



New Jersey Department of Environmental Protection
Water Resource Management
Division of Water Monitoring and Standards

COOPERATIVE COASTAL MONITORING PROGRAM

2020 Summary Report



March 2021

COOPERATIVE COASTAL MONITORING PROGRAM

2020 Summary Report

New Jersey Department of Environmental Protection

Water Resource Management

Division of Water Monitoring and Standards

Bruce S. Friedman, Director

Bureau of Environmental Analysis, Restoration and Standards

Kimberly Cenno, Bureau Chief

Yaso Sivaganesh, Section Chief

March 2021

Report prepared by:

Sheri Shifren, Program Manager

Emmalee Carr, Assistant Program Manager

Rachel White, Assistant Program Manager

Table of Contents:

Introduction	1
Cooperative Coastal Monitoring Program Procedures	1
2020 Results and Discussion	4
Ocean Summary	5
Bay Summary	6
River Summary	7
Seasonal Geographic Mean	9
Beaches and Rainfall	9
DEP Actions	11
Supporting Programs	12
Appendix 1	18

New Jersey Cooperative Coastal Monitoring Program
2020 Annual Summary Report

Introduction:

The Cooperative Coastal Monitoring Program (CCMP) is New Jersey’s Beach Monitoring Program administered by the New Jersey Department of Environmental Protection’s (DEP) Division of Water Monitoring and Standards, Bureau of Environmental Analysis, Restoration and Standards with participation from the New Jersey Department of Health and local health agencies (Table 1). Beaches along the New Jersey shoreline are a hallmark of the summer season in New Jersey, and as such, the DEP prioritizes health and safety at our beaches so residents and tourists may enjoy them to their fullest extent. New Jersey’s CCMP Program was established in 1974, in response to the federal Clean Water Act (CWA), to assess coastal water quality at recreational bathing beaches, communicate results to the public and investigate sources of water pollution to protect public health and safety. The DEP designs the beach sampling and administers the communication, notification, and response responsibilities of the CCMP. Agencies that participate in the CCMP perform sanitary surveys of recreational bathing beaches and collect samples of nearshore ocean and estuarine waters to assess the acceptability of these waters for recreational bathing. During the off-season, the DEP develops guidance and protocol documents as well as identification and prioritization of areas for pollutant source tracking.

In 1993, the New Jersey Coastal Protection Trust Fund was created to generate funding to support clean water programs, including the CCMP, through the sale of the “Shore to Please” dedicated specialty license plate. This dedicated license plate can be ordered from the NJ Motor Vehicle Commission’s website. Additional information about this may be found under the Clean Shores program section of this report. The CCMP can receive up to \$65,000 based on annual license plate sale revenue.

On October 10, 2000, the federal Beaches Environmental Assessment and Coastal Health (BEACH) Act was signed which gave the Environmental Protection Agency (EPA) the authority to award grants to develop and implement beach monitoring and assessment programs. The DEP has been awarded BEACH Development and Implementation grants every year since 2001. These funds are primarily passed through from the DEP to the four primary county agencies (Table 1) to implement the Program on the local level and to collect and analyze ocean and bay water samples.

Table 1: List of Local Health Agency Partners

Primary County Agencies:	Auxiliary Local Agencies:
Cape May County Health Department	Atlantic City Health Department
Atlantic County Division of Public Health	Long Beach Island Health Department
Ocean County Health Department	Long Branch Health Department
Monmouth County Health Department	Middletown Township Board of Health
	Monmouth County Regional Health Commission

Cooperative Coastal Monitoring Program Procedures:

Water quality is monitored to protect the health and safety of recreational bathers from elevated levels of bacteria and to develop long term water quality trends. The CCMP uses sampling methods and protocols for beach openings and closures in accordance with the New Jersey State Sanitary Code, Chapter IX – Public Recreational Bathing, [N.J.A.C 8:26](#) and the [DEP’s Field Sampling](#)

New Jersey Cooperative Coastal Monitoring Program
2020 Annual Summary Report

[Procedures Manual](#). Local health agencies organize and perform routine weekly sampling at all primary beach monitoring stations generally from middle of May through Labor Day.

Primary monitoring stations are selected to be representative of recreational water quality and ensure adequate spatial coverage. All lifeguarded river and bay recreational bathing beaches open to the public have their own monitoring stations because of their noncontiguous locations. Ocean monitoring station locations are selected based on possible impacts from a potential pollution source. If there are no potential pollution sources, locations are selected to represent the water quality at several lifeguarded beaches in a contiguous area of the coast. Monitoring station selections are completed by the participating health agencies annually, prior to May 1, and approved by the DEP.

In addition to primary stations, each beach has bracket stations that are sampled if an exceedance occurs at the primary station. Bay and river beaches have a bracket station located on each side of the primary station, approximately 150 feet away. Ocean beaches have three bracket stations spaced every 150 feet on each side of the primary station. Bay and river beaches have fewer bracket stations because these beaches are smaller and isolated. If a primary station has an exceedance, one bracket on each side of the primary station will be sampled along with a resampling of the primary station. Bracketing the station that exceeded the standard on both sides will continue until all resamples at stations associated with the primary station beach are within standard. Figure 1 illustrates an ocean beach station with north and south brackets. This configuration allows the DEP to understand the spatial extent and location of the problem thereby better protecting public health and safety.



Figure 1: Ocean Beach Station with North and South Brackets

New Jersey's recreational bathing water quality single-sample maximum standard is 104 Colony Forming Units (CFU) of Enterococci per 100mL of sample. Enterococcus is a genus of gram-positive bacteria that is found within the intestine of humans and other warm-blooded animals. It is a fecal indicator bacterium that is tolerant of a wide range of environmental conditions, including salt water, and more closely mimics many pathogens than other indicators. Enterococcus itself is generally not harmful but indicates the possible presence of pathogenic (disease-causing) bacteria, viruses, and protozoans that also live in human and animal digestive systems. Therefore, swimming in water exceeding the standard poses an increased risk of illness, such as gastroenteritis, low grade fevers and infections.

