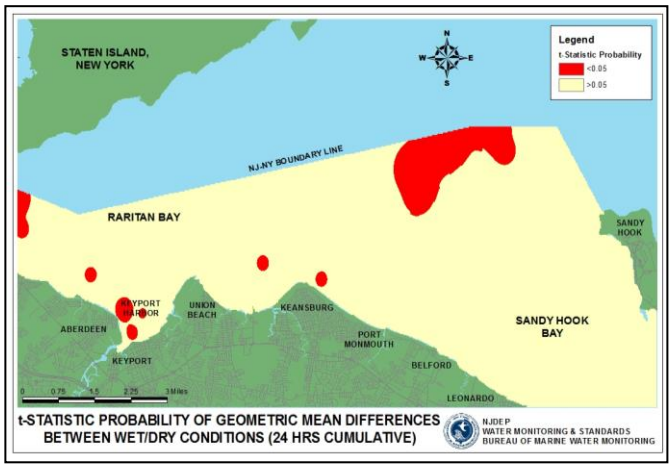
Rainfall Effect

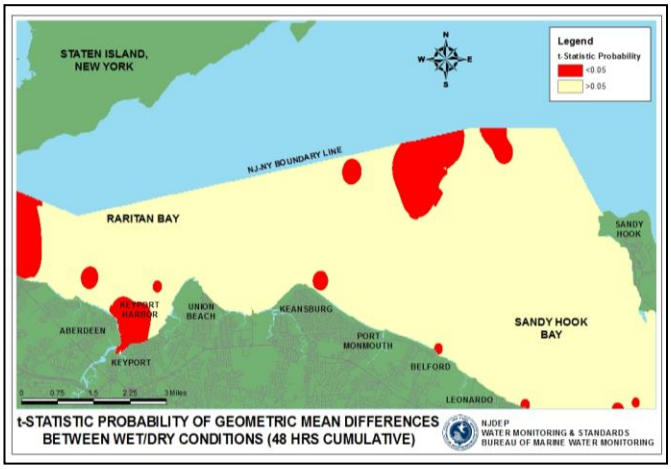
Precipitation inputs to this area were provided by Middle Atlantic River Forecast Center (MARFC), an office in the National Weather Service (NWS). The MARFC provides 24 hour estimated precipitation based on a Multi-Sensor Precipitation Estimation (MPE) calculation using data collected from NWS' NEXRAD radar, together with rain gage observations and recordings. Precipitation assessment for this shellfish growing area was based on rainfall data collected at Station RA001 and RA002. The annual precipitations reported at Station RA001 and RA002 between 2012 through 2016 are shown in the chart below.

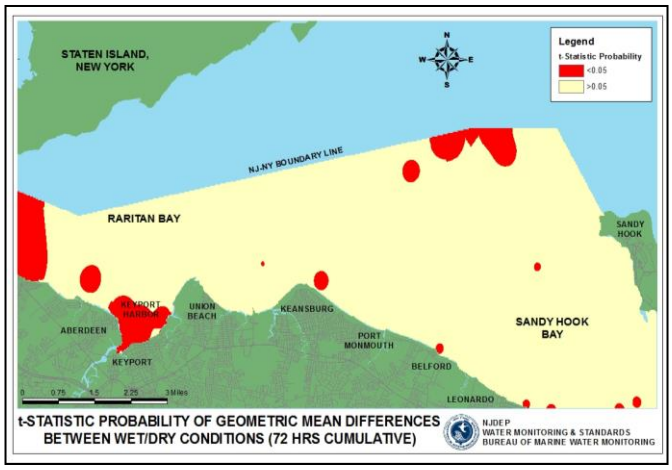


To determine whether rain can influence water quality, WM&S/BMWM uses the t-









test method to assess rainfall effects. This method compares the fecal coliform CFU values from samples collected during dry weather to samples collected during wet weather and identify areas where runoffs can potentially affect water quality. The Wet/Dry Cutoff determines whether a sample was collected under wet or dry condition. For this growing area, the Wet/Dry Cutoff criterion was set at 0.3 inches. 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.

The 24 hours rainfall t-test had twenty-six percent of the monitoring stations impacted by rainfall. The 48 hours rainfall t-test shows thirty-six percent of the monitoring stations impacted. The 72 hours rainfall t-test shows thirty-eight percent of the monitoring stations impacted. Stations impacted by rainfall can be found in Raritan Bay, Keyport Harbor, and Sandy Hook Bay, as well as close and far from land.

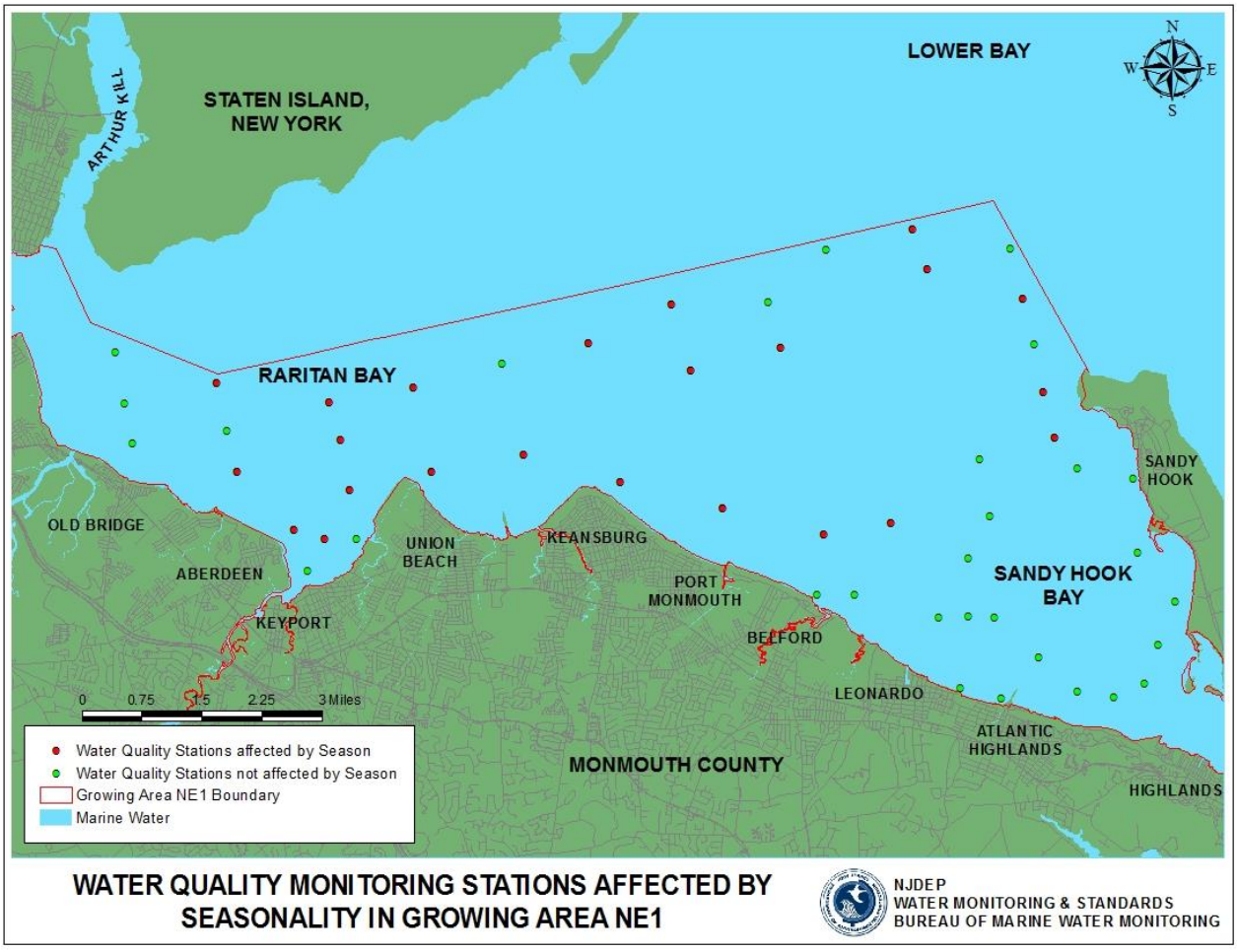
Stations that are impacted by rain tend to have a higher geometric mean during wet condition. In some areas, there are substantial differences in the wet and dry geometric means. The figures show the geometric mean differences at 24, 48, and 72 hours cumulative. Areas highlighted in red are areas that have significant differences in geometric mean, indicating sensitivity to rain.

Based on these three t-tests, it was determined that rain would immediately impact Raritan Bay and Keyport Harbor with influences coming from the Raritan River and runoff from nearby stormwater outfalls. North Sandy Hook Bay near the NJ-NY boundary would be immediately impacted, with influences likely coming

from New York waters. Sandy Hook Bay was also impacted by rain, but had a delayed effect. It is believed that influences to Sandy Hook Bay and Keyport Harbor are from local contaminants, while Raritan Bay is highly influenced by runoffs coming out of Raritan River, Arthur Kill, and Lower Bay.

Seasonal Effects

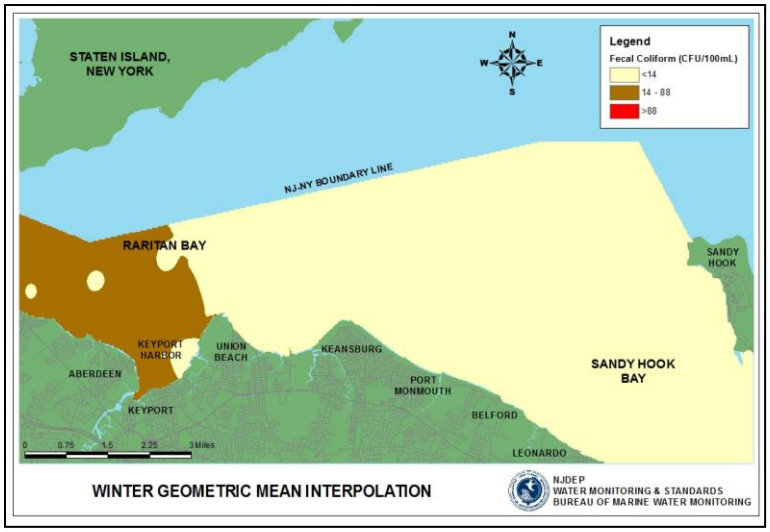
Seasonal variation may affect water quality due to the change in weather patterns that result in specific agricultural land-use practices, biological activity, stream flow and/or sediment. WM&S/BMWM uses a t-test method to determine which areas may be influenced by seasonal variation by comparing the summer and winter fecal coliform values. Any stations with a t-statistical probability of less than 0.05 are believed to be impacted. About forty-three percent of the monitoring stations in this area were impacted by seasonal variation. These impacted stations had higher bacteria level during the winter. The impacted stations were mostly in Raritan Bay, as well as a number of stations in the north part of Sandy Hook Bay.

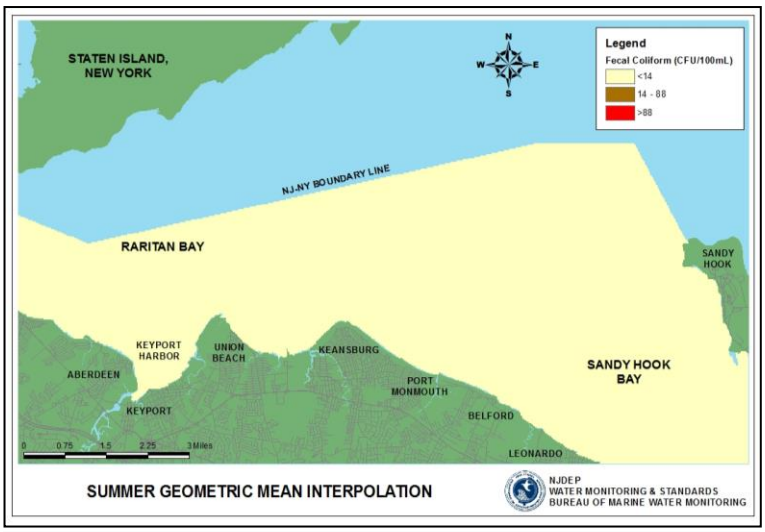


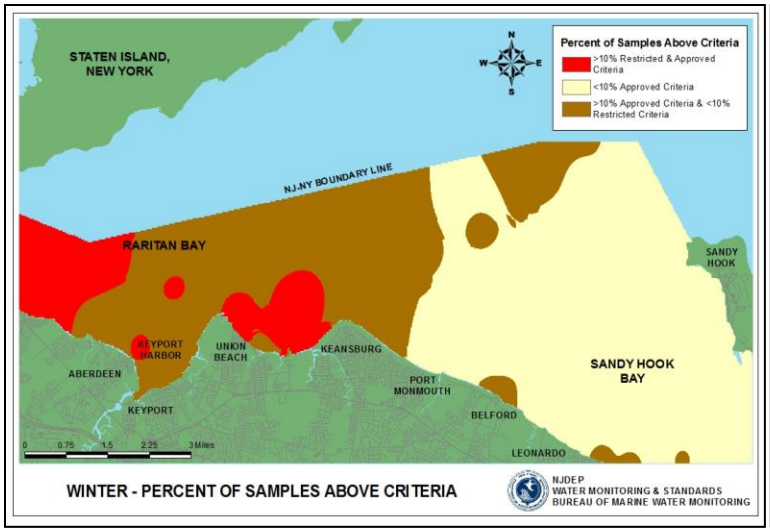
The figures below are summer and winter geometric mean and percent above criteria interpolation maps. The winter geometric means tend to be higher than summer geometric means, especially in the western portion of Raritan Bay and Keyport Harbor. There are more stations in the winter where the percent of samples that exceed criteria – with nearly all of the Raritan Bay exceeding the *Approved* criteria. Some of the areas between

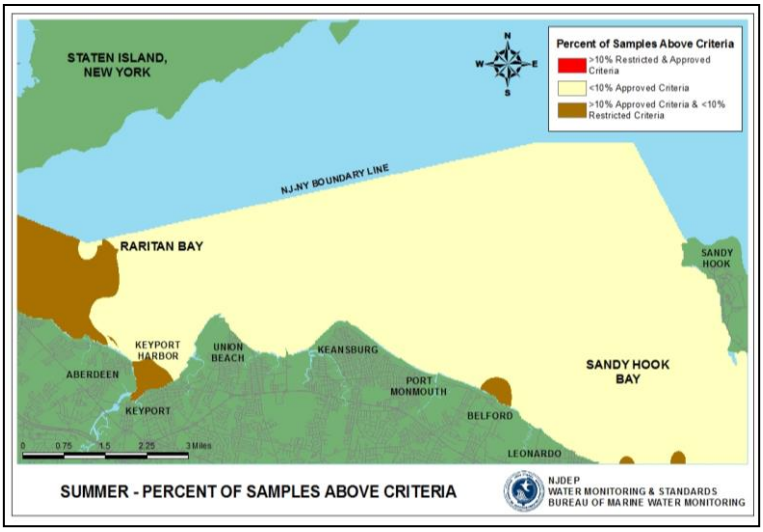
Union Beach and Keansburg, and the western Raritan Bay exceeded *Restricted* criteria. Seasonality affects much of Growing Area NE1, with the time of year being responsible for differences in bacteriology in a large part of central and eastern Raritan Bay, and in northern Sandy Hook Bay.

For the SRS analysis to encompass at least 30 samples, the sampling date range start was extended back to January 1st, 2010 (the year-round analysis in this report uses January 1st, 2012 as a start date). The SRS year-round *Approved* analysis of the data between 1/1/2010 and 12/31/2016 yielded 19 failing stations, while the same analysis of the data between 1/1/2012 and 12/31/2016 yields 17 failing stations.









