

Cooperative Coastal Monitoring Program

2022 Annual Summary Report



January 2023

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New Jersey Department of Environmental Protection

Water Resource Management

Division of Water Monitoring, Standards and Pesticides Control

Bureau of Environmental Analysis, Restoration and Standards

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Introduction:

The Cooperative Coastal Monitoring Program (CCMP) is part of New Jersey's Beach Monitoring Program administered by the New Jersey Department of Environmental Protection's (DEP) Division of Water Monitoring, Standards and Pesticide Control, Bureau of Environmental Analysis, Restoration and Standards with participation from the New Jersey Department of Health (DOH) and local health authorities (Table 1).

Beaches along the New Jersey shoreline are the number one tourist destination of the summer season in New Jersey, and as such, the DEP prioritizes their health and safety 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, provide public notification 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 for the CCMP. Local health authorities that participate in the CCMP perform sanitary surveys of coastal recreational bathing beaches and collect samples of nearshore ocean and estuarine waters to assess the acceptability of these waters for recreational bathing. During 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 vehicle license plate. This dedicated license plate can be ordered from the New Jersey Motor Vehicle Commission's website. Additional information about this may be found under the Clean Shores program section of this report. The CCMP may receive up to \$65,000 annually from the license plate sales revenue.

On October 10, 2000, the federal Beaches Environmental Assessment and Coastal Health (BEACH) Act was signed into law amending the CWA which gave the United States Environmental Protection Agency (EPA) the authority to award grants to develop and implement beach monitoring and assessment programs. The DEP has received BEACH Development and Implementation grants every year since 2001. These funds are passed through from the DEP to the four primary local health authorities (Table 1) to implement the Program on the local level and to collect and analyze ocean and estuarine water samples.

Table 1: List of Local Health Authority Partners