New Jersey Cooperative Coastal Monitoring Program 2020 Annual Summary Report

Ocean, bay, and river monitoring officially begins at all public recreational beaches two weeks prior to opening for recreational bathing. Preseason water quality monitoring is required to determine if changes occurred during the off-season that might impact water quality. Preseason water quality exceedances follow the same monitoring protocol as in-season; resamples of primary stations and brackets are collected and sanitary surveys are performed daily until results are within the recreational bathing standard. Preseason exceedances don't result in advisories or closures, since the beach is not yet open; however, physical warning signs are posted at the beach when preseason sampling results are above the recreational bathing standard.

Samples are collected on Monday mornings, except if it is a holiday in which case the monitoring is conducted on Tuesday. Sampling may also be delayed in the event of rough surf conditions posing a danger to samplers. Water samples are analyzed for Enterococci by DEP-certified laboratories using EPA Method 1600. Analysis takes 24 hours from the time the laboratory receives the sample. Counties submit and verify water quality monitoring data to the DEP through DEP's web-based Beach Monitoring System. The system automatically determines if an exceedance has occurred at a beach and generates beach action notifications (advisories/closures) for beaches that have opened for the season. If a sample exceeds the standard, then an advisory is posted on <https://njbeaches.org/> and on signs at the beach. The primary station is resampled, bracket stations alongside the primary station are sampled, and a mandatory sanitary survey of that beach is performed by a certified health inspector.

The advisory alerts the public to the exceedance of the water quality recreational bathing standard and warns of increased risk of illness by entering the water. Beaches under advisory remain open while additional samples are collected. Resamples are always performed in conjunction with a sanitary survey, which identifies possible pollution sources and observes water and shoreline conditions. If any of the primary or bracket station samples exceed the standard for a second consecutive day, the beach will be closed to primary contact recreation. Primary contact recreation is defined as recreational activities that involve significant ingestion risks and includes, but is not limited to, wading, swimming, diving, and surfing. However, the public may use the beach for such activities as sunbathing, picnicking, building sandcastles, etc. without entering the water. During a closure, resamples are collected daily at the station(s) that exceeded the standard and the bracket stations until all resamples are within the recreational bathing standard.

Throughout the recreational bathing season, local, county, and State agencies have the authority to temporarily close beaches within their jurisdiction for reasons that may impact water quality or the safety of the public, such as a pollution incident (e.g., sanitary sewage overflow) or floatable debris washup. Beaches may also be closed as a precaution for other non-water quality related reasons typically related to large storm events, rough surf, rip currents or infrastructure issues such as construction, dredging and beach replenishment.

Throughout the year, DEP evaluates water quality results to prioritize areas where pollution is a concern. Source track down studies are implemented to find potential pollution sources and assist responsible entities in correcting the problem. During the beach season, DEP also evaluates the geometric mean (geomean) at each primary beach monitoring location, using data collected over the most recent 30-day period, with a minimum of five samples. The State of New Jersey's recreational bathing water quality geomean standard is 30 CFU of Enterococci per 100 mL of sample. The geomean is used to identify recreational bathing beaches with low-level, but persistent water quality issues. If a

New Jersey Cooperative Coastal Monitoring Program 2020 Annual Summary Report

beach exceeds the geomean during the season without exceeding the single sample maximum, a sanitary survey is required to identify possible pollution sources and observe water and shoreline conditions. Once the season has concluded, a seasonal geomean is calculated for every beach using all primary station data collected during the season. The seasonal geomean calculations aid in the prioritization of resources for pollution source tracking efforts. All beach water quality monitoring data is uploaded into EPA's Water Quality Portal and all notification data is uploaded into EPA's PRAWN database at the end of each beach season.

NJ's Beach Monitoring Program information can be found at <https://njbeaches.org/> including an interactive map that displays sampling locations, current beach status and water quality results. In addition, historical beach water quality, beach closing and advisory data can be downloaded from this site. Coastal surveillance flight reports are updated daily along with flight path and chlorophyll levels and are made available via the beach website. Reports and other news regarding NJ's coastal recreational bathing beaches are also posted on the website. The Program has a social media presence and the public can follow on twitter @NJBeachReport for daily beach tweets throughout the beach season.

2020 Results and Discussion:

In 2020, the CCMP monitored water quality at 214 primary monitoring stations: 188 ocean stations, 18 bay stations, and 8 river stations. Typically, there are not many changes to monitoring station locations from year to year. In 2019, there were 215 primary monitoring stations. In 2020, that was reduced to 214 because of the closure of Reese Ave, bay beach located in Lavallette; Ocean County mid-season due to county construction.

Memorial Day is generally the first weekend that beaches open for the summer in New Jersey. In 2020, the first samples of the season were collected on May 11 to ensure adequate time for preseason sampling of all beaches that were opening Memorial Day weekend. However, due to the COVID 19 pandemic and uncertainty if beaches could open for the season, the Department of Health and DEP worked together to allow for preseason monitoring flexibility. Since long term data existed for all 214 beaches which demonstrated water quality trends over time, beaches were able to open with a single preseason sample within the water quality standard if collected within two weeks before beach opening. However, many of the local health authority partners conducted the normal two-week preseason sampling. Additionally, and as required by the New Jersey State Sanitary Code, Chapter IX – Public Recreational Bathing, beach owners and operators were required to conduct preoperational checklists which include inspections of the beach and submittal to the local health authority for approval to operate.

One hundred fifty-two beaches opened on Memorial Day: 145 ocean beaches, 4 bay beaches, and 3 river beaches. Beaches continued to open through the next month with the last beaches opening by June 30. All beaches remained open through Labor Day weekend. Beaches began closing on the Tuesday after Labor Day and all beaches were closed for the season by October 1.

In total, 3,950 ocean, bay, and river water quality samples were collected during the 2020 recreational beach bathing season. Beach water quality results, advisories, beach closures and reason for the beach closures were posted on the DEP's webpage <https://njbeaches.org/> daily. Additionally, signs were posted at the beaches during advisories or closures. Signs remained posted until the advisories or closures were lifted.

New Jersey Cooperative Coastal Monitoring Program
2020 Annual Summary Report

Ocean Summary:

In 2020, 3,384 water quality samples were collected and analyzed from 188 ocean monitoring stations (Figure 2). These monitoring stations make up 88% of all monitoring stations in the program. There was a total of 14 advisories however, none of the advisories resulted in an actual closure at these ocean stations. Three events resulted in 15 precautionary closures at seven beaches, all three in Monmouth county: two events occurred at the four beaches adjacent to the Wreck Pond outfall and the other when a sanitary sewer line broke in the Village of Loch Arbour on June 6th. Three beaches were closed for a day as a precaution while the extent of the impact was investigated. Refer to Table 2 for all ocean beach actions.