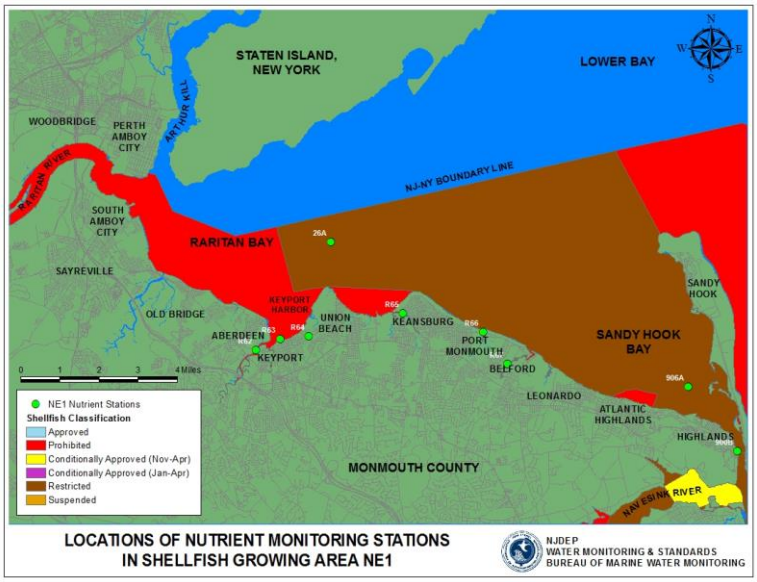
RELATED STUDIES

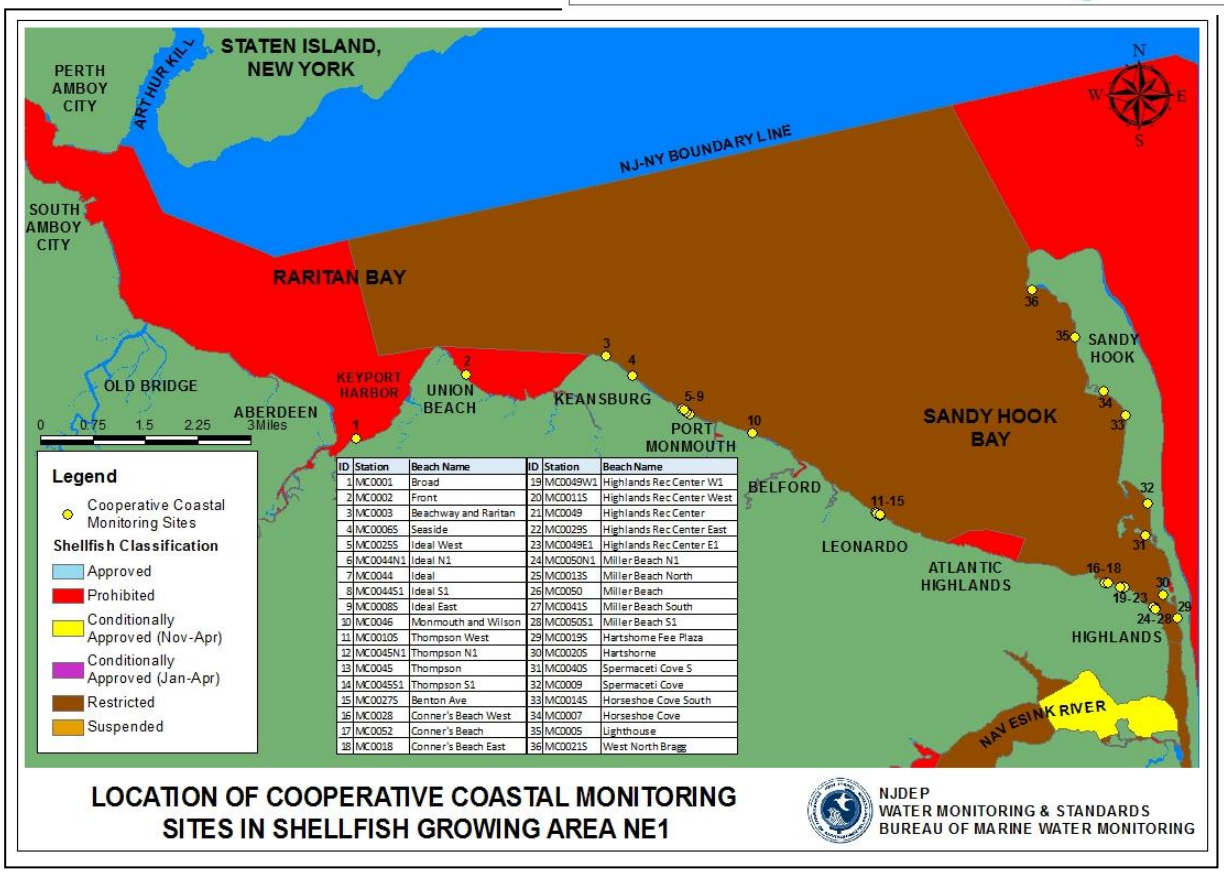
Nutrients

WM&S/BMWM perform 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 on a quarterly basis. There are approximately 154 nutrient sampling stations within the inner coastal waters of New Jersey, which are spread throughout

the States back-bay waters and Delaware Bay. At these nutrient monitoring sites, various parameters were measured including water temperature, salinity levels, secchi depth (when applicable), total suspended solids, dissolved oxygen levels, pH, ammonia levels, nitrate and nitrite levels, orthophosphate levels, total nitrogen levels, total phosphorus levels, biogenic silica levels, NPOC, and chlorophyll levels.

Within this shellfish growing area there are nine nutrient monitoring sites. Between 2012 and 2016, 580 water samples were analyzed for various nutrient parameters. The map displays the location of the nutrient monitoring sites within this shellfish growing area. 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 electronically at: http://www.state.nj.us/dep/bmw/ .



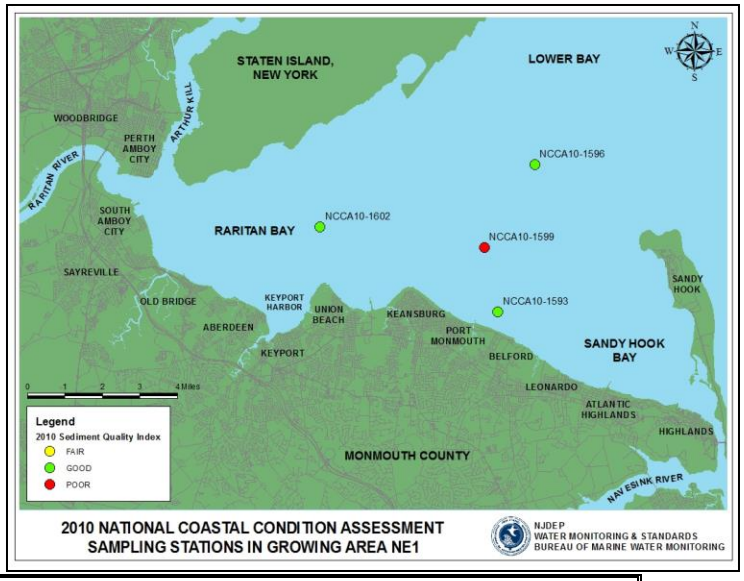


Cooperative Coastal Monitoring Program

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. Samples are taken once a week, usually on Monday, for the entire summer. There are approximately 218 (ocean and bay) sampling stations throughout the state. 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 exceeded 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. For more information regarding this program, bathing beach data, and closures, see https://www.njbeaches.org/.

National Coastal Condition Assessment

USEPA National Coastal Condition Assessment (NCCA) (formerly the National Coastal Assessment) and its partners began sampling in the coastal and estuarine water of the United States in 1990. Data collected includes water column parameters, sediment chemistry & toxicity, benthic communities, and tissue contaminants. Since there were no FDA criteria for assessing sediment contaminants, sediment quality can be assessed using the NCCA Sediment Quality Index. There are 2 components which make up the Sediment Quality Index: Sediment Contaminants and Sediment Toxicity. The Sediment Contaminants indicator is ranked based upon the mean Effects Range Median Quotient (ERM-Q) and Logistic Regression Model Maximum Probability (LRM P_{max}). The criteria for assessing sediment contaminants by site are shown in the table below.



Criteria for Assessing Sediment Quality Index by Site
(Source: USEPA, National Coastal Condition Assessment, 2010, Table 2-9, Page 24)

Rating	Criteria
Good	Both indicators (Sediment Contaminants and Sediment Toxicity) are rated good
Fair	One or both indicators (Sediment Contaminants and Sediment Toxicity) is rated fair, and none are rated poor.
Poor	At least one indicator (Sediment Contaminants or Sediment Toxicity) is rated poor.

There were several NCCA monitoring stations located in this shellfish growing area. The most recent sediment data available for public viewing are from 2010. The figure displays the Sediment Quality Index for the area where samples were taken. For additional NCCA data or program information, visit https://www.epa.gov/national-aquatic-resource-surveys/ncca.

Mussel Watch Contaminants Monitoring Program

NOAA Mussel Watch Contaminants Monitoring Program began collecting sediment and tissue samples since 1986 for biological contaminant trends in sediments and bivalve tissues. The most recent data collected in this area is from 2009. For additional National Centers for Coastal Ocean Science (NCCOS) data or program information, visit https://coastalscience.noaa.gov/.

CONCLUSIONS

The following conclusions are based on fecal coliform data collected between January 2012 and December 2016. Since there are no *Approved* or *Conditionally Approved (Nov.-Apr.)* waters within this shellfish growing area, all data was compared to NSSP Restricted criteria. Based on the statistical analysis, all monitoring stations were found to be in compliance with the NSSP criteria; therefore, meeting their respective shellfish classifications.

Several areas were influenced by seasonal variation, especially in Raritan Bay. Overall, winter geometric means tend to be higher than the summer geometric means. The rainfall assessment determined that rain would immediately impact Raritan Bay, Keyport Harbor, and north Sandy Hook Bay near the NJ-NY boundary, possibly due to influences coming from the Raritan River, Arthur Kill, Matawan Creek, and New York City. Sandy Hook Bay was also impacted by rain along the southern shore and near the mouth of the Shrewsbury River, but had a delayed effect. It is believed that influences to Sandy Hook Bay and Keyport Harbor are from local contaminants, while Raritan Bay is highly influenced by runoff coming out of Raritan River, Arthur Kill, and Lower Bay.

Overall, the water quality in this shellfish growing area has not been consistent with previous years. In the previous report, summer geometric means were generally higher than winter geometric means, which was believed to be due to summer activities and wildlife influences. During this report period, the winter geometric means were generally higher than the summer geometric means. Sandy Hook Bay to some extent has better water quality than the water quality in the Raritan Bay and Keyport Harbor. After reviewing all the data, it's clear that Sandy Hook Bay has the greatest potential to be upgraded if the winter water quality improves.

RECOMMENDATION

No downgrade of waters are recommended because all stations are in compliance with NSSP. Although the data shows water quality improvement in Raritan Bay and Keyport Harbor, the data does not support upgrading the shellfish classification in these areas. WM&S/BMWM will continue to monitor the whole growing area under the same sampling protocol. When there is sufficient data to support an upgrade, WM&S/BMWM will upgrade waters accordingly.

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Middlesex County Utilities Authority

Monmouth County Bayshore Outfall Authority

New York-New Jersey Harbor Estuary Program, http://www.harborestuary.org/

NJDEP, Bureau of Geographic Information, http://www.nj.gov/dep/gis/

NJDEP, Bureau of Marine Water Monitoring, http://www.nj.state.nj.us/dep/bmw

NJDEP, Clean Marina Program, http://www.njcleanmarina.org/

NJDEP, Data Miner, http://datamine2.state.nj.us/dep/DEP_OPRA/

NJDEP, Division of Fish and Wildlife, http://www.nj.gov/dep/fgw

NJDEP, Stormwater, http://www.NJStormwater.org

NY/NJ Baykeeper, http://www.nynjbaykeeper.org/

U.S. Army Corps of Engineers-New York Distinct, http://www.nan.usace.army.mil/

U.S. Census Bureau, www.census.gov/

U.S. Geological Survey, www.usgs.gov/

Supporting Documentation

Data Sheets
See Insert

Shoreline Survey Field Notes & Pictures
See Insert

Marinas in Growing Area
See Insert

MCUA Wastewater Treatment Facility Notes
See Insert

Fecal Coliform Statistical Summary: APC (Approved)

From: 1/1/2012 **To:** 12/31/2016

Report Area: NE1

Note: NSSP requires a sample set (N) of 15 or more.

				Year-Round				Summer				Winter			
Station	Depth	Status	Criteria	Geometric Mean	% > Criteria	Exceed Criteria	N	Geometric Mean	% > Criteria	Exceed Criteria	N	Geometric Mean	% > Criteria	Exceed Criteria	N
10	S	R	31	4.0	2.3%	☐	44	3.4	0.0%	☐	33	6.5	9.1%	☐	11
18	S	P	31	6.8	15.9%	☑	44	5.2	9.1%	☐	33	14.9	36.4%	☐	11
20	S	P	31	10.7	31.8%	☑	44	9.5	27.3%	☑	33	15.4	45.5%	☐	11
20A	S	P	31	15.8	36.4%	☑	44	12.7	30.3%	☑	33	29.9	54.5%	☐	11
21	S	P	31	8.6	25.0%	☑	44	8.3	21.2%	☑	33	9.3	36.4%	☐	11
23	S	P	31	6.9	18.2%	☑	44	6.0	12.1%	☑	33	10.6	36.4%	☐	11
24A	S	R	31	5.6	11.4%	☑	44	4.1	3.0%	☐	33	14.1	36.4%	☐	11
26A	S	R	31	4.9	11.4%	☑	44	3.8	3.0%	☐	33	10.3	36.4%	☐	11
28	S	R	31	4.9	9.1%	☐	44	4.3	3.0%	☐	33	7.2	27.3%	☐	11
29A	S	R	31	3.8	2.3%	☐	44	3.2	0.0%	☐	33	6.3	9.1%	☐	11
33A	S	R	31	4.0	0.0%	☐	44	3.7	0.0%	☐	33	5.5	0.0%	☐	11
36	S	R	31	4.5	9.1%	☐	44	3.9	9.1%	☐	33	7.0	9.1%	☐	11
38	S	R	31	4.0	4.5%	☐	44	3.7	3.0%	☐	33	5.2	9.1%	☐	11
43	S	R	31	3.9	2.3%	☐	44	3.5	3.0%	☐	33	5.8	0.0%	☐	11
49A	S	R	31	4.1	2.3%	☐	44	3.4	0.0%	☐	33	7.3	9.1%	☐	11
5	S	R	31	5.4	6.8%	☐	44	4.5	0.0%	☐	33	9.0	27.3%	☐	11
50	S	R	31	3.7	4.5%	☐	44	3.3	3.0%	☐	33	5.7	9.1%	☐	11
56	S	R	31	5.4	15.9%	☑	44	4.2	9.1%	☐	33	11.0	36.4%	☐	11
58	S	P	31	7.0	18.2%	☑	44	5.3	9.1%	☐	33	15.7	45.5%	☐	11
61A	S	P	31	5.7	13.6%	☑	44	4.4	6.1%	☐	33	12.3	36.4%	☐	11
62	S	R	31	5.0	6.8%	☐	44	4.2	0.0%	☐	33	8.7	27.3%	☐	11
63B	S	R	31	4.4	6.8%	☐	44	3.5	0.0%	☐	33	8.9	27.3%	☐	11
7	S	R	31	4.9	6.8%	☐	44	4.2	6.1%	☐	33	7.4	9.1%	☐	11
73	S	R	31	3.6	0.0%	☐	44	3.3	0.0%	☐	33	4.3	0.0%	☐	11
78	S	R	31	3.4	0.0%	☐	44	3.1	0.0%	☐	33	4.2	0.0%	☐	11
86A	S	R	31	4.6	4.5%	☐	44	3.8	0.0%	☐	33	8.6	18.2%	☐	11
88A	S	R	31	3.4	0.0%	☐	44	3.1	0.0%	☐	33	4.6	0.0%	☐	11
906A	S	R	31	4.1	2.3%	☐	44	4.2	3.0%	☐	33	4.0	0.0%	☐	11
906B	S	R	31	3.6	0.0%	☐	44	3.6	0.0%	☐	33	3.6	0.0%	☐	11
906C	S	R	31	3.4	0.0%	☐	44	3.5	0.0%	☐	33	3.2	0.0%	☐	11
907	S	R	31	4.5	2.3%	☐	44	4.3	3.0%	☐	33	4.9	0.0%	☐	11
908	S	R	31	6.7	11.4%	☑	44	6.3	12.1%	☑	33	8.4	9.1%	☐	11
908C	S	R	31	3.4	0.0%	☐	44	3.3	0.0%	☐	33	3.9	0.0%	☐	11
910A	S	R	31	3.7	2.3%	☐	44	3.4	3.0%	☐	33	4.9	0.0%	☐	11
910E	S	R	31	3.4	2.3%	☐	44	3.4	3.0%	☐	33	3.3	0.0%	☐	11
911	S	R	31	6.3	9.1%	☐	44	6.0	6.1%	☐	33	7.3	18.2%	☐	11
911A	S	P	31	7.9	11.4%	☑	44	8.9	12.1%	☑	33	5.6	9.1%	☐	11
912	S	R	31	3.5	0.0%	☐	44	3.3	0.0%	☐	33	4.1	0.0%	☐	11
914	S	R	31	3.8	0.0%	☐	44	3.6	0.0%	☐	33	4.3	0.0%	☐	11
914D	S	R	31	3.3	0.0%	☐	44	3.3	0.0%	☐	33	3.2	0.0%	☐	11
916A	S	R	31	3.5	0.0%	☐	44	3.4	0.0%	☐	33	3.9	0.0%	☐	11
916C	S	R	31	3.4	0.0%	☐	44	3.3	0.0%	☐	33	3.5	0.0%	☐	11
916D	S	R	31	3.3	0.0%	☐	44	3.2	0.0%	☐	33	3.8	0.0%	☐	11
918	S	R	31	3.7	2.3%	☐	44	3.4	0.0%	☐	33	4.7	9.1%	☐	11