The DEP and Monmouth County Health Department have worked in partnership for years to manage and mitigate water quality issues associated with Wreck Pond. The Spring Lake Borough's Wreck Pond Outfall Operation and Maintenance Plan, which was approved by DEP, outlines policies for the two outfalls and corresponding tidal gates which allow the pond and ocean to have an open connection. The Plan states that the knife gate on the concrete culvert outfall will remain closed during the beach season to prevent potential pollution sources impacting the four adjacent recreational bathing beaches (Beacon Blvd and the Terrace in the Borough of Sea Girt, and Brown Ave S and York Ave in Spring Lake Borough). During the recreational bathing season, it is only permissible to open the knife gate under emergency conditions where imminent flooding of the surrounding area may occur. During emergency conditions, when the knife gate is open, the four ocean beaches adjacent to Wreck Pond are closed as a precaution. The Plan states that these beaches shall remain closed until the emergency conditions subside and the knife gate has been shut for 24 hours. In 2020, two events required the Wreck Pond knife gate to open which resulted in a one-day closure on June 6th and a two-day closure beginning on July 10 and ending on July 11 at the four adjacent beaches: Beacon Blvd and the Terrace in the Borough of Sea Girt, and Brown Ave S and York Ave in Spring Lake Borough, Monmouth County.

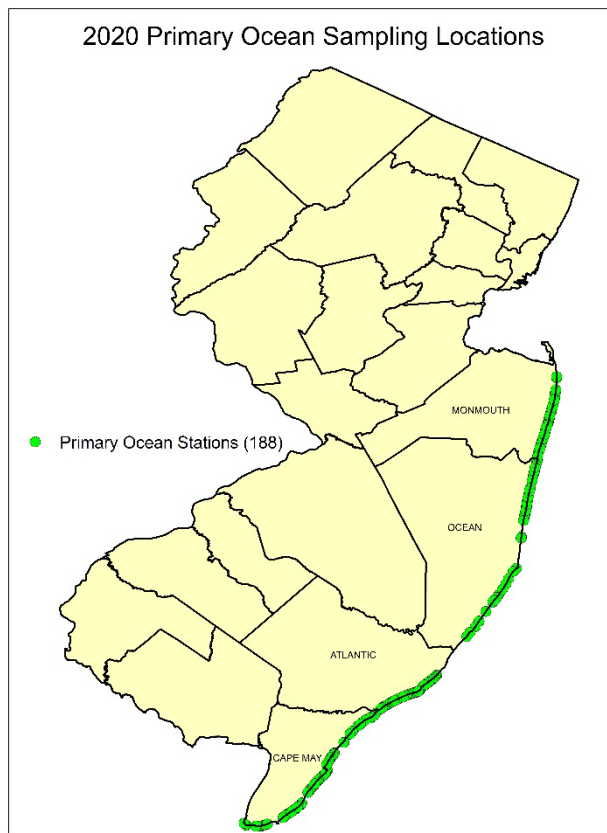


Figure 2: 2020 Primary Ocean Sampling Locations

On June 6th the DEP was alerted to a sanitary sewer line break on Page Avenue in the Village of Loch Arbour, Monmouth County. As a result of the line break, waste entered a storm drain that discharges to Deal Lake which drains into the ocean. Three adjacent ocean beaches were closed as a

New Jersey Cooperative Coastal Monitoring Program
2020 Annual Summary Report

precaution: Village Beach Club in the Village of Loch Arbor, Cedar in the Borough of Allenhurst, and 7th Ave in the City of Asbury Park while the extent of the impact was investigated. Water quality samples were taken at all three beaches and all results were within the recreational bathing standard. The Township of Ocean Sewerage Authority repaired the line and the beaches were able to open the following day.

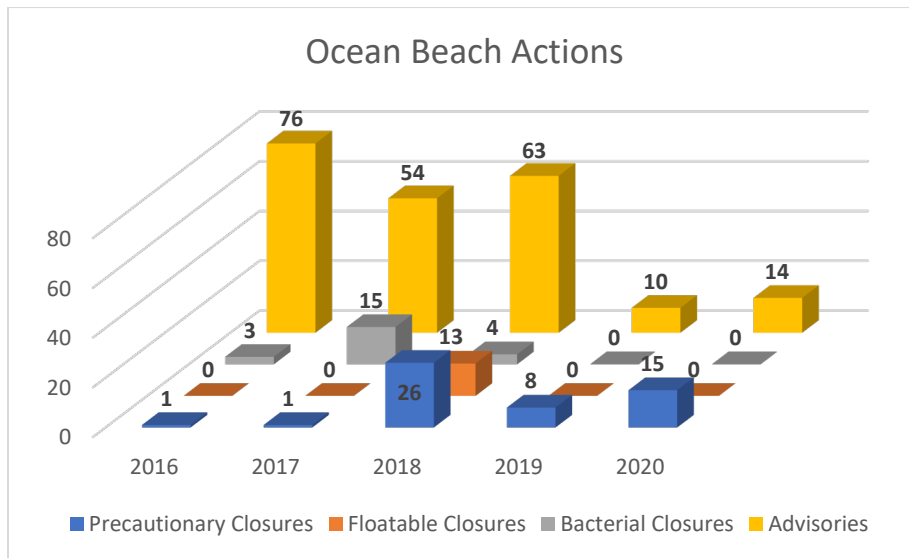


Figure 3: Ocean Beach Actions

Bay Summary:

New Jersey’s coast has an extensive bay system. In 2020, a total of 325 samples were collected and analyzed from 18 primary sampling (Figure 4) stations, representing 8% of the 2020 CCMP monitoring network. Back bay systems are inland to barrier islands, home to important wetlands, receive riverine flows and have a connection to the ocean with various degree of mixing depending on the waters proximity to the inlet. Many back-bay locations have higher residence times, meaning that it takes longer for the water to be exchanged with ocean water. Most of New Jersey’s bay beaches are in Barnegat Bay, however every participating county in the Program has at least one bay beach and corresponding monitoring station. The bay monitoring locations outside of Barnegat Bay are in Great Egg Harbor Bay, Absecon Bay, Sandy Hook Bay, and the Raritan Bay.

There were 11 advisories and 13 closures of bay beaches in 2020. 12 of the 13 closures occurred at 5th Ave Bay Front Beach in the Borough of Seaside Park in Ocean

2020 Primary Bay Sampling Locations

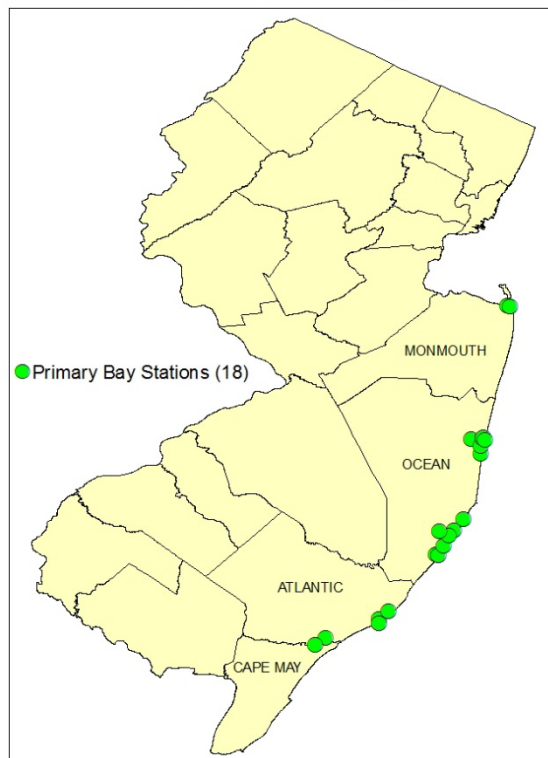


Figure 4: 2020 Primary Bay Sampling Locations

New Jersey Cooperative Coastal Monitoring Program
2020 Annual Summary Report

County beginning on August 26th. As a result, DEP and the Ocean County Health Department conducted extensive pollution source tracking including antibiotic resistance testing to determine the source of bacteria. Antibiotic resistance results indicated that the likely source was wildlife. Staff noticed standing water in the streets, an abundance of eel grass in the water, and birds in the area. To help with the standing water and improve the quality of stormwater runoff, Ocean County Roads Department cleaned the local storm sewer system. The beach reopened on September 8th and closed for the season the following week; source tracking efforts are ongoing. Refer to Figure 5 for all bay beach actions.

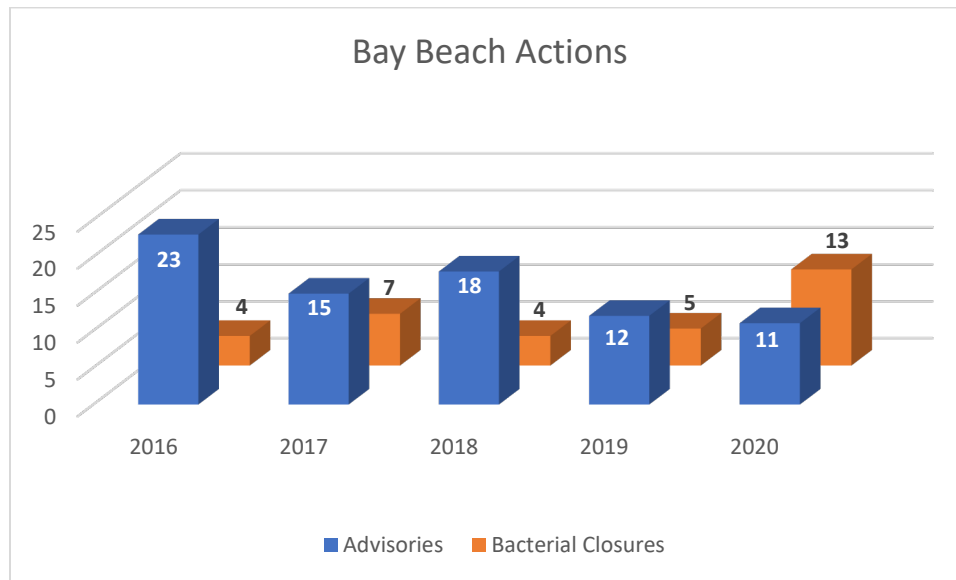


Figure 5: Bay Beach Actions

River Summary:

4% of CCMP monitoring locations are within riverine systems. All eight river beaches that are included in the CCMP are tidally influenced (Figure 6). Tide has a significant effect on flushing and residence time of riverine waters. Typically, it takes longer for flushing to occur in riverine systems. In 2020, 241 river water quality samples were collected and analyzed in the CCMP. Of the eight river beaches, seven are located within the Barnegat Bay Watershed in Ocean County: four are on the Toms River, one is on the Metedeconk River and two are within the Manasquan River. The other river monitoring station is in the Shark River, Monmouth County.

In 2020, there were 12 advisories and 13 closures on river beaches. All closures were at Beachwood Beach West in the Borough of Beachwood and Windward Beach in the

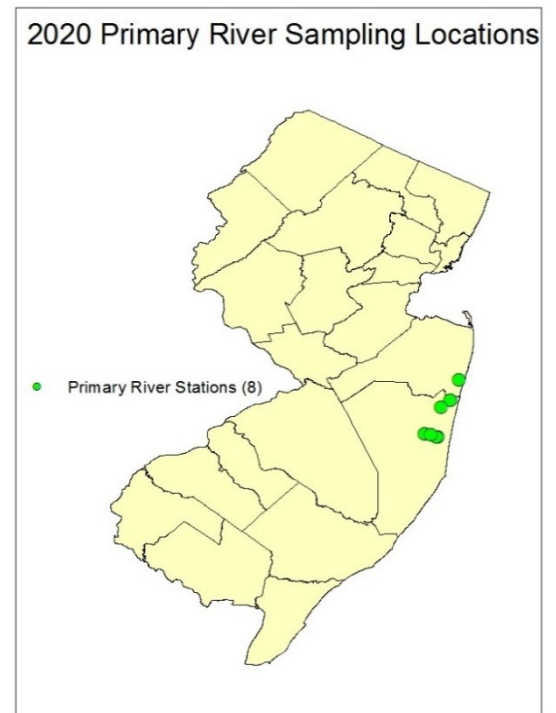


Figure 6: 2020 Primary River Stations

New Jersey Cooperative Coastal Monitoring Program
2020 Annual Summary Report

Township of Brick, both located in Ocean County. Beachwood Beach West is on Toms River and Windward Beach is located on the Metedeconk River. Refer to Figure 7 for all river beach actions.