				Year-Round				Summer				Winter			
Station	Depth	Status	Criteria	Geometric Mean	% > Criteria	Exceed Criteria	N	Geometric Mean	% > Criteria	Exceed Criteria	N	Geometric Mean	% > Criteria	Exceed Criteria	N
93A	S	R	31	3.4	0.0%	☐	44	3.1	0.0%	☐	33	4.9	0.0%	☐	11
97A	S	R	31	3.3	0.0%	☐	44	3.1	0.0%	☐	33	3.9	0.0%	☐	11
97B	S	R	31	3.3	0.0%	☐	44	3.1	0.0%	☐	33	3.9	0.0%	☐	11
98	S	R	31	6.9	18.2%	☑	44	7.0	18.2%	☑	33	6.7	18.2%	☐	11
98A	S	R	31	3.8	2.3%	☐	44	3.8	3.0%	☐	33	3.9	0.0%	☐	11
KP1	S	P	31	11.5	22.7%	☑	44	10.4	15.2%	☑	33	15.5	45.5%	☐	11
KP2	S	P	31	6.5	18.2%	☑	44	4.7	9.1%	☐	33	17.1	45.5%	☐	11
KP3	S	P	31	6.0	11.4%	☑	44	4.7	9.1%	☐	33	12.4	18.2%	☐	11
KP4	S	P	31	7.8	11.4%	☑	44	7.2	9.1%	☐	33	9.8	18.2%	☐	11

Fecal Coliform Statistical Summary: APC (Special Restricted)

From: 1/1/2012 **To:** 12/31/2016

Report Area: NE1

Note: NSSP requires a sample set (N) of 15 or more.

				Year-Round				Summer				Winter			
Station	Depth	Status	Criteria	Geometric Mean	% > Criteria	Exceed Criteria	N	Geometric Mean	% > Criteria	Exceed Criteria	N	Geometric Mean	% > Criteria	Exceed Criteria	N
10	S	R	163	4.0	0.0%	☐	44	3.4	0.0%	☐	33	6.5	0.0%	☐	11
18	S	P	163	6.8	2.3%	☐	44	5.2	0.0%	☐	33	14.9	9.1%	☐	11
20	S	P	163	10.7	2.3%	☐	44	9.5	0.0%	☐	33	15.4	9.1%	☐	11
20A	S	P	163	15.8	11.4%	☑	44	12.7	9.1%	☐	33	29.9	18.2%	☐	11
21	S	P	163	8.6	0.0%	☐	44	8.3	0.0%	☐	33	9.3	0.0%	☐	11
23	S	P	163	6.9	2.3%	☐	44	6.0	0.0%	☐	33	10.6	9.1%	☐	11
24A	S	R	163	5.6	2.3%	☐	44	4.1	0.0%	☐	33	14.1	9.1%	☐	11
26A	S	R	163	4.9	0.0%	☐	44	3.8	0.0%	☐	33	10.3	0.0%	☐	11
28	S	R	163	4.9	0.0%	☐	44	4.3	0.0%	☐	33	7.2	0.0%	☐	11
29A	S	R	163	3.8	0.0%	☐	44	3.2	0.0%	☐	33	6.3	0.0%	☐	11
33A	S	R	163	4.0	0.0%	☐	44	3.7	0.0%	☐	33	5.5	0.0%	☐	11
36	S	R	163	4.5	0.0%	☐	44	3.9	0.0%	☐	33	7.0	0.0%	☐	11
38	S	R	163	4.0	0.0%	☐	44	3.7	0.0%	☐	33	5.2	0.0%	☐	11
43	S	R	163	3.9	0.0%	☐	44	3.5	0.0%	☐	33	5.8	0.0%	☐	11
49A	S	R	163	4.1	0.0%	☐	44	3.4	0.0%	☐	33	7.3	0.0%	☐	11
5	S	R	163	5.4	0.0%	☐	44	4.5	0.0%	☐	33	9.0	0.0%	☐	11
50	S	R	163	3.7	0.0%	☐	44	3.3	0.0%	☐	33	5.7	0.0%	☐	11
56	S	R	163	5.4	0.0%	☐	44	4.2	0.0%	☐	33	11.0	0.0%	☐	11
58	S	P	163	7.0	0.0%	☐	44	5.3	0.0%	☐	33	15.7	0.0%	☐	11
61A	S	P	163	5.7	0.0%	☐	44	4.4	0.0%	☐	33	12.3	0.0%	☐	11
62	S	R	163	5.0	2.3%	☐	44	4.2	0.0%	☐	33	8.7	9.1%	☐	11
63B	S	R	163	4.4	2.3%	☐	44	3.5	0.0%	☐	33	8.9	9.1%	☐	11
7	S	R	163	4.9	0.0%	☐	44	4.2	0.0%	☐	33	7.4	0.0%	☐	11
73	S	R	163	3.6	0.0%	☐	44	3.3	0.0%	☐	33	4.3	0.0%	☐	11
78	S	R	163	3.4	0.0%	☐	44	3.1	0.0%	☐	33	4.2	0.0%	☐	11
86A	S	R	163	4.6	0.0%	☐	44	3.8	0.0%	☐	33	8.6	0.0%	☐	11
88A	S	R	163	3.4	0.0%	☐	44	3.1	0.0%	☐	33	4.6	0.0%	☐	11
906A	S	R	163	4.1	0.0%	☐	44	4.2	0.0%	☐	33	4.0	0.0%	☐	11
906B	S	R	163	3.6	0.0%	☐	44	3.6	0.0%	☐	33	3.6	0.0%	☐	11
906C	S	R	163	3.4	0.0%	☐	44	3.5	0.0%	☐	33	3.2	0.0%	☐	11
907	S	R	163	4.5	0.0%	☐	44	4.3	0.0%	☐	33	4.9	0.0%	☐	11
908	S	R	163	6.7	0.0%	☐	44	6.3	0.0%	☐	33	8.4	0.0%	☐	11
908C	S	R	163	3.4	0.0%	☐	44	3.3	0.0%	☐	33	3.9	0.0%	☐	11
910A	S	R	163	3.7	0.0%	☐	44	3.4	0.0%	☐	33	4.9	0.0%	☐	11
910E	S	R	163	3.4	0.0%	☐	44	3.4	0.0%	☐	33	3.3	0.0%	☐	11
911	S	R	163	6.3	4.5%	☐	44	6.0	3.0%	☐	33	7.3	9.1%	☐	11
911A	S	P	163	7.9	4.5%	☐	44	8.9	6.1%	☐	33	5.6	0.0%	☐	11
912	S	R	163	3.5	0.0%	☐	44	3.3	0.0%	☐	33	4.1	0.0%	☐	11
914	S	R	163	3.8	0.0%	☐	44	3.6	0.0%	☐	33	4.3	0.0%	☐	11
914D	S	R	163	3.3	0.0%	☐	44	3.3	0.0%	☐	33	3.2	0.0%	☐	11
916A	S	R	163	3.5	0.0%	☐	44	3.4	0.0%	☐	33	3.9	0.0%	☐	11
916C	S	R	163	3.4	0.0%	☐	44	3.3	0.0%	☐	33	3.5	0.0%	☐	11
916D	S	R	163	3.3	0.0%	☐	44	3.2	0.0%	☐	33	3.8	0.0%	☐	11
918	S	R	163	3.7	0.0%	☐	44	3.4	0.0%	☐	33	4.7	0.0%	☐	11

Station	Depth	Status	Criteria	Year-Round				Summer				Winter			
				Geometric Mean	% > Criteria	Exceed Criteria	N	Geometric Mean	% > Criteria	Exceed Criteria	N	Geometric Mean	% > Criteria	Exceed Criteria	N
93A	S	R	163	3.4	0.0%	☐	44	3.1	0.0%	☐	33	4.9	0.0%	☐	11
97A	S	R	163	3.3	0.0%	☐	44	3.1	0.0%	☐	33	3.9	0.0%	☐	11
97B	S	R	163	3.3	0.0%	☐	44	3.1	0.0%	☐	33	3.9	0.0%	☐	11
98	S	R	163	6.9	0.0%	☐	44	7.0	0.0%	☐	33	6.7	0.0%	☐	11
98A	S	R	163	3.8	0.0%	☐	44	3.8	0.0%	☐	33	3.9	0.0%	☐	11
KP1	S	P	163	11.5	4.5%	☐	44	10.4	3.0%	☐	33	15.5	9.1%	☐	11
KP2	S	P	163	6.5	4.5%	☐	44	4.7	3.0%	☐	33	17.1	9.1%	☐	11
KP3	S	P	163	6.0	2.3%	☐	44	4.7	0.0%	☐	33	12.4	9.1%	☐	11
KP4	S	P	163	7.8	0.0%	☐	44	7.2	0.0%	☐	33	9.8	0.0%	☐	11

Fecal Coliform Statistics Summary: Seasonal

From: 1/1/2012 **To:** 12/31/2016

Report Area: NE1

Station	Depth	Status	Strategy	t-Statistic Probability	Exceed Criteria (t-Stats < 0.05)	Summer Geometric Mean	Summer N	Winter Geometric Mean	Winter N	GeoMean Differences
10	S	R	apc	0.003	☑	3.4	33	6.5	11	-3.1
18	S	P	apc	0.017	☑	5.2	33	14.9	11	-9.6
20	S	P	apc	0.349	☐	9.5	33	15.4	11	-5.9
20A	S	P	apc	0.116	☐	12.7	33	29.9	11	-17.2
21	S	P	apc	0.812	☐	8.3	33	9.3	11	-1.0
23	S	P	apc	0.175	☐	6.0	33	10.6	11	-4.6
24A	S	R	apc	0.001	☑	4.1	33	14.1	11	-10.0
26A	S	R	apc	0.004	☑	3.8	33	10.3	11	-6.5
28	S	R	apc	0.113	☐	4.3	33	7.2	11	-2.9
29A	S	R	apc	0.002	☑	3.2	33	6.3	11	-3.1
33A	S	R	APC	0.061	☐	3.7	33	5.5	11	-1.8
36	S	R	APC	0.035	☑	3.9	33	7.0	11	-3.2
38	S	R	APC	0.181	☐	3.7	33	5.2	11	-1.5
43	S	R	APC	0.024	☑	3.5	33	5.8	11	-2.4
49A	S	R	APC	0.001	☑	3.4	33	7.3	11	-4.0
5	S	R	APC	0.035	☑	4.5	33	9.0	11	-4.5
50	S	R	apc	0.019	☑	3.3	33	5.7	11	-2.4
56	S	R	apc	0.016	☑	4.2	33	11.0	11	-6.8
58	S	P	apc	0.018	☑	5.3	33	15.7	11	-10.4
61A	S	P	apc	0.008	☑	4.4	33	12.3	11	-7.8
62	S	R	apc	0.035	☑	4.2	33	8.7	11	-4.5
63B	S	R	apc	0.004	☑	3.5	33	8.9	11	-5.4
7	S	R	APC	0.084	☐	4.2	33	7.4	11	-3.1
73	S	R	APC	0.158	☐	3.3	33	4.3	11	-1.0
78	S	R	APC	0.037	☑	3.1	33	4.2	11	-1.0
86A	S	R	apc	0.007	☑	3.8	33	8.6	11	-4.8
88A	S	R	apc	0.012	☑	3.1	33	4.6	11	-1.5
906A	S	R	APC	0.837	☐	4.2	33	4.0	11	0.2
906B	S	R	APC	0.992	☐	3.6	33	3.6	11	0.0
906C	S	R	APC	0.630	☐	3.5	33	3.2	11	0.2
907	S	R	APC	0.647	☐	4.3	33	4.9	11	-0.6
908	S	R	APC	0.448	☐	6.3	33	8.4	11	-2.2
908C	S	R	APC	0.299	☐	3.3	33	3.9	11	-0.6
910A	S	R	APC	0.104	☐	3.4	33	4.9	11	-1.5
910E	S	R	APC	0.922	☐	3.4	33	3.3	11	0.1
911	S	R	APC	0.625	☐	6.0	33	7.3	11	-1.4
911A	S	P	APC	0.279	☐	8.9	33	5.6	11	3.4
912	S	R	APC	0.189	☐	3.3	33	4.1	11	-0.8
914	S	R	APC	0.400	☐	3.6	33	4.3	11	-0.6
914D	S	R	APC	0.872	☐	3.3	33	3.2	11	0.1
916A	S	R	APC	0.378	☐	3.4	33	3.9	11	-0.5
916C	S	R	APC	0.707	☐	3.3	33	3.5	11	-0.2
916D	S	R	APC	0.165	☐	3.2	33	3.8	11	-0.6
918	S	R	APC	0.173	☐	3.4	33	4.7	11	-1.2
93A	S	R	APC	0.005	☑	3.1	33	4.9	11	-1.8
97A	S	R	APC	0.030	☑	3.1	33	3.9	11	-0.8
97B	S	R	APC	0.035	☑	3.1	33	3.9	11	-0.8

Station	Depth	Status	Strategy	t-Statistic Probability	Exceed Criteria (t-Stats < 0.05)	Summer		Winter		GeoMean Differences
						Geometric Mean	N	Geometric Mean	N	
98	S	R	APC	0.911	☐	7.0	33	6.7	11	0.3
98A	S	R	APC	0.982	☐	3.8	33	3.9	11	0.0
KP1	S	P	apc	0.407	☐	10.4	33	15.5	11	-5.1
KP2	S	P	apc	0.003	☑	4.7	33	17.1	11	-12.3
KP3	S	P	apc	0.016	☑	4.7	33	12.4	11	-7.7
KP4	S	P	apc	0.423	☐	7.2	33	9.8	11	-2.6