On July 7th, after exceeding the recreational bathing standard for 9 days total and 7 consecutive days, Ocean County Health Department and the Borough of Beachwood volunteered to close the beach to conduct pollution source tracking and extensive sampling in the area. Windward Beach experienced exceedances of the recreational bathing standard for five separate weeks in a seven week period, for a total of 11 exceedances at which time Ocean County Health Department and the Township of Brick voluntarily closed the beach to conduct pollution source tracking and extensive sampling in the area. Often river closures are due to nonpoint source pollution and storm water impacts resulting from rainfall (see the [Beaches and Rainfall section](#) below). However, this year, exceedances were also seen during dry weather, and may be linked to high tides and elevated river levels. When storm sewer systems are inundated with river water during high tides, non point source pollution such as pet and wildlife waste discharge from the system when it drains during the outgoing tide. In addition, pollution sources tend to linger at river beaches due to long residence times, currents, wind, and geographical features. Therefore, it is not uncommon for advisories to result in closures that can last several days. There are currently efforts underway to identify pollution sources and potential fixes through track-down studies within the Toms River and Metedeconk River.

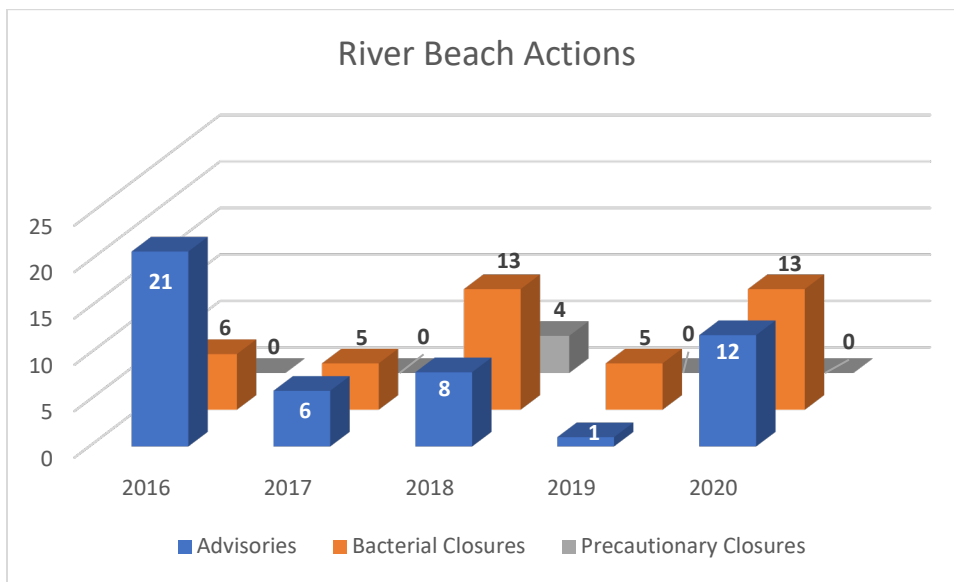


Figure 8: River Beach Actions

2020 Seasonal Geomean Map

Seasonal Geometric Mean:

The DEP utilizes a seasonal geomean statistic to identify recreational bathing beaches with low-level, but persistent water quality issues. At the end of the bathing beach season, all water quality data are collected from each primary monitoring station and analyzed to calculate the seasonal geomean. The geomean water quality recreational bathing standard is 30 CFU of Enterococci per 100 mL of sample. In 2020, three river beaches and two bay beaches exceeded the standard (Figure 9). The river beaches that exceeded the standard were Windward Beach in the Township of Brick, Beachwood Beach West in the Borough of Beachwood and River in Point Pleasant Borough. The bay beaches that exceeded the standard were 5th Bay Front Beach in the Borough of Seaside Park and New Jersey in Long Beach Township. All geomean exceedances were in Ocean County. The DEP uses this information to strategically deploy resources for pollution source tracking work and uses a “find and fix”, no blame strategy for eliminating the source.

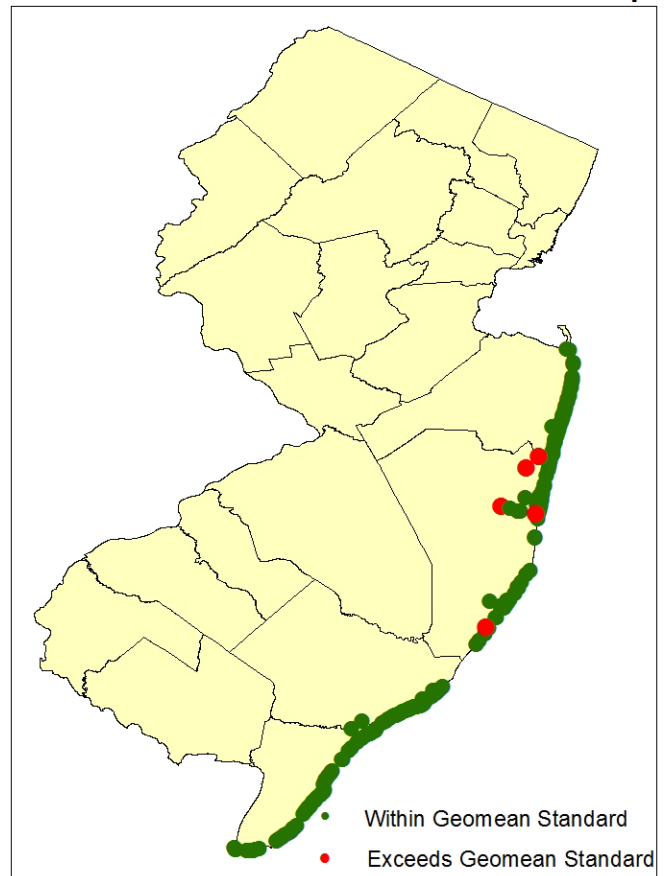


Figure 9: 2020 Seasonal Geomean Map

Beaches and Rainfall:

Rainfall and resulting stormwater runoff have a significant impact on water quality at public recreational beaches. The DEP works with National Oceanic and Atmospheric Administration (NOAA) and Rutgers University to compile and make available online rainfall data from the [National Weather Service’s Multi-sensor Precipitation Estimator](#). This sensor technology utilizes a combination of rain gauges and radar to estimate rainfall totals in near real-time for a 2.5-mile grid area matrix that blankets the state of NJ. During storm events, users can access the latest rain total estimates every 30 minutes after the hour. This rainfall data provides the DEP with another tool to assess the impact of rainfall on water quality and public health at New Jersey’s beaches.

As noted previously, monitoring stations are located at beaches with known potential pollution sources. Many of these pollution sources are stormwater outfalls that carry stormwater from our streets to oceans, bays and rivers. When it rains, water flows across the landscape over lawns, parking lots and streets. The water continues to travel along gutters, into catchment basins, through storm drainpipes and ditches, until finally arriving at stormwater outfall pipes that flow into local waterbodies (Figures 10 and 11). Along the way, stormwater can pick up trash (fast-food wrappers, cigarette butts, and plastic

New Jersey Cooperative Coastal Monitoring Program
2020 Annual Summary Report

waste), as well as toxic substances and other pollutants (gas, motor oil, antifreeze, fertilizers, pesticides, and pet/wildlife waste). Therefore, stormwater runoff has the potential to increase bacteria concentrations at recreational beaches near stormwater outfall pipes.



Figure 10: Stormwater Outfall Pipes in Atlantic City, Atlantic County

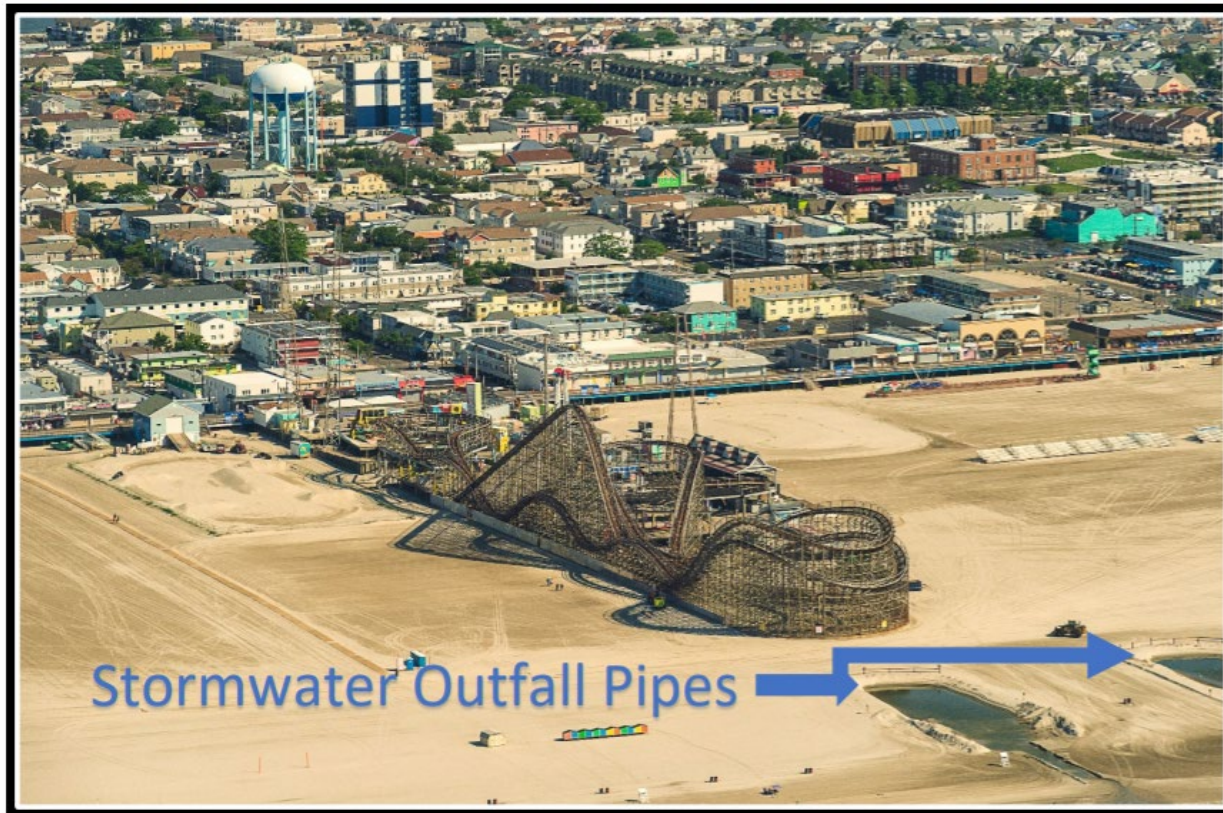


Figure 11: Stormwater Outfall Pipes in Wildwood, Cape May County

DEP Actions:

If the DEP identifies persistent water quality problems at a recreational bathing beach, the CCMP will implement a pollution source track down strategy in partnership with the Division of Water Monitoring and Standards' [Bureau of Marine Water Monitoring](#), the Department of Health, local health agency and municipality. Background information is collected beginning with a review of existing water quality results and supplemented with additional monitoring studies to address any data gaps. Results from the monitoring studies allow the DEP to understand the spatial extent of an issue and identify areas of concern so resources can be directed efficiently. Additional investigation of infrastructure using techniques such as video surveillance and dye testing may be necessary. This strategy allows the responsible entity to locate problems and fix them. When infrastructure repair or replacement is necessary, additional funding is typically required.

The DEP encourages municipalities and counties to apply to the [New Jersey Water Bank](#) to repair and replace problematic and antiquated infrastructure. The Water Bank Program currently offers 50% principal forgiveness for capital improvement projects that will eliminate, prevent, or reduce occurrences of beach closings due to the presence of pathogens. Funding may be awarded to projects that would eliminate potential sources such as leaking or broken sanitary sewers and illegal cross connections between storm sewers and sanitary sewers.

New Jersey Cooperative Coastal Monitoring Program
2020 Annual Summary Report

Supporting Programs:

Water Compliance and Enforcement:

As part of the CCMP, the DEP’s Division of Water Compliance and Enforcement inspects 17 wastewater treatment facilities that discharge to the ocean (Appendix 1) three times a season. The inspections take place the week before each of the three summer holidays: Memorial Day, Independence Day and Labor Day.