Rainfall Summary

From: ***1/1/2012*** ***To:*** ***12/31/2016***

Report Area: ***NE1***

		Rainfall Amount		
Date	***NOAA***	***24Hrs***	***48Hrs***	***72Hrs***
4/13/2012	RA001	0.00	0.01	0.01
4/13/2012	RA002	0.00	0.00	0.00
6/19/2012	RA001	0.00	0.00	0.00
6/19/2012	RA002	0.00	0.00	0.00
9/4/2012	RA001	0.27	0.88	0.88
9/4/2012	RA002	0.14	0.60	0.60
9/11/2012	RA001	0.00	0.00	0.35
9/11/2012	RA002	0.00	0.00	1.25
9/20/2012	RA001	0.00	0.95	0.95
9/20/2012	RA002	0.00	1.23	1.23
4/11/2013	RA001	0.78	0.78	0.78
4/11/2013	RA002	0.72	0.72	0.72
5/2/2013	RA001	0.00	0.00	0.13
5/2/2013	RA002	0.00	0.00	0.24
5/24/2013	RA001	0.32	0.32	0.32
5/24/2013	RA002	0.89	0.91	0.91
6/17/2013	RA001	0.00	0.00	0.02
6/17/2013	RA002	0.00	0.00	0.02
8/21/2013	RA001	0.00	0.00	0.00
8/21/2013	RA002	0.00	0.00	0.00
8/29/2013	RA001	0.02	0.02	0.08
9/5/2013	RA002	0.00	0.00	0.07
9/23/2013	RA002	0.00	1.34	1.34
9/26/2013	RA001	0.00	0.00	0.00
10/17/2013	RA001	0.00	0.00	0.00
10/17/2013	RA002	0.00	0.00	0.00
12/2/2013	RA001	0.00	0.00	0.00
12/2/2013	RA002	0.00	0.00	0.00
12/26/2013	RA001	0.00	0.00	0.57
12/26/2013	RA002	0.00	0.00	0.73
3/31/2014	RA001	0.46	3.13	3.14
3/31/2014	RA002	0.46	2.64	2.66
5/30/2014	RA001	0.00	0.00	0.01
5/30/2014	RA002	0.00	0.00	0.00
7/2/2014	RA001	0.00	0.00	0.00
7/2/2014	RA002	0.00	0.00	0.00
7/11/2014	RA002	0.00	0.06	0.07
7/14/2014	RA001	0.27	0.27	0.27
7/22/2014	RA001	0.00	0.00	0.04
7/22/2014	RA002	0.00	0.00	0.05
7/30/2014	RA001	0.00	0.00	0.66
7/30/2014	RA002	0.00	0.00	0.76
8/27/2014	RA001	0.00	0.00	0.00
8/27/2014	RA002	0.00	0.00	0.00
9/15/2014	RA001	0.00	0.20	0.20

Date	NOAA	Rainfall Amount		
		24Hrs	48Hrs	72Hrs
9/15/2014	RA002	0.00	0.25	0.25
9/29/2014	RA001	0.00	0.00	0.00
9/29/2014	RA002	0.00	0.00	0.00
5/4/2015	RA001	0.00	0.00	0.00
5/4/2015	RA002	0.00	0.00	0.00
5/7/2015	RA001	0.05	0.05	0.05
5/7/2015	RA002	0.03	0.12	0.12
5/19/2015	RA001	0.01	0.02	0.49
5/19/2015	RA002	0.01	0.01	0.31
6/22/2015	RA001	0.01	0.29	0.47
6/22/2015	RA002	0.03	0.30	0.32
8/6/2015	RA001	0.00	0.03	0.04
8/6/2015	RA002	0.00	0.03	0.03
8/18/2015	RA001	0.07	0.07	0.07
8/18/2015	RA002	0.05	0.08	0.08
8/31/2015	RA001	0.00	0.00	0.00
8/31/2015	RA002	0.00	0.00	0.00
9/8/2015	RA001	0.00	0.00	0.00
9/8/2015	RA002	0.00	0.00	0.00
12/9/2015	RA001	0.00	0.00	0.00
12/9/2015	RA002	0.00	0.00	0.00
12/21/2015	RA001	0.00	0.00	0.06
12/21/2015	RA002	0.00	0.00	0.03
1/7/2016	RA001	0.00	0.00	0.00
1/7/2016	RA002	0.00	0.00	0.00
3/24/2016	RA001	0.00	0.00	0.00
3/24/2016	RA002	0.00	0.00	0.01
4/11/2016	RA001	0.00	0.27	0.27
4/11/2016	RA002	0.00	0.27	0.27
5/11/2016	RA001	0.02	0.02	0.12
5/11/2016	RA002	0.04	0.04	0.16
5/25/2016	RA001	0.02	0.07	0.10
5/25/2016	RA002	0.06	0.16	0.20
7/15/2016	RA001	0.00	0.27	0.27
7/15/2016	RA002	0.00	0.18	0.18
8/11/2016	RA001	0.04	0.04	0.04
8/11/2016	RA002	0.04	0.04	0.04
8/24/2016	RA001	0.00	0.00	0.19
8/24/2016	RA002	0.00	0.00	0.34
10/20/2016	RA001	0.00	0.00	0.00
10/20/2016	RA002	0.00	0.00	0.00
12/7/2016	RA001	0.51	0.60	0.77
12/7/2016	RA002	0.57	0.67	0.82

Rainfall Statistics Summary: 24Hrs Cumulative

From: 1/1/2012 **To:** 12/31/2016

Report Area: NE1 **Wet/Dry Cutoff:** 0.3

Station	Depth	Status	Strategy	NOAA	t-Statistic Probability	Exceed Criteria (t-Stats <0.05)	Dry Weather Geometric Mean	Dry Weather N	Wet Weather Geometric Mean	Wet Weather N	GeoMean Difference
10	S	R	apc	RA001	0.052	☐	3.8	40	7.4	4	-4
18	S	P	apc	RA001	0.050	☑	6.0	40	22.2	4	-16
20	S	P	apc	RA001	0.015	☑	9.0	40	57.0	4	-48
20A	S	P	apc	RA001	0.008	☑	13.0	40	107.0	4	-94
21	S	P	apc	RA001	0.323	☐	8.1	40	15.8	4	-8
23	S	P	apc	RA001	0.387	☐	6.6	40	11.4	4	-5
24A	S	R	apc	RA001	0.359	☐	5.3	40	9.2	4	-4
26A	S	R	apc	RA001	0.365	☐	4.7	40	7.7	4	-3
28	S	R	apc	RA001	0.768	☐	4.9	40	5.6	4	-1
29A	S	R	apc	RA001	0.932	☐	3.8	40	3.7	4	0
33A	S	R	APC	RA002	0.000	☑	3.6	40	11.5	4	-8
36	S	R	APC	RA002	0.018	☑	4.1	40	11.1	4	-7
38	S	R	APC	RA002	0.301	☐	3.8	40	5.7	4	-2
43	S	R	APC	RA002	0.397	☐	3.8	40	5.2	4	-1
49A	S	R	APC	RA002	0.011	☑	3.7	40	9.5	4	-6
5	S	R	APC	RA002	0.000	☑	4.4	40	34.8	4	-30
50	S	R	apc	RA001	0.076	☐	3.5	40	6.7	4	-3
56	S	R	apc	RA001	0.672	☐	5.2	40	6.8	4	-2
58	S	P	apc	RA001	0.013	☑	6.0	40	33.2	4	-27
61A	S	P	apc	RA001	0.111	☐	5.3	40	13.4	4	-8
62	S	R	apc	RA001	0.209	☐	4.7	40	9.2	4	-5
63B	S	R	apc	RA001	0.021	☑	4.0	40	12.4	4	-8
7	S	R	APC	RA002	0.001	☑	4.2	40	19.8	4	-16
73	S	R	APC	RA002	0.494	☐	3.6	40	3.0	4	1
78	S	R	APC	RA002	0.053	☐	3.2	40	4.8	4	-2
86A	S	R	apc	RA001	0.034	☑	4.2	40	11.4	4	-7
88A	S	R	apc	RA001	0.540	☐	3.5	40	3.0	4	0
906A	S	R	APC	RA002	0.730	☐	4.2	40	3.7	4	0
906B	S	R	APC	RA002	0.394	☐	3.7	40	3.0	4	1
906C	S	R	APC	RA002	0.488	☐	3.4	40	3.0	4	0
907	S	R	APC	RA002	0.317	☐	4.3	40	6.4	4	-2
908	S	R	APC	RA002	0.666	☐	6.9	40	5.3	4	2
908C	S	R	APC	RA002	0.552	☐	3.5	40	3.0	4	0
910A	S	R	APC	RA002	0.505	☐	3.8	40	3.0	4	1
910E	S	R	APC	RA002	0.620	☐	3.4	40	3.0	4	0
911	S	R	APC	RA002	0.129	☐	5.8	40	15.0	4	-9
911A	S	P	APC	RA002	0.514	☐	8.3	40	5.3	4	3
912	S	R	APC	RA002	0.511	☐	3.5	40	3.0	4	1
914	S	R	APC	RA002	0.373	☐	3.9	40	3.0	4	1
914D	S	R	APC	RA002	0.606	☐	3.3	40	3.0	4	0
916A	S	R	APC	RA002	0.444	☐	3.6	40	3.0	4	1
916C	S	R	APC	RA002	0.545	☐	3.4	40	3.0	4	0
916D	S	R	APC	RA002	0.535	☐	3.3	40	3.7	4	0
918	S	R	APC	RA002	0.104	☐	3.5	40	6.2	4	-3
93A	S	R	APC	RA002	0.544	☐	3.5	40	3.0	4	0
97A	S	R	APC	RA002	0.525	☐	3.3	40	3.0	4	0
97B	S	R	APC	RA002	0.591	☐	3.3	40	3.0	4	0
98	S	R	APC	RA002	0.114	☐	6.3	40	17.4	4	-11

Station	Depth	Status	Strategy	NOAA	t-Statistic Probability	Exceed Criteria (t-Stats <0.05)	Dry Weather Geometric Mean	Dry Weather N	Wet Weather Geometric Mean	Wet Weather N	GeoMean Difference
98A	S	R	APC	RA002	0.418	☐	3.9	40	3.0	4	1
KP1	S	P	apc	RA001	0.039	☑	10.0	40	43.8	4	-34
KP2	S	P	apc	RA001	0.004	☑	5.5	40	36.5	4	-31
KP3	S	P	apc	RA001	0.036	☑	5.3	40	19.3	4	-14
KP4	S	P	apc	RA001	0.250	☐	7.4	40	14.3	4	-7

Rainfall Statistics Summary: 48Hrs Cumulative

From: 1/1/2012 **To:** 12/31/2016

Report Area: NE1 **Wet/Dry Cutoff:** 0.3

Station	Depth	Status	Strategy	NOAA	t-Statistic Probability	Exceed Criteria (t-Stats <0.05)	Dry Weather Geometric Mean	Dry Weather N	Wet Weather Geometric Mean	Wet Weather N	GeoMean Difference
10	S	R	apc	RA001	0.008	☑	3.6	38	7.7	6	-4
18	S	P	apc	RA001	0.062	☐	5.9	38	16.7	6	-11
20	S	P	apc	RA001	0.001	☑	8.1	38	60.9	6	-53
20A	S	P	apc	RA001	0.025	☑	12.8	38	58.3	6	-46
21	S	P	apc	RA001	0.021	☑	7.2	38	25.8	6	-19
23	S	P	apc	RA001	0.254	☐	6.3	38	11.7	6	-5
24A	S	R	apc	RA001	0.765	☐	5.5	38	6.4	6	-1
26A	S	R	apc	RA001	0.727	☐	4.8	38	5.6	6	-1
28	S	R	apc	RA001	0.244	☐	4.6	38	7.4	6	-3
29A	S	R	apc	RA001	0.696	☐	3.9	38	3.5	6	0
33A	S	R	APC	RA002	0.000	☑	3.5	37	8.5	7	-5
36	S	R	APC	RA002	0.010	☑	3.9	37	9.2	7	-5
38	S	R	APC	RA002	0.741	☐	3.9	37	4.3	7	0
43	S	R	APC	RA002	0.861	☐	3.9	37	4.1	7	0
49A	S	R	APC	RA002	0.006	☑	3.6	37	7.9	7	-4
5	S	R	APC	RA002	0.000	☑	4.1	37	22.3	7	-18
50	S	R	apc	RA001	0.233	☐	3.6	38	5.1	6	-2
56	S	R	apc	RA001	0.641	☐	5.2	38	6.6	6	-1
58	S	P	apc	RA001	0.000	☑	5.2	38	45.2	6	-40
61A	S	P	apc	RA001	0.017	☑	4.9	38	15.5	6	-11
62	S	R	apc	RA001	0.174	☐	4.6	38	8.5	6	-4
63B	S	R	apc	RA001	0.051	☐	4.0	38	8.9	6	-5
7	S	R	APC	RA002	0.000	☑	3.7	37	19.9	7	-16
73	S	R	APC	RA002	0.345	☐	3.7	37	3.0	7	1
78	S	R	APC	RA002	0.255	☐	3.3	37	3.9	7	-1
86A	S	R	apc	RA001	0.029	☑	4.1	38	9.7	6	-6
88A	S	R	apc	RA001	0.441	☐	3.5	38	3.0	6	0
906A	S	R	APC	RA002	0.012	☑	3.7	37	7.4	7	-4
906B	S	R	APC	RA002	0.879	☐	3.6	37	3.7	7	0
906C	S	R	APC	RA002	0.057	☐	3.2	37	4.3	7	-1
907	S	R	APC	RA002	0.000	☑	3.7	37	12.3	7	-9
908	S	R	APC	RA002	0.114	☐	6.0	37	12.4	7	-6
908C	S	R	APC	RA002	0.965	☐	3.4	37	3.4	7	0
910A	S	R	APC	RA002	0.321	☐	3.6	37	4.7	7	-1
910E	S	R	APC	RA002	0.494	☐	3.5	37	3.0	7	0
911	S	R	APC	RA002	0.000	☑	4.7	37	29.4	7	-25
911A	S	P	APC	RA002	0.065	☐	6.8	37	17.6	7	-11
912	S	R	APC	RA002	0.863	☐	3.5	37	3.4	7	0
914	S	R	APC	RA002	0.902	☐	3.8	37	3.7	7	0
914D	S	R	APC	RA002	0.477	☐	3.4	37	3.0	7	0
916A	S	R	APC	RA002	0.756	☐	3.5	37	3.7	7	0
916C	S	R	APC	RA002	0.493	☐	3.3	37	3.7	7	0
916D	S	R	APC	RA002	0.128	☐	3.2	37	4.0	7	-1
918	S	R	APC	RA002	0.071	☐	3.4	37	5.6	7	-2
93A	S	R	APC	RA002	0.403	☐	3.5	37	3.0	7	1
97A	S	R	APC	RA002	0.381	☐	3.4	37	3.0	7	0
97B	S	R	APC	RA002	0.460	☐	3.3	37	3.0	7	0
98	S	R	APC	RA002	0.006	☑	5.6	37	21.4	7	-16

Station	Depth	Status	Strategy	NOAA	t-Statistic Probability	Exceed Criteria (t-Stats <0.05)	Dry Weather Geometric Mean	Dry Weather N	Wet Weather Geometric Mean	Wet Weather N	GeoMean Difference
98A	S	R	APC	RA002	0.739	☐	3.9	37	3.6	7	0
KP1	S	P	apc	RA001	0.000	☑	8.7	38	66.0	6	-57
KP2	S	P	apc	RA001	0.000	☑	4.7	38	48.1	6	-43
KP3	S	P	apc	RA001	0.001	☑	4.8	38	24.3	6	-20
KP4	S	P	apc	RA001	0.080	☐	7.0	38	16.1	6	-9

Rainfall Statistics Summary: 72Hrs Cumulative

From: 1/1/2012 **To:** 12/31/2016

Report Area: NE1 **Wet/Dry Cutoff:** 0.3

Station	Depth	Status	Strategy	NOAA	t-Statistic Probability	Exceed Criteria (t-Stats <0.05)	Dry Weather		Wet Weather		GeoMean Difference
							Geometric Mean	N	Geometric Mean	N	
10	S	R	apc	RA001	0.054	☐	3.6	33	5.6	11	-2
18	S	P	apc	RA001	0.110	☐	5.7	33	11.6	11	-6
20	S	P	apc	RA001	0.004	☑	7.5	33	31.1	11	-24
20A	S	P	apc	RA001	0.005	☑	10.9	33	47.6	11	-37
21	S	P	apc	RA001	0.005	☑	6.3	33	21.4	11	-15
23	S	P	apc	RA001	0.188	☐	6.0	33	10.5	11	-4
24A	S	R	apc	RA001	0.203	☐	4.9	33	8.2	11	-3
26A	S	R	apc	RA001	0.600	☐	4.7	33	5.6	11	-1
28	S	R	apc	RA001	0.097	☐	4.3	33	7.4	11	-3
29A	S	R	apc	RA001	0.982	☐	3.8	33	3.8	11	0
33A	S	R	APC	RA002	0.012	☑	3.5	31	5.8	13	-2
36	S	R	APC	RA002	0.010	☑	3.7	31	7.2	13	-4
38	S	R	APC	RA002	0.144	☐	3.6	31	5.1	13	-2
43	S	R	APC	RA002	0.442	☐	3.7	31	4.5	13	-1
49A	S	R	APC	RA002	0.089	☐	3.6	31	5.4	13	-2
5	S	R	APC	RA002	0.000	☑	3.5	31	14.4	13	-11
50	S	R	apc	RA001	0.696	☐	3.6	33	4.0	11	0
56	S	R	apc	RA001	0.670	☐	5.1	33	6.1	11	-1
58	S	P	apc	RA001	0.001	☑	4.8	33	22.0	11	-17
61A	S	P	apc	RA001	0.138	☐	5.0	33	8.8	11	-4
62	S	R	apc	RA001	0.323	☐	4.6	33	6.5	11	-2
63B	S	R	apc	RA001	0.048	☑	3.8	33	7.2	11	-3
7	S	R	APC	RA002	0.000	☑	3.5	31	10.5	13	-7
73	S	R	APC	RA002	0.568	☐	3.5	31	3.8	13	0
78	S	R	APC	RA002	0.297	☐	3.2	31	3.7	13	0
86A	S	R	apc	RA001	0.015	☑	3.8	33	8.1	11	-4
88A	S	R	apc	RA001	0.831	☐	3.4	33	3.5	11	0
906A	S	R	APC	RA002	0.007	☑	3.5	31	6.3	13	-3
906B	S	R	APC	RA002	0.586	☐	3.5	31	3.8	13	0
906C	S	R	APC	RA002	0.398	☐	3.3	31	3.7	13	0
907	S	R	APC	RA002	0.000	☑	3.4	31	8.4	13	-5
908	S	R	APC	RA002	0.501	☐	6.3	31	8.0	13	-2
908C	S	R	APC	RA002	0.982	☐	3.4	31	3.4	13	0
910A	S	R	APC	RA002	0.241	☐	3.4	31	4.5	13	-1
910E	S	R	APC	RA002	0.803	☐	3.4	31	3.3	13	0
911	S	R	APC	RA002	0.019	☑	4.8	31	12.0	13	-7
911A	S	P	APC	RA002	0.000	☑	5.2	31	21.4	13	-16
912	S	R	APC	RA002	0.863	☐	3.5	31	3.4	13	0
914	S	R	APC	RA002	0.653	☐	3.7	31	4.0	13	0
914D	S	R	APC	RA002	0.997	☐	3.3	31	3.3	13	0
916A	S	R	APC	RA002	0.874	☐	3.5	31	3.6	13	0
916C	S	R	APC	RA002	0.496	☐	3.3	31	3.6	13	0
916D	S	R	APC	RA002	0.531	☐	3.3	31	3.5	13	0
918	S	R	APC	RA002	0.022	☑	3.2	31	5.2	13	-2
93A	S	R	APC	RA002	0.795	☐	3.4	31	3.6	13	0
97A	S	R	APC	RA002	0.993	☐	3.3	31	3.3	13	0
97B	S	R	APC	RA002	0.731	☐	3.2	31	3.4	13	0
98	S	R	APC	RA002	0.011	☑	5.1	31	14.1	13	-9

Station	Depth	Status	Strategy	NOAA	t-Statistic Probability	Exceed Criteria (t-Stats <0.05)	Dry Weather		Wet Weather		GeoMean Difference
							Geometric Mean	N	Geometric Mean	N	
98A	S	R	APC	RA002	0.455	☐	3.7	31	4.3	13	-1
KP1	S	P	apc	RA001	0.008	☑	8.4	33	29.1	11	-21
KP2	S	P	apc	RA001	0.002	☑	4.7	33	17.5	11	-13
KP3	S	P	apc	RA001	0.030	☑	4.8	33	11.6	11	-7
KP4	S	P	apc	RA001	0.020	☑	6.3	33	15.0	11	-9

Shellfish Growing Water - Data Listing

New Jersey Department of Environmental Protection

Bureau of Marine Water Monitoring

Report Area: NE1

Station: 10 ***Depth:*** S

Geo Mean (YR):	4.0
Est 90th (YR):	9.3
# Samples (YR):	44
2.3% >	***31***
ShellClass:	R

Date	***Results***
4/13/2012	3.0
6/19/2012	3.0 K
9/4/2012	7.0
9/11/2012	3.0 K
9/20/2012	10.0
4/11/2013	3.0 K
5/2/2013	3.0 K
5/24/2013	3.0
6/17/2013	30.0
8/21/2013	3.0 K
8/29/2013	3.0 K
9/26/2013	3.0 K
10/17/2013	3.0
12/2/2013	17.0
12/26/2013	10.0
3/31/2014	47.0
5/30/2014	3.0
7/2/2014	3.0 K
7/14/2014	3.0 K
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0 K
6/22/2015	3.0
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	3.0 K
12/21/2015	10.0
1/7/2016	7.0
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0 K
7/15/2016	3.0 K
8/11/2016	3.0 K
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	7.0

Station: 18 ***Depth:*** S

Geo Mean (YR):	6.8
Est 90th (YR):	34.7
# Samples (YR):	44
15.9% >	***31***
ShellClass:	P

Date	***Results***
4/13/2012	3.0
6/19/2012	3.0
9/4/2012	3.0 K
9/11/2012	3.0 K
9/20/2012	30.0
4/11/2013	3.0 K
5/2/2013	63.0
5/24/2013	43.0
6/17/2013	73.0
8/21/2013	3.0 K
8/29/2013	3.0 K
9/26/2013	23.0
10/17/2013	3.0 K
12/2/2013	53.0
12/26/2013	120.0
3/31/2014	270.0 L
5/30/2014	3.0
7/2/2014	7.0
7/14/2014	3.0
7/22/2014	3.0 K
7/30/2014	3.0
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0 K
6/22/2015	7.0
8/6/2015	3.0 K
8/18/2015	3.0
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	3.0 K
12/21/2015	50.0
1/7/2016	7.0
3/24/2016	23.0
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0 K
7/15/2016	10.0
8/11/2016	27.0
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	7.0

Station: 20 ***Depth:*** S

Geo Mean (YR):	10.7
Est 90th (YR):	70.1
# Samples (YR):	44
31.8% >	***31***
ShellClass:	P

Date	***Results***
4/13/2012	3.0 K
6/19/2012	3.0
9/4/2012	63.0
9/11/2012	7.0
9/20/2012	77.0
4/11/2013	43.0
5/2/2013	37.0
5/24/2013	130.0
6/17/2013	77.0
8/21/2013	13.0
8/29/2013	7.0
9/26/2013	140.0
10/17/2013	7.0
12/2/2013	70.0
12/26/2013	130.0
3/31/2014	270.0 L
5/30/2014	3.0
7/2/2014	3.0 K
7/14/2014	40.0
7/22/2014	20.0
7/30/2014	3.0 K
8/27/2014	3.0
9/15/2014	3.0
9/29/2014	13.0
5/4/2015	3.0 K
5/7/2015	3.0
5/19/2015	3.0
6/22/2015	63.0
8/6/2015	3.0
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0
12/9/2015	3.0 K
12/21/2015	63.0
1/7/2016	3.0
3/24/2016	3.0
4/11/2016	3.0 K
5/11/2016	3.0
5/25/2016	7.0
7/15/2016	17.0

8/11/2016	43.0
8/24/2016	3.0
10/20/2016	3.0 K
12/7/2016	7.0

Station: 20A ***Depth:*** S

Geo Mean (YR):	15.8
Est 90th (YR):	115.9
# Samples (YR):	44
36.4% >	***31***
ShellClass:	P

Date	***Results***
4/13/2012	3.0
6/19/2012	3.0 K
9/4/2012	7.0
9/11/2012	3.0
9/20/2012	43.0
4/11/2013	77.0
5/2/2013	67.0
5/24/2013	70.0
6/17/2013	190.0
8/21/2013	230.0
8/29/2013	10.0
9/26/2013	3.0 K
10/17/2013	20.0
12/2/2013	43.0
12/26/2013	170.0
3/31/2014	270.0 L
5/30/2014	27.0
7/2/2014	3.0
7/14/2014	160.0
7/22/2014	10.0
7/30/2014	200.0
8/27/2014	3.0 K
9/15/2014	3.0
9/29/2014	7.0
5/4/2015	3.0 K
5/7/2015	3.0
5/19/2015	10.0
6/22/2015	70.0
8/6/2015	13.0
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	10.0
12/9/2015	3.0
12/21/2015	120.0
1/7/2016	13.0
3/24/2016	30.0
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	7.0
7/15/2016	37.0
8/11/2016	43.0
8/24/2016	7.0
10/20/2016	3.0
12/7/2016	90.0

Station: 21 ***Depth:*** S

Geo Mean (YR):	8.6
Est 90th (YR):	44.1
# Samples (YR):	44
25.0% >	***31***
ShellClass:	P

Date	***Results***
4/13/2012	3.0
6/19/2012	17.0
9/4/2012	80.0
9/11/2012	7.0
9/20/2012	60.0
4/11/2013	43.0
5/2/2013	7.0
5/24/2013	37.0
6/17/2013	140.0
8/21/2013	3.0
8/29/2013	3.0 K
9/26/2013	80.0
10/17/2013	13.0
12/2/2013	47.0
12/26/2013	70.0
3/31/2014	3.0 K
5/30/2014	30.0
7/2/2014	3.0
7/14/2014	3.0 K
7/22/2014	3.0 K
7/30/2014	3.0
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0
5/4/2015	10.0
5/7/2015	3.0 K
5/19/2015	27.0
6/22/2015	37.0
8/6/2015	3.0
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	7.0
12/9/2015	3.0 K
12/21/2015	33.0
1/7/2016	3.0 K
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0
7/15/2016	60.0
8/11/2016	7.0
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	13.0

Report Area: NE1

Station: 23 **Depth:** S

Geo Mean (YR):	6.9
Est 90th (YR):	32.4
# Samples (YR):	44
18.2% >	***31***
ShellClass:	P

Date	Results
4/13/2012	3.0 K
6/19/2012	3.0 K
9/4/2012	3.0 K
9/11/2012	3.0 K
9/20/2012	50.0
4/11/2013	3.0 K
5/2/2013	17.0
5/24/2013	3.0 K
6/17/2013	53.0
8/21/2013	3.0 K
8/29/2013	7.0
9/26/2013	27.0
10/17/2013	3.0 K
12/2/2013	33.0
12/26/2013	60.0
3/31/2014	270.0 L
5/30/2014	10.0
7/2/2014	3.0
7/14/2014	10.0
7/22/2014	7.0
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	10.0
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0 K
6/22/2015	40.0
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	3.0
12/21/2015	70.0
1/7/2016	3.0
3/24/2016	3.0
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	7.0
7/15/2016	13.0
8/11/2016	53.0
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	7.0

Station: 24A **Depth:** S

Geo Mean (YR):	5.6
Est 90th (YR):	24.1
# Samples (YR):	44
11.4% >	***31***
ShellClass:	R

Date	Results
4/13/2012	7.0
6/19/2012	3.0 K
9/4/2012	3.0 K
9/11/2012	20.0
9/20/2012	3.0
4/11/2013	3.0
5/2/2013	7.0
5/24/2013	3.0 K
6/17/2013	57.0
8/21/2013	3.0 K
8/29/2013	3.0 K
9/26/2013	3.0
10/17/2013	3.0 K
12/2/2013	33.0
12/26/2013	130.0
3/31/2014	270.0 L
5/30/2014	3.0 K
7/2/2014	3.0 K
7/14/2014	3.0 K
7/22/2014	3.0
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0 K
6/22/2015	7.0
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	3.0
12/21/2015	40.0
1/7/2016	7.0
3/24/2016	23.0
4/11/2016	3.0
5/11/2016	3.0
5/25/2016	3.0
7/15/2016	13.0
8/11/2016	27.0
8/24/2016	3.0 K
10/20/2016	3.0
12/7/2016	3.0 K

Station: 26A **Depth:** S

Geo Mean (YR):	4.9
Est 90th (YR):	18.4
# Samples (YR):	44
11.4% >	***31***
ShellClass:	R

Date	Results
4/13/2012	3.0 K
6/19/2012	3.0 K
9/4/2012	3.0
9/11/2012	3.0 K
9/20/2012	3.0
4/11/2013	3.0 K
5/2/2013	3.0 K
5/24/2013	3.0 K
6/17/2013	47.0
8/21/2013	3.0 K
8/29/2013	3.0 K
9/26/2013	10.0
10/17/2013	3.0 K
12/2/2013	37.0
12/26/2013	73.0
3/31/2014	130.0
5/30/2014	3.0 K
7/2/2014	3.0 K
7/14/2014	3.0 K
7/22/2014	3.0
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0 K
6/22/2015	3.0
8/6/2015	3.0
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	3.0 K
12/21/2015	43.0
1/7/2016	13.0
3/24/2016	3.0
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0
7/15/2016	23.0
8/11/2016	20.0
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	3.0

Station: 28 ***Depth:*** S

Geo Mean (YR):	4.9
Est 90th (YR):	16.1
# Samples (YR):	44
9.1% >	***31***
ShellClass:	R

Date	***Results***
4/13/2012	3.0 K
6/19/2012	3.0 K
9/4/2012	10.0
9/11/2012	3.0 K
9/20/2012	17.0
4/11/2013	3.0 K
5/2/2013	3.0
5/24/2013	3.0 K
6/17/2013	50.0
8/21/2013	3.0 K
8/29/2013	3.0 K
9/26/2013	3.0 K
10/17/2013	3.0 K
12/2/2013	3.0 K
12/26/2013	37.0
3/31/2014	37.0
5/30/2014	3.0 K
7/2/2014	3.0 K
7/14/2014	3.0 K
7/22/2014	7.0
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0 K
6/22/2015	20.0
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	3.0 K
12/21/2015	47.0
1/7/2016	20.0
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0 K
7/15/2016	13.0
8/11/2016	27.0
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	3.0 K

Station: 29A ***Depth:*** S

Geo Mean (YR):	3.8
Est 90th (YR):	8.7
# Samples (YR):	44
2.3% >	***31***
ShellClass:	R