Aerial Surveillance:

The CCMP partners with the NJ Forest Fire Service to perform coastal surveillance flights in their Cessna Fixed Wing Aircraft (Figure 12). Flights are conducted six days a week during beach season, weather permitting. During the flight, a pilot and trained DEP staff observe wastewater treatment plant discharges and any changing coastal water and beach conditions. In addition, one day a week the flight path is extended to several lakes as part of the DEP’s Harmful Algal Blooms (HABs) response strategy. The Aerial Surveillance Program is also funded by the “Shore to Please” license plate sales. The pilot and staff on the surveillance flights look for floatable debris, possible pollution sources, algal blooms or anything potentially harmful to bathers. However, this year, due to the pandemic, observers were not able to fly with the pilot as COVID precaution.



Figure 12: NJ Forest Fire Service Cessna Fixed Wing

Coastal surveillance flights cover the Raritan Bay, Lower New York Bay, and the Atlantic coast

New Jersey Cooperative Coastal Monitoring Program
2020 Annual Summary Report

from Sandy Hook to Little Egg Inlet six days a week. Flights on Thursdays and Sundays are extended to include the area from Little Egg Inlet to Cape May Point and up Delaware Bay. Flights on Tuesdays are extended to typically include the following inland lakes: Round Valley Reservoir, Spruce Run Reservoir, Budd Lake, Lake Musconetcong, Lake Hopatcong, Lake Mohawk, Greenwood Lake and Swartswood Lake.

Coastal flights began in the late 1980s. In 2007, the aircraft was equipped with a hyper-spectral sensor calibrated to estimate chlorophyll-a levels in coastal waters. High levels of chlorophyll-a are indicative of algal blooms. If an algal bloom is detected, samples are collected by either DEP staff or partnering local health agencies. Samples are analyzed to quantify and identify predominant algal species to determine if any species present are potentially harmful to humans and animals (see <https://www.nj.gov/dep/hab/for more information>). Figure 13 shows an example of chlorophyll-a levels collected on the short flight path flown on Mondays, Fridays and Saturdays. Figure 14 is an example of the long flight path flown on Thursdays and Sundays. Figure 15 is an example of the flight path that was added during the 2019 beach season, which included lakes and a short coastal flight which is flown on Tuesdays.



Figure 13: Short Coastal Flight Path



Figure 14: Long Coastal Flight Path

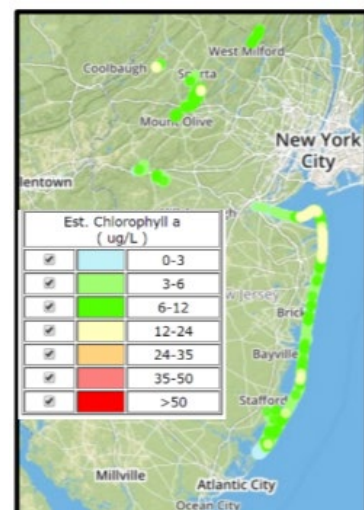


Figure 15: Short Flight Path Including Lakes

Flight reports are available daily at NJBEACHES.ORG. Coastal aerial surveillance statistics can be found in Table 6.

Table 2: 2020 Aerial Surveillance Statistics

Number of Scheduled Flights	120
Number of Flights Attempted	90
Number of Flights Completed	72
Number of Flights Canceled Due to Weather	30
Number of Flights Chlorophyll-a data was collected	68

New Jersey Cooperative Coastal Monitoring Program
2020 Annual Summary Report

Environmental Coastal Monitoring:

In 2020 the DEP implemented a new supplemental program to monitor water quality in areas where primary recreation occurs but is not regulated by the New Jersey State Sanitary Code as a Public Recreational Bathing Beach. The DEP recognizes that primary recreation may be occurring at areas other than regulated Public Recreational Bathing Beaches and therefore has begun Environmental Coastal Monitoring (ECM) to assess water quality at various additional locations. This program is also funded by the “Shore to Please” dedicated specialty license plate sales.

Although this monitoring program is not subject to the State Sanitary Code, it is still important to public health and safety to understand water quality conditions in these areas and communicating to the public water quality results. This monitoring program is run by DEP staff only.

The sampling plan devised by the DEP separates the coast into three regions: Northern, Central and Southern. The Northern region includes Middlesex and Monmouth counties, the Central region is Ocean county, and the Southern region includes Atlantic and Cape May counties. These regions are sampled on a rotating basis. Each monitoring location is sampled every three weeks. Locations that do not meet the recreational bathing standard are put under an advisory until additional sampling results are within the recreational bathing standard again. Results are available to the public at http://njdep.rutgers.edu/environmental_stations/.

There are 32 locations monitored, shown in Figure 13, that are part of the program: 24 bay stations, seven river stations, and one ocean station. In 2020, a total of 157 samples were collected and analyzed resulting in six advisories: three in Cape May County, two in Ocean County, and one in Monmouth County. The DEP will continue this supplemental program in 2021.

Clean Shores:

The DEP has partnered with the New Jersey Department of Corrections since 1989 to administer the Clean Shores program. Clean Shores is a year-round program that utilizes State inmate details to conduct daily clean-ups in tidally influenced waterways, such as back bays and beaches. Due to the ongoing pandemic, this program has not been able to utilize inmate details from the Department of Corrections. However, DEP staff have teamed up with partners such as Monmouth Clean Communities