Date	***Results***
4/13/2012	3.0 K
6/19/2012	3.0 K
9/4/2012	3.0 K
9/11/2012	3.0 K
9/20/2012	3.0 K
4/11/2013	3.0 K
5/2/2013	3.0 K
5/24/2013	3.0 K
6/17/2013	30.0
8/21/2013	3.0 K
8/29/2013	3.0 K
9/26/2013	3.0 K
10/17/2013	3.0 K
12/2/2013	20.0
12/26/2013	17.0
3/31/2014	3.0 K
5/30/2014	3.0 K
7/2/2014	3.0 K
7/14/2014	3.0 K
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0
6/22/2015	3.0
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	3.0
12/21/2015	37.0
1/7/2016	10.0
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0 K
7/15/2016	3.0 K
8/11/2016	3.0 K
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	7.0

Report Area: NE1

Station: 33A **Depth:** S

Geo Mean (YR):	4.0
Est 90th (YR):	9.0
# Samples (YR):	44
0.0% >	***31***
ShellClass:	R

Date	Results
4/13/2012	3.0
6/19/2012	3.0 K
9/4/2012	3.0 K
9/11/2012	3.0
9/20/2012	21.0
4/11/2013	17.0
5/2/2013	3.0 K
5/24/2013	20.0
6/17/2013	13.0
8/21/2013	3.0 K
9/5/2013	3.0
9/23/2013	3.0
10/17/2013	3.0 K
12/2/2013	7.0
12/26/2013	3.0
3/31/2014	17.0
5/30/2014	3.0 K
7/2/2014	3.0 K
7/11/2014	3.0 K
7/22/2014	3.0 K
7/30/2014	10.0
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0 K
6/22/2015	3.0 K
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	7.0
12/21/2015	13.0
1/7/2016	3.0 K
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0 K
7/15/2016	3.0 K
8/11/2016	3.0 K
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	3.0 K

Station: 36 **Depth:** S

Geo Mean (YR):	4.5
Est 90th (YR):	12.8
# Samples (YR):	44
9.1% >	***31***
ShellClass:	R

Date	Results
4/13/2012	3.0 K
6/19/2012	3.0 K
9/4/2012	3.0 K
9/11/2012	3.0
9/20/2012	3.0 K
4/11/2013	17.0
5/2/2013	3.0 K
5/24/2013	3.0 K
6/17/2013	33.0
8/21/2013	3.0 K
9/5/2013	3.0
9/23/2013	40.0
10/17/2013	3.0 K
12/2/2013	3.0
12/26/2013	10.0
3/31/2014	43.0
5/30/2014	3.0
7/2/2014	3.0
7/11/2014	3.0 K
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0 K
6/22/2015	33.0
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	3.0 K
12/21/2015	23.0
1/7/2016	7.0
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0
5/25/2016	3.0 K
7/15/2016	7.0
8/11/2016	3.0 K
8/24/2016	3.0 K
10/20/2016	3.0
12/7/2016	7.0

Station: 38 **Depth:** S

Geo Mean (YR):	4.0
Est 90th (YR):	10.1
# Samples (YR):	44
4.5% >	***31***
ShellClass:	R

Date	Results
4/13/2012	3.0 K
6/19/2012	3.0
9/4/2012	3.0 K
9/11/2012	7.0
9/20/2012	3.0 K
4/11/2013	3.0 K
5/2/2013	3.0
5/24/2013	3.0 K
6/17/2013	53.0
8/21/2013	3.0 K
9/5/2013	3.0
9/23/2013	3.0 K
10/17/2013	3.0
12/2/2013	3.0 K
12/26/2013	13.0
3/31/2014	40.0
5/30/2014	3.0 K
7/2/2014	3.0 K
7/11/2014	3.0 K
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0 K
6/22/2015	23.0
8/6/2015	3.0
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	3.0 K
12/21/2015	20.0
1/7/2016	3.0 K
3/24/2016	3.0 K
4/11/2016	3.0
5/11/2016	3.0
5/25/2016	3.0 K
7/15/2016	7.0
8/11/2016	3.0
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	3.0

Station: 43 ***Depth:*** S

Geo Mean (YR):	3.9
Est 90th (YR):	9.4
# Samples (YR):	44
2.3% >	***31***
ShellClass:	R

Date	***Results***
4/13/2012	3.0
6/19/2012	3.0 K
9/4/2012	3.0
9/11/2012	3.0
9/20/2012	3.0
4/11/2013	3.0 K
5/2/2013	3.0 K
5/24/2013	3.0 K
6/17/2013	40.0
8/21/2013	3.0 K
9/5/2013	7.0
9/23/2013	3.0 K
10/17/2013	3.0
12/2/2013	3.0 K
12/26/2013	17.0
3/31/2014	27.0
5/30/2014	3.0 K
7/2/2014	3.0 K
7/11/2014	3.0 K
7/22/2014	3.0
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0
6/22/2015	10.0
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	3.0 K
12/21/2015	27.0
1/7/2016	10.0
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0
7/15/2016	3.0 K
8/11/2016	3.0
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	3.0 K

Station: 49A ***Depth:*** S

Geo Mean (YR):	4.1
Est 90th (YR):	10.1
# Samples (YR):	44
2.3% >	***31***
ShellClass:	R

Date	***Results***
4/13/2012	3.0
6/19/2012	3.0 K
9/4/2012	3.0 K
9/11/2012	3.0 K
9/20/2012	27.0
4/11/2013	17.0
5/2/2013	3.0 K
5/24/2013	3.0 K
6/17/2013	13.0
8/21/2013	3.0
9/5/2013	3.0 K
9/23/2013	3.0 K
10/17/2013	3.0 K
12/2/2013	23.0
12/26/2013	7.0
3/31/2014	53.0
5/30/2014	3.0 K
7/2/2014	3.0 K
7/11/2014	3.0
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0 K
6/22/2015	3.0 K
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	13.0
12/21/2015	7.0
1/7/2016	3.0 K
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0 K
7/15/2016	3.0 K
8/11/2016	3.0 K
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	3.0 K

Report Area: NE1

Station: 5 **Depth:** S

Geo Mean (YR):	5.4
Est 90th (YR):	18.2
# Samples (YR):	44
6.8% >	***31***
ShellClass:	R

Date	Results
4/13/2012	3.0
6/19/2012	3.0 K
9/4/2012	3.0 K
9/11/2012	7.0
9/20/2012	23.0
4/11/2013	30.0
5/2/2013	3.0
5/24/2013	17.0
6/17/2013	23.0
8/21/2013	3.0 K
9/5/2013	3.0 K
9/23/2013	27.0
10/17/2013	3.0
12/2/2013	3.0 K
12/26/2013	40.0
3/31/2014	43.0
5/30/2014	3.0 K
7/2/2014	7.0
7/11/2014	3.0 K
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0 K
6/22/2015	23.0
8/6/2015	3.0 K
8/18/2015	3.0
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	3.0 K
12/21/2015	13.0
1/7/2016	3.0 K
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0
5/25/2016	3.0 K
7/15/2016	7.0
8/11/2016	3.0 K
8/24/2016	7.0
10/20/2016	3.0 K
12/7/2016	67.0

Station: 50 **Depth:** S

Geo Mean (YR):	3.7
Est 90th (YR):	9.0
# Samples (YR):	44
4.5% >	***31***
ShellClass:	R

Date	Results
4/13/2012	3.0 K
6/19/2012	3.0 K
9/4/2012	3.0 K
9/11/2012	3.0 K
9/20/2012	3.0 K
4/11/2013	3.0 K
5/2/2013	3.0 K
5/24/2013	3.0 K
6/17/2013	43.0
8/21/2013	3.0 K
8/29/2013	3.0 K
9/26/2013	3.0 K
10/17/2013	3.0 K
12/2/2013	13.0
12/26/2013	3.0 K
3/31/2014	73.0
5/30/2014	3.0 K
7/2/2014	3.0 K
7/14/2014	3.0 K
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0
5/19/2015	3.0
6/22/2015	3.0
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	3.0 K
12/21/2015	13.0
1/7/2016	7.0
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0
7/15/2016	3.0 K
8/11/2016	3.0 K
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	3.0 K

Station: 56 **Depth:** S

Geo Mean (YR):	5.4
Est 90th (YR):	23.7
# Samples (YR):	44
15.9% >	***31***
ShellClass:	R

Date	Results
4/13/2012	3.0 K
6/19/2012	3.0 K
9/4/2012	3.0 K
9/11/2012	3.0
9/20/2012	13.0
4/11/2013	3.0 K
5/2/2013	3.0 K
5/24/2013	3.0 K
6/17/2013	97.0
8/21/2013	3.0
8/29/2013	3.0 K
9/26/2013	3.0
10/17/2013	3.0 K
12/2/2013	70.0
12/26/2013	67.0
3/31/2014	80.0
5/30/2014	3.0 K
7/2/2014	3.0 K
7/14/2014	3.0 K
7/22/2014	7.0
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0 K
6/22/2015	3.0 K
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0
9/8/2015	3.0 K
12/9/2015	3.0 K
12/21/2015	53.0
1/7/2016	20.0
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0
5/25/2016	3.0 K
7/15/2016	50.0
8/11/2016	47.0
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	3.0 K

Station: 58 ***Depth:*** S

Geo Mean (YR):	7.0
Est 90th (YR):	38.8
# Samples (YR):	44
18.2% >	***31***
ShellClass:	P

Date	***Results***
4/13/2012	3.0 K
6/19/2012	3.0 K
9/4/2012	140.0
9/11/2012	3.0 K
9/20/2012	50.0
4/11/2013	73.0
5/2/2013	10.0
5/24/2013	20.0
6/17/2013	130.0
8/21/2013	3.0 K
8/29/2013	7.0
9/26/2013	7.0
10/17/2013	10.0
12/2/2013	110.0
12/26/2013	150.0
3/31/2014	83.0
5/30/2014	7.0
7/2/2014	3.0 K
7/14/2014	3.0 K
7/22/2014	3.0 K
7/30/2014	17.0
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0 K
6/22/2015	3.0
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0
9/8/2015	3.0 K
12/9/2015	3.0 K
12/21/2015	60.0
1/7/2016	3.0
3/24/2016	3.0 K
4/11/2016	3.0
5/11/2016	3.0 K
5/25/2016	3.0
7/15/2016	3.0 K
8/11/2016	3.0 K
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	10.0

Station: 61A ***Depth:*** S

Geo Mean (YR):	5.7
Est 90th (YR):	23.9
# Samples (YR):	44
13.6% >	***31***
ShellClass:	P

Date	***Results***
4/13/2012	3.0 K
6/19/2012	3.0 K
9/4/2012	43.0
9/11/2012	3.0 K
9/20/2012	10.0
4/11/2013	37.0
5/2/2013	7.0
5/24/2013	3.0 K
6/17/2013	120.0
8/21/2013	3.0 K
8/29/2013	3.0
9/26/2013	3.0 K
10/17/2013	3.0
12/2/2013	47.0
12/26/2013	23.0
3/31/2014	97.0
5/30/2014	10.0
7/2/2014	3.0 K
7/14/2014	3.0 K
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0
6/22/2015	3.0
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0
9/8/2015	3.0 K
12/9/2015	3.0
12/21/2015	43.0
1/7/2016	23.0
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0
7/15/2016	27.0
8/11/2016	3.0
8/24/2016	3.0 K
10/20/2016	10.0
12/7/2016	3.0

Report Area: NE1

Station: 62 ***Depth:*** S

Geo Mean (YR):	5.0
Est 90th (YR):	18.4
# Samples (YR):	44
6.8% >	***31***
ShellClass:	R

Date	***Results***
4/13/2012	3.0 K
6/19/2012	3.0
9/4/2012	17.0
9/11/2012	3.0 K
9/20/2012	3.0 K
4/11/2013	3.0 K
5/2/2013	3.0 K
5/24/2013	3.0
6/17/2013	30.0
8/21/2013	3.0
8/29/2013	3.0 K
9/26/2013	13.0
10/17/2013	3.0 K
12/2/2013	57.0
12/26/2013	13.0
3/31/2014	270.0 L
5/30/2014	3.0 K
7/2/2014	3.0 K
7/14/2014	3.0 K
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0
5/7/2015	7.0
5/19/2015	7.0
6/22/2015	3.0 K
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	3.0 K
12/21/2015	50.0
1/7/2016	3.0
3/24/2016	3.0 K
4/11/2016	3.0
5/11/2016	3.0 K
5/25/2016	20.0
7/15/2016	7.0
8/11/2016	3.0 K
8/24/2016	7.0
10/20/2016	3.0 K
12/7/2016	3.0

Station: 63B ***Depth:*** S

Geo Mean (YR):	4.4
Est 90th (YR):	14.9
# Samples (YR):	44
6.8% >	***31***
ShellClass:	R

Date	***Results***
4/13/2012	3.0 K
6/19/2012	3.0
9/4/2012	7.0
9/11/2012	3.0
9/20/2012	3.0
4/11/2013	3.0 K
5/2/2013	3.0 K
5/24/2013	13.0
6/17/2013	23.0
8/21/2013	3.0 K
8/29/2013	3.0 K
9/26/2013	3.0
10/17/2013	3.0 K
12/2/2013	57.0
12/26/2013	67.0
3/31/2014	200.0
5/30/2014	7.0
7/2/2014	3.0
7/14/2014	3.0 K
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0
6/22/2015	3.0
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	3.0
12/21/2015	7.0
1/7/2016	7.0
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0 K
7/15/2016	3.0
8/11/2016	3.0 K
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	3.0 K

Station: 7 ***Depth:*** S

Geo Mean (YR):	4.9
Est 90th (YR):	15.8
# Samples (YR):	44
6.8% >	***31***
ShellClass:	R

Date	***Results***
4/13/2012	3.0 K
6/19/2012	3.0 K
9/4/2012	3.0
9/11/2012	3.0
9/20/2012	90.0
4/11/2013	23.0
5/2/2013	3.0 K
5/24/2013	47.0
6/17/2013	10.0
8/21/2013	3.0 K
9/5/2013	7.0
9/23/2013	30.0
10/17/2013	3.0
12/2/2013	10.0
12/26/2013	27.0
3/31/2014	47.0
5/30/2014	3.0
7/2/2014	3.0 K
7/11/2014	3.0 K
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	7.0
6/22/2015	3.0 K
8/6/2015	3.0 K
8/18/2015	3.0
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	3.0 K
12/21/2015	3.0 K
1/7/2016	7.0
3/24/2016	3.0 K
4/11/2016	7.0
5/11/2016	3.0 K
5/25/2016	3.0 K
7/15/2016	3.0 K
8/11/2016	3.0 K
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	3.0 K

Station: 73 ***Depth:*** S

Geo Mean (YR):	3.6
Est 90th (YR):	6.8
# Samples (YR):	44
0.0% >	***31***
ShellClass:	R

Date	***Results***
4/13/2012	3.0
6/19/2012	3.0
9/4/2012	3.0 K
9/11/2012	3.0 K
9/20/2012	3.0 K
4/11/2013	3.0 K
5/2/2013	3.0 K
5/24/2013	3.0 K
6/17/2013	30.0
8/21/2013	3.0 K
9/5/2013	3.0 K
9/23/2013	3.0 K
10/17/2013	3.0 K
12/2/2013	3.0
12/26/2013	20.0
3/31/2014	3.0
5/30/2014	3.0 K
7/2/2014	3.0 K
7/11/2014	3.0 K
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0
6/22/2015	10.0
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	3.0 K
12/21/2015	10.0
1/7/2016	7.0
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0 K
7/15/2016	3.0 K
8/11/2016	3.0 K
8/24/2016	3.0
10/20/2016	3.0 K
12/7/2016	3.0 K

Station: 78 ***Depth:*** S

Geo Mean (YR):	3.4
Est 90th (YR):	5.6
# Samples (YR):	44
0.0% >	***31***
ShellClass:	R