2020 Environmental Coastal Monitoring Stations

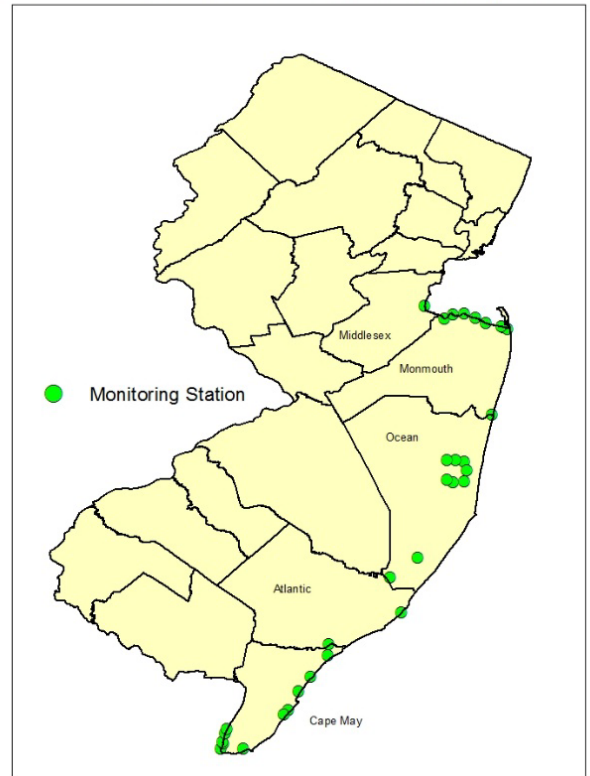


Figure 16: Environmental Coastal Monitoring Stations

New Jersey Cooperative Coastal Monitoring Program
2020 Annual Summary Report

and continues to conduct clean ups on a smaller scale. After the pandemic, when the inmate detail can rejoin operations, the program hopes to expand.

The program removes floatable debris like wood, litter, and plastic waste (Figure 17). Shorelines that are not regularly cleaned collect floatable debris and trash that is redispersed during coastal storms and extreme high tides. Removing this trash and debris prevents them from washing up on recreational bathing beaches, becoming floating hazards to navigation or impacting marine life. The partnership is mutually beneficial allowing the State to provide a needed service to municipalities and providing an opportunity for minimum security inmates to give back to the community in a meaningful way.

Additional information about this Program is available at <https://www.state.nj.us/dep/wms/bears/cleanshores.html>.



Figure 17: Clean Shores Detail Removing Wood, Debris, Trash, and Plastics on Sandy Hook

Figure 18 shows the municipalities that are eligible and the municipalities that currently participate. The DEP encourages all eligible municipalities to take advantage of the Clean Shores program. When the Program began in 1989, the State's shoreline had significant amount of debris and

New Jersey Cooperative Coastal Monitoring Program
2020 Annual Summary Report

litter, especially large wooden debris such as, pilings and docks. As a result, the Program did not cover significant mileage due to the enormous volume of debris collected, typically millions of pounds each year. Due to continued commitment to this Program, the density of trash found at the work sites has been reduced, which allows the Program to cover more coastal mileage.

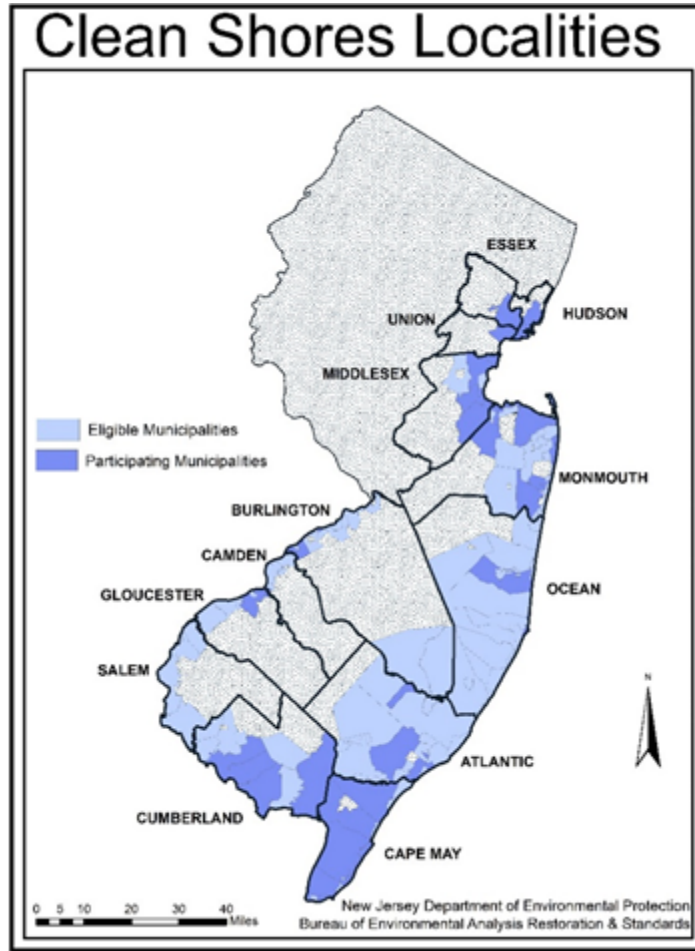


Figure 18: Eligible and Participating Clean Sores Municipalities

Between 1989 and 2020, more than 154 million pounds of debris have been removed, and 3,673 miles of New Jersey’s tidal shorelines have been cleaned and re-cleaned by the program. Funding for the Clean Shores program comes entirely from the revenue of the “Shore to Please” dedicated specialty license plate sales (Figure 19). During the 2018 and 2019 beach seasons, the DEP used an aerial banner to promote the sale of these specialty plates. The public’s support of the program through sales of the license plate will allow more municipalities to participate throughout the year and consequently, remove more debris from New Jersey’s shorelines. Please support this Program. Applications for the “Shore to Please” license plate can be found [here](#).

New Jersey Cooperative Coastal Monitoring Program
2020 Annual Summary Report



Figure 19: Keep an eye out for the banner plane advertising the Shore to Please License Plate during the summer months

New Jersey Cooperative Coastal Monitoring Program
2020 Annual Summary Report

Appendix 1:

Wastewater Treatment Facilities Discharging to the Nearshore Coastal Waters:

1. Monmouth County Bayshore Outfall Authority
2. Bayshore Regional Sewerage Authority
3. Township of Middletown Sewage Authority
4. Two Rivers Water Reclamation Authority
5. Long Branch Sewerage Authority
6. Township of Ocean Sewerage Authority
7. Asbury Park Sewer Utility
8. Neptune Township Sewerage Department
9. South Monmouth Regional Sewerage Authority
10. Ocean County Utilities Authority, Northern
11. Ocean County Utilities Authority, Central
12. Ocean County Utilities Authority, Southern
13. Atlantic County Utilities Authority
14. Cape May County Municipal Utilities Authority, Ocean City
15. Cape May County Municipal Utilities Authority, Seven Mile Middle
16. Cape May County Municipal Utilities Authority, Wildwood
17. Cape May County Municipal Utilities Authority, Cape May Point
18. Lower Township Municipal Utilities Authority