Date	***Results***
4/13/2012	3.0 K
6/19/2012	3.0 K
9/4/2012	3.0
9/11/2012	3.0
9/20/2012	3.0
4/11/2013	3.0 K
5/2/2013	3.0 K
5/24/2013	3.0 K
6/17/2013	13.0
8/21/2013	3.0 K
9/5/2013	3.0 K
9/23/2013	3.0 K
10/17/2013	3.0 K
12/2/2013	7.0
12/26/2013	7.0
3/31/2014	20.0
5/30/2014	3.0 K
7/2/2014	3.0 K
7/11/2014	3.0 K
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0 K
6/22/2015	3.0
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	3.0 K
12/21/2015	3.0 K
1/7/2016	3.0
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0 K
7/15/2016	3.0 K
8/11/2016	3.0 K
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	3.0 K

Report Area: NE1

Station: 86A ***Depth:*** S

Geo Mean (YR):	4.6
Est 90th (YR):	14.7
# Samples (YR):	44
4.5% >	***31***
ShellClass:	R

Date	***Results***
4/13/2012	3.0 K
6/19/2012	3.0
9/4/2012	7.0
9/11/2012	3.0 K
9/20/2012	7.0
4/11/2013	10.0
5/2/2013	3.0 K
5/24/2013	10.0
6/17/2013	30.0
8/21/2013	3.0 K
8/29/2013	3.0 K
9/26/2013	7.0
10/17/2013	3.0 K
12/2/2013	30.0
12/26/2013	150.0
3/31/2014	57.0
5/30/2014	3.0 K
7/2/2014	3.0 K
7/14/2014	3.0 K
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0
9/29/2014	3.0
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0 K
6/22/2015	3.0 K
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	13.0
12/9/2015	3.0 K
12/21/2015	10.0
1/7/2016	3.0
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0 K
7/15/2016	3.0 K
8/11/2016	3.0 K
8/24/2016	3.0
10/20/2016	3.0
12/7/2016	3.0 K

Station: 88A ***Depth:*** S

Geo Mean (YR):	3.4
Est 90th (YR):	6.1
# Samples (YR):	44
0.0% >	***31***
ShellClass:	R

Date	***Results***
4/13/2012	3.0 K
6/19/2012	3.0 K
9/4/2012	3.0 K
9/11/2012	3.0 K
9/20/2012	3.0
4/11/2013	3.0 K
5/2/2013	3.0 K
5/24/2013	3.0 K
6/17/2013	10.0
8/21/2013	3.0 K
8/29/2013	3.0 K
9/26/2013	3.0
10/17/2013	3.0 K
12/2/2013	23.0
12/26/2013	17.0
3/31/2014	3.0 K
5/30/2014	3.0 K
7/2/2014	3.0 K
7/14/2014	3.0
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0 K
6/22/2015	3.0 K
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	7.0
12/21/2015	3.0
1/7/2016	3.0 K
3/24/2016	3.0
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0 K
7/15/2016	3.0 K
8/11/2016	3.0 K
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	3.0 K

Station: 906A ***Depth:*** S

Geo Mean (YR):	4.1
Est 90th (YR):	9.8
# Samples (YR):	44
2.3% >	***31***
ShellClass:	R

Date	***Results***
4/13/2012	3.0
6/19/2012	3.0 K
9/4/2012	7.0
9/11/2012	3.0 K
9/20/2012	53.0
4/11/2013	3.0 K
5/2/2013	3.0 K
5/24/2013	3.0 K
6/17/2013	23.0
8/21/2013	3.0 K
9/5/2013	3.0 K
9/23/2013	17.0
10/17/2013	3.0 K
12/2/2013	13.0
12/26/2013	7.0
3/31/2014	3.0
5/30/2014	3.0
7/2/2014	3.0 K
7/11/2014	10.0
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	10.0
6/22/2015	3.0 K
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0
12/9/2015	3.0 K
12/21/2015	3.0 K
1/7/2016	3.0 K
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0
7/15/2016	3.0 K
8/11/2016	3.0 K
8/24/2016	10.0
10/20/2016	3.0 K
12/7/2016	7.0

Station: 906B ***Depth:*** S

Geo Mean (YR):	3.6
Est 90th (YR):	6.4
# Samples (YR):	44
0.0% >	***31***
ShellClass:	R

Date	***Results***
4/13/2012	3.0 K
6/19/2012	10.0
9/4/2012	3.0
9/11/2012	3.0 K
9/20/2012	13.0
4/11/2013	3.0 K
5/2/2013	3.0 K
5/24/2013	3.0
6/17/2013	17.0
8/21/2013	3.0
9/5/2013	3.0 K
9/23/2013	3.0
10/17/2013	3.0 K
12/2/2013	10.0
12/26/2013	7.0
3/31/2014	3.0 K
5/30/2014	3.0
7/2/2014	3.0 K
7/11/2014	3.0 K
7/22/2014	3.0
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0
6/22/2015	7.0
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	3.0 K
12/21/2015	3.0
1/7/2016	3.0
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	7.0
7/15/2016	3.0 K
8/11/2016	3.0 K
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	3.0

Station: 906C ***Depth:*** S

Geo Mean (YR):	3.4
Est 90th (YR):	5.5
# Samples (YR):	44
0.0% >	***31***
ShellClass:	R

Date	***Results***
4/13/2012	3.0 K
6/19/2012	3.0 K
9/4/2012	17.0
9/11/2012	3.0 K
9/20/2012	3.0
4/11/2013	3.0 K
5/2/2013	3.0 K
5/24/2013	3.0 K
6/17/2013	10.0
8/21/2013	3.0 K
9/5/2013	3.0 K
9/23/2013	7.0
10/17/2013	7.0
12/2/2013	7.0
12/26/2013	3.0
3/31/2014	3.0 K
5/30/2014	3.0 K
7/2/2014	3.0
7/11/2014	3.0
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0
6/22/2015	3.0 K
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	3.0 K
12/21/2015	3.0
1/7/2016	3.0 K
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0 K
7/15/2016	3.0 K
8/11/2016	3.0 K
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	3.0 K

Report Area: NE1

Station: 907 **Depth:** S

Geo Mean (YR):	4.5
Est 90th (YR):	11.8
# Samples (YR):	44
2.3% >	***31***
ShellClass:	R

Date	Results
4/13/2012	3.0
6/19/2012	3.0 K
9/4/2012	30.0
9/11/2012	17.0
9/20/2012	37.0
4/11/2013	7.0
5/2/2013	3.0 K
5/24/2013	3.0
6/17/2013	17.0
8/21/2013	3.0 K
9/5/2013	3.0 K
9/23/2013	23.0
10/17/2013	3.0
12/2/2013	3.0
12/26/2013	7.0
3/31/2014	3.0
5/30/2014	3.0 K
7/2/2014	3.0 K
7/11/2014	3.0 K
7/22/2014	7.0
7/30/2014	7.0
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0 K
6/22/2015	3.0 K
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0
12/9/2015	3.0 K
12/21/2015	13.0
1/7/2016	3.0
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0 K
7/15/2016	3.0
8/11/2016	3.0 K
8/24/2016	3.0 K
10/20/2016	3.0
12/7/2016	27.0

Station: 908 **Depth:** S

Geo Mean (YR):	6.7
Est 90th (YR):	27.7
# Samples (YR):	44
11.4% >	***31***
ShellClass:	R

Date	Results
4/13/2012	3.0
6/19/2012	6.0
9/4/2012	20.0
9/11/2012	7.0
9/20/2012	47.0
4/11/2013	13.0
5/2/2013	3.0 K
5/24/2013	3.0 K
6/17/2013	3.0
8/21/2013	3.0
9/5/2013	27.0
9/23/2013	57.0
10/17/2013	17.0
12/2/2013	17.0
12/26/2013	10.0
3/31/2014	3.0
5/30/2014	3.0 K
7/2/2014	3.0 K
7/11/2014	150.0
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	7.0
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0 K
6/22/2015	3.0 K
8/6/2015	7.0
8/18/2015	3.0 K
8/31/2015	150.0
9/8/2015	3.0 K
12/9/2015	43.0
12/21/2015	7.0
1/7/2016	7.0
3/24/2016	17.0
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0
7/15/2016	3.0 K
8/11/2016	7.0
8/24/2016	7.0
10/20/2016	3.0 K
12/7/2016	7.0

Station: 908C **Depth:** S

Geo Mean (YR):	3.4
Est 90th (YR):	6.0
# Samples (YR):	44
0.0% >	***31***
ShellClass:	R

Date	Results
4/13/2012	3.0 K
6/19/2012	3.0 K
9/4/2012	3.0 K
9/11/2012	3.0
9/20/2012	7.0
4/11/2013	3.0 K
5/2/2013	3.0 K
5/24/2013	3.0
6/17/2013	23.0
8/21/2013	3.0
9/5/2013	3.0 K
9/23/2013	3.0 K
10/17/2013	3.0 K
12/2/2013	20.0
12/26/2013	7.0
3/31/2014	3.0 K
5/30/2014	3.0 K
7/2/2014	3.0 K
7/11/2014	3.0
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0 K
6/22/2015	3.0 K
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	3.0 K
12/21/2015	3.0
1/7/2016	3.0 K
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0 K
7/15/2016	3.0 K
8/11/2016	3.0 K
8/24/2016	3.0
10/20/2016	3.0 K
12/7/2016	3.0 K

Station: 910A ***Depth:*** S

Geo Mean (YR):	3.7
Est 90th (YR):	8.7
# Samples (YR):	44
2.3% >	***31***
ShellClass:	R

Date	***Results***
4/13/2012	3.0
6/19/2012	7.0
9/4/2012	3.0 K
9/11/2012	3.0 K
9/20/2012	67.0
4/11/2013	3.0 K
5/2/2013	3.0 K
5/24/2013	3.0 K
6/17/2013	3.0 K
8/21/2013	3.0 K
9/5/2013	3.0 K
9/23/2013	3.0
10/17/2013	3.0 K
12/2/2013	27.0
12/26/2013	23.0
3/31/2014	3.0 K
5/30/2014	3.0 K
7/2/2014	3.0 K
7/11/2014	3.0 K
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0
5/19/2015	3.0
6/22/2015	3.0 K
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	3.0 K
12/21/2015	10.0
1/7/2016	3.0
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0 K
7/15/2016	3.0 K
8/11/2016	3.0 K
8/24/2016	3.0 K
10/20/2016	3.0
12/7/2016	3.0

Station: 910E ***Depth:*** S

Geo Mean (YR):	3.4
Est 90th (YR):	6.5
# Samples (YR):	44
2.3% >	***31***
ShellClass:	R

Date	***Results***
4/13/2012	3.0 K
6/19/2012	3.0 K
9/4/2012	3.0 K
9/11/2012	3.0 K
9/20/2012	3.0
4/11/2013	3.0 K
5/2/2013	60.0
5/24/2013	3.0
6/17/2013	3.0
8/21/2013	3.0
9/5/2013	3.0 K
9/23/2013	3.0 K
10/17/2013	10.0
12/2/2013	3.0
12/26/2013	10.0
3/31/2014	3.0 K
5/30/2014	3.0 K
7/2/2014	3.0 K
7/11/2014	3.0 K
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0
5/4/2015	3.0 K
5/7/2015	3.0
5/19/2015	3.0 K
6/22/2015	3.0 K
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	3.0 K
12/21/2015	3.0
1/7/2016	3.0 K
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0 K
7/15/2016	3.0 K
8/11/2016	3.0
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	3.0

Report Area: NE1

Station: 911 **Depth:** S

Geo Mean (YR):	6.3
Est 90th (YR):	29.2
# Samples (YR):	44
9.1% >	***31***
ShellClass:	R

Date	Results
4/13/2012	3.0 K
6/19/2012	3.0 K
9/4/2012	17.0
9/11/2012	7.0
9/20/2012	300.0
4/11/2013	3.0 K
5/2/2013	3.0 K
5/24/2013	17.0
6/17/2013	27.0
8/21/2013	3.0
9/5/2013	17.0
9/23/2013	73.0
10/17/2013	3.0 K
12/2/2013	220.0
12/26/2013	3.0 K
3/31/2014	13.0
5/30/2014	3.0 K
7/2/2014	3.0
7/11/2014	3.0 K
7/22/2014	3.0
7/30/2014	3.0
8/27/2014	3.0 K
9/15/2014	3.0
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	10.0
6/22/2015	3.0
8/6/2015	7.0
8/18/2015	7.0
8/31/2015	3.0 K
9/8/2015	7.0
12/9/2015	3.0 K
12/21/2015	3.0
1/7/2016	7.0
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0
7/15/2016	17.0
8/11/2016	10.0
8/24/2016	3.0 K
10/20/2016	3.0
12/7/2016	77.0

Station: 911A **Depth:** S

Geo Mean (YR):	7.9
Est 90th (YR):	39.1
# Samples (YR):	44
11.4% >	***31***
ShellClass:	P

Date	Results
4/13/2012	3.0
6/19/2012	3.0 K
9/4/2012	27.0
9/11/2012	270.0 L
9/20/2012	87.0
4/11/2013	13.0
5/2/2013	3.0 K
5/24/2013	3.0 K
6/17/2013	3.0
8/21/2013	3.0 K
9/5/2013	3.0
9/23/2013	270.0 L
10/17/2013	27.0
12/2/2013	60.0
12/26/2013	13.0
3/31/2014	3.0
5/30/2014	7.0
7/2/2014	3.0 K
7/11/2014	13.0
7/22/2014	50.0
7/30/2014	23.0
8/27/2014	3.0 K
9/15/2014	10.0
9/29/2014	7.0
5/4/2015	3.0 K
5/7/2015	3.0
5/19/2015	10.0
6/22/2015	17.0
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	7.0
9/8/2015	13.0
12/9/2015	3.0 K
12/21/2015	3.0 K
1/7/2016	3.0 K
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	7.0
7/15/2016	3.0 K
8/11/2016	3.0 K
8/24/2016	27.0
10/20/2016	17.0
12/7/2016	7.0

Station: 912 **Depth:** S

Geo Mean (YR):	3.5
Est 90th (YR):	6.4
# Samples (YR):	44
0.0% >	***31***
ShellClass:	R

Date	Results
4/13/2012	3.0 K
6/19/2012	3.0 K
9/4/2012	3.0 K
9/11/2012	3.0 K
9/20/2012	7.0
4/11/2013	3.0 K
5/2/2013	3.0 K
5/24/2013	3.0 K
6/17/2013	30.0
8/21/2013	3.0 K
9/5/2013	3.0 K
9/23/2013	3.0 K
10/17/2013	3.0 K
12/2/2013	17.0
12/26/2013	7.0
3/31/2014	3.0 K
5/30/2014	3.0 K
7/2/2014	3.0 K
7/11/2014	3.0 K
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0 K
6/22/2015	3.0 K
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	3.0 K
12/21/2015	3.0 K
1/7/2016	7.0
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0 K
7/15/2016	3.0 K
8/11/2016	3.0 K
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	3.0 K

Station: 914 ***Depth:*** S

Geo Mean (YR):	3.8
Est 90th (YR):	7.6
# Samples (YR):	44
0.0% >	***31***
ShellClass:	R

Date	***Results***
4/13/2012	3.0 K
6/19/2012	3.0
9/4/2012	3.0 K
9/11/2012	3.0 K
9/20/2012	13.0
4/11/2013	3.0 K
5/2/2013	3.0 K
5/24/2013	3.0 K
6/17/2013	17.0
8/21/2013	3.0
9/5/2013	7.0
9/23/2013	3.0 K
10/17/2013	3.0
12/2/2013	27.0
12/26/2013	7.0
3/31/2014	3.0
5/30/2014	3.0 K
7/2/2014	3.0 K
7/11/2014	3.0 K
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0 K
6/22/2015	3.0 K
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	3.0 K
12/21/2015	3.0
1/7/2016	7.0
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	7.0
7/15/2016	3.0 K
8/11/2016	3.0 K
8/24/2016	13.0
10/20/2016	3.0
12/7/2016	3.0 K

Station: 914D ***Depth:*** S

Geo Mean (YR):	3.3
Est 90th (YR):	5.3
# Samples (YR):	44
0.0% >	***31***
ShellClass:	R

Date	***Results***
4/13/2012	3.0 K
6/19/2012	3.0
9/4/2012	3.0 K
9/11/2012	10.0
9/20/2012	3.0
4/11/2013	3.0 K
5/2/2013	3.0 K
5/24/2013	3.0 K
6/17/2013	23.0
8/21/2013	3.0 K
9/5/2013	3.0 K
9/23/2013	3.0 K
10/17/2013	3.0 K
12/2/2013	7.0
12/26/2013	3.0
3/31/2014	3.0
5/30/2014	3.0 K
7/2/2014	3.0 K
7/11/2014	3.0
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0 K
6/22/2015	3.0 K
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	3.0 K
12/21/2015	3.0 K
1/7/2016	3.0
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0 K
7/15/2016	3.0 K
8/11/2016	3.0 K
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	3.0 K

Report Area: NE1

Station: 916A ***Depth:*** S

Geo Mean (YR):	3.5
Est 90th (YR):	6.2
# Samples (YR):	44
0.0% >	***31***
ShellClass:	R

Date	***Results***
4/13/2012	3.0 K
6/19/2012	3.0
9/4/2012	3.0 K
9/11/2012	3.0 K
9/20/2012	13.0
4/11/2013	3.0 K
5/2/2013	3.0 K
5/24/2013	3.0 K
6/17/2013	20.0
8/21/2013	3.0
9/5/2013	3.0
9/23/2013	3.0 K
10/17/2013	3.0
12/2/2013	10.0
12/26/2013	7.0
3/31/2014	3.0 K
5/30/2014	7.0
7/2/2014	3.0 K
7/11/2014	3.0 K
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0 K
6/22/2015	3.0 K
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	3.0
12/21/2015	3.0 K
1/7/2016	7.0
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0 K
7/15/2016	3.0 K
8/11/2016	3.0 K
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	3.0 K

Station: 916C ***Depth:*** S

Geo Mean (YR):	3.4
Est 90th (YR):	5.6
# Samples (YR):	44
0.0% >	***31***
ShellClass:	R

Date	***Results***
4/13/2012	3.0
6/19/2012	3.0 K
9/4/2012	3.0 K
9/11/2012	3.0 K
9/20/2012	13.0
4/11/2013	3.0 K
5/2/2013	3.0 K
5/24/2013	3.0 K
6/17/2013	20.0
8/21/2013	3.0 K
9/5/2013	3.0
9/23/2013	3.0 K
10/17/2013	3.0 K
12/2/2013	7.0
12/26/2013	7.0
3/31/2014	3.0 K
5/30/2014	3.0 K
7/2/2014	3.0 K
7/11/2014	3.0 K
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0
5/7/2015	3.0 K
5/19/2015	3.0 K
6/22/2015	3.0 K
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	3.0 K
12/21/2015	3.0 K
1/7/2016	3.0 K
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0 K
7/15/2016	3.0 K
8/11/2016	3.0 K
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	3.0

Station: 916D ***Depth:*** S

Geo Mean (YR):	3.3
Est 90th (YR):	5.2
# Samples (YR):	44
0.0% >	***31***
ShellClass:	R

Date	***Results***
4/13/2012	3.0 K
6/19/2012	3.0
9/4/2012	3.0 K
9/11/2012	3.0 K
9/20/2012	10.0
4/11/2013	3.0 K
5/2/2013	3.0 K
5/24/2013	3.0 K
6/17/2013	7.0
8/21/2013	3.0 K
9/5/2013	3.0 K
9/23/2013	3.0 K
10/17/2013	3.0 K
12/2/2013	17.0
12/26/2013	3.0
3/31/2014	7.0
5/30/2014	3.0 K
7/2/2014	3.0 K
7/11/2014	3.0 K
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0 K
6/22/2015	3.0 K
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	3.0 K
12/21/2015	3.0 K
1/7/2016	3.0 K
3/24/2016	3.0
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0 K
7/15/2016	3.0 K
8/11/2016	3.0 K
8/24/2016	3.0
10/20/2016	3.0 K
12/7/2016	3.0 K

Station: 918 ***Depth:*** S

Geo Mean (YR):	3.7
Est 90th (YR):	8.5
# Samples (YR):	44
2.3% >	***31***
ShellClass:	R

Date	***Results***
4/13/2012	3.0 K
6/19/2012	3.0
9/4/2012	3.0 K
9/11/2012	3.0
9/20/2012	13.0
4/11/2013	3.0 K
5/2/2013	3.0 K
5/24/2013	3.0 K
6/17/2013	27.0
8/21/2013	3.0 K
9/5/2013	3.0 K
9/23/2013	3.0 K
10/17/2013	3.0 K
12/2/2013	3.0 K
12/26/2013	23.0
3/31/2014	53.0
5/30/2014	3.0 K
7/2/2014	3.0 K
7/11/2014	3.0 K
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0 K
6/22/2015	7.0
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0
12/9/2015	3.0
12/21/2015	3.0
1/7/2016	3.0 K
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0
7/15/2016	3.0 K
8/11/2016	3.0 K
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	3.0

Station: 93A ***Depth:*** S

Geo Mean (YR):	3.4
Est 90th (YR):	6.3
# Samples (YR):	44
0.0% >	***31***
ShellClass:	R

Date	***Results***
4/13/2012	10.0
6/19/2012	3.0 K
9/4/2012	3.0 K
9/11/2012	3.0 K
9/20/2012	3.0 K
4/11/2013	3.0 K
5/2/2013	3.0 K
5/24/2013	3.0 K
6/17/2013	7.0
8/21/2013	3.0 K
9/5/2013	3.0 K
9/23/2013	3.0 K
10/17/2013	3.0 K
12/2/2013	20.0
12/26/2013	27.0
3/31/2014	3.0 K
5/30/2014	3.0 K
7/2/2014	3.0 K
7/11/2014	3.0
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0 K
6/22/2015	3.0
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	3.0 K
12/21/2015	3.0 K
1/7/2016	3.0 K
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0 K
7/15/2016	3.0
8/11/2016	3.0 K
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	3.0 K

Report Area: NE1

Station: 97A ***Depth:*** S

Geo Mean (YR):	3.3
Est 90th (YR):	4.9
# Samples (YR):	44
0.0% >	***31***
ShellClass:	R

Date	***Results***
4/13/2012	3.0 K
6/19/2012	3.0 K
9/4/2012	3.0 K
9/11/2012	3.0 K
9/20/2012	3.0 K
4/11/2013	3.0 K
5/2/2013	3.0 K
5/24/2013	3.0 K
6/17/2013	10.0
8/21/2013	3.0 K
9/5/2013	3.0
9/23/2013	3.0 K
10/17/2013	3.0 K
12/2/2013	7.0
12/26/2013	10.0
3/31/2014	3.0 K
5/30/2014	3.0 K
7/2/2014	3.0 K
7/11/2014	3.0 K
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0 K
6/22/2015	3.0 K
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	3.0 K
12/21/2015	7.0
1/7/2016	3.0 K
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0
7/15/2016	3.0 K
8/11/2016	3.0 K
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	3.0

Station: 97B ***Depth:*** S

Geo Mean (YR):	3.3
Est 90th (YR):	5.0
# Samples (YR):	44
0.0% >	***31***
ShellClass:	R

Date	***Results***
4/13/2012	3.0
6/19/2012	3.0 K
9/4/2012	3.0 K
9/11/2012	3.0 K
9/20/2012	3.0 K
4/11/2013	3.0 K
5/2/2013	3.0 K
5/24/2013	3.0 K
6/17/2013	7.0
8/21/2013	3.0 K
9/5/2013	3.0 K
9/23/2013	3.0 K
10/17/2013	3.0 K
12/2/2013	13.0
12/26/2013	13.0
3/31/2014	3.0 K
5/30/2014	3.0 K
7/2/2014	3.0 K
7/11/2014	3.0 K
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0
6/22/2015	3.0 K
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	3.0 K
12/21/2015	3.0
1/7/2016	3.0 K
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0 K
7/15/2016	3.0 K
8/11/2016	3.0 K
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	3.0

Station: 98 ***Depth:*** S

Geo Mean (YR):	6.9
Est 90th (YR):	33.0
# Samples (YR):	44
18.2% >	***31***
ShellClass:	R

Date	***Results***
4/13/2012	3.0 K
6/19/2012	7.0
9/4/2012	20.0
9/11/2012	3.0
9/20/2012	13.0
4/11/2013	3.0 K
5/2/2013	3.0
5/24/2013	20.0
6/17/2013	70.0
8/21/2013	87.0
9/5/2013	7.0
9/23/2013	87.0
10/17/2013	10.0
12/2/2013	50.0
12/26/2013	3.0
3/31/2014	27.0
5/30/2014	3.0 K
7/2/2014	3.0 K
7/11/2014	3.0 K
7/22/2014	33.0
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	120.0
6/22/2015	3.0
8/6/2015	3.0
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0
12/9/2015	3.0 K
12/21/2015	3.0
1/7/2016	7.0
3/24/2016	3.0
4/11/2016	3.0 K
5/11/2016	10.0
5/25/2016	3.0 K
7/15/2016	3.0 K
8/11/2016	3.0
8/24/2016	43.0
10/20/2016	3.0 K
12/7/2016	57.0

Station: 98A ***Depth:*** S

Geo Mean (YR):	3.8
Est 90th (YR):	8.6
# Samples (YR):	44
2.3% >	***31***
ShellClass:	R

Date	***Results***
4/13/2012	3.0
6/19/2012	3.0 K
9/4/2012	3.0
9/11/2012	17.0
9/20/2012	3.0 K
4/11/2013	3.0 K
5/2/2013	3.0 K
5/24/2013	3.0 K
6/17/2013	13.0
8/21/2013	3.0 K
9/5/2013	3.0 K
9/23/2013	10.0
10/17/2013	3.0
12/2/2013	20.0
12/26/2013	7.0
3/31/2014	3.0 K
5/30/2014	3.0 K
7/2/2014	3.0 K
7/11/2014	50.0
7/22/2014	3.0 K
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0
5/7/2015	3.0 K
5/19/2015	7.0
6/22/2015	3.0 K
8/6/2015	3.0
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0
12/9/2015	3.0
12/21/2015	3.0
1/7/2016	3.0 K
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0 K
7/15/2016	3.0 K
8/11/2016	3.0
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	3.0 K

Station: KP1 ***Depth:*** S

Geo Mean (YR):	11.5
Est 90th (YR):	66.5
# Samples (YR):	44
22.7% >	***31***
ShellClass:	P

Date	***Results***
4/13/2012	7.0
6/19/2012	17.0
9/4/2012	160.0
9/11/2012	17.0
9/20/2012	140.0
4/11/2013	33.0
5/2/2013	3.0 K
5/24/2013	10.0
6/17/2013	77.0
8/21/2013	3.0
8/29/2013	3.0 K
9/26/2013	3.0 K
10/17/2013	23.0
12/2/2013	60.0
12/26/2013	43.0
3/31/2014	260.0
5/30/2014	17.0
7/2/2014	3.0
7/14/2014	10.0
7/22/2014	7.0
7/30/2014	3.0
8/27/2014	3.0 K
9/15/2014	7.0
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	17.0
5/19/2015	3.0
6/22/2015	23.0
8/6/2015	13.0
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	17.0
12/9/2015	3.0 K
12/21/2015	23.0
1/7/2016	3.0 K
3/24/2016	3.0
4/11/2016	3.0 K
5/11/2016	7.0
5/25/2016	30.0
7/15/2016	37.0
8/11/2016	320.0
8/24/2016	3.0 K
10/20/2016	10.0
12/7/2016	43.0

Report Area: NE1

Station: KP2 **Depth:** S

Geo Mean (YR):	6.5
Est 90th (YR):	34.3
# Samples (YR):	44
18.2% >	***31***
ShellClass:	P

Date	Results
4/13/2012	3.0 K
6/19/2012	3.0
9/4/2012	210.0
9/11/2012	3.0
9/20/2012	33.0
4/11/2013	20.0
5/2/2013	3.0 K
5/24/2013	7.0
6/17/2013	61.0
8/21/2013	3.0 K
8/29/2013	3.0 K
9/26/2013	3.0 K
10/17/2013	10.0
12/2/2013	93.0
12/26/2013	47.0
3/31/2014	270.0 L
5/30/2014	7.0
7/2/2014	3.0
7/14/2014	3.0 K
7/22/2014	3.0
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0 K
5/19/2015	3.0 K
6/22/2015	3.0
8/6/2015	3.0 K
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	7.0
12/21/2015	57.0
1/7/2016	3.0 K
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0 K
5/25/2016	3.0 K
7/15/2016	10.0
8/11/2016	10.0
8/24/2016	3.0 K
10/20/2016	3.0
12/7/2016	47.0

Station: KP3 **Depth:** S

Geo Mean (YR):	6.0
Est 90th (YR):	27.0
# Samples (YR):	44
11.4% >	***31***
ShellClass:	P

Date	Results
4/13/2012	7.0
6/19/2012	3.0 K
9/4/2012	50.0
9/11/2012	3.0 K
9/20/2012	30.0
4/11/2013	17.0
5/2/2013	3.0 K
5/24/2013	10.0
6/17/2013	63.0
8/21/2013	3.0 K
8/29/2013	80.0
9/26/2013	3.0 K
10/17/2013	3.0
12/2/2013	63.0
12/26/2013	30.0
3/31/2014	270.0 L
5/30/2014	3.0 K
7/2/2014	3.0 K
7/14/2014	7.0
7/22/2014	3.0
7/30/2014	3.0 K
8/27/2014	3.0 K
9/15/2014	3.0 K
9/29/2014	3.0 K
5/4/2015	3.0 K
5/7/2015	3.0
5/19/2015	3.0 K
6/22/2015	3.0
8/6/2015	3.0
8/18/2015	3.0 K
8/31/2015	3.0 K
9/8/2015	3.0 K
12/9/2015	13.0
12/21/2015	17.0
1/7/2016	3.0 K
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	3.0
5/25/2016	3.0 K
7/15/2016	3.0
8/11/2016	10.0
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	3.0

Station: KP4 **Depth:** S

Geo Mean (YR):	7.8
Est 90th (YR):	31.6
# Samples (YR):	44
11.4% >	***31***
ShellClass:	P

Date	Results
4/13/2012	3.0
6/19/2012	3.0 K
9/4/2012	140.0
9/11/2012	7.0
9/20/2012	3.0
4/11/2013	17.0
5/2/2013	10.0
5/24/2013	13.0
6/17/2013	43.0
8/21/2013	17.0
8/29/2013	10.0
9/26/2013	3.0
10/17/2013	3.0
12/2/2013	57.0
12/26/2013	30.0
3/31/2014	63.0
5/30/2014	13.0
7/2/2014	3.0 K
7/14/2014	30.0
7/22/2014	7.0
7/30/2014	3.0 K
8/27/2014	3.0
9/15/2014	7.0
9/29/2014	7.0
5/4/2015	7.0
5/7/2015	10.0
5/19/2015	110.0
6/22/2015	7.0
8/6/2015	3.0
8/18/2015	3.0 K
8/31/2015	3.0
9/8/2015	10.0
12/9/2015	3.0 K
12/21/2015	27.0
1/7/2016	7.0
3/24/2016	3.0 K
4/11/2016	3.0 K
5/11/2016	10.0
5/25/2016	3.0 K
7/15/2016	7.0
8/11/2016	3.0 K
8/24/2016	3.0 K
10/20/2016	3.0 K
12/7/2016	3.0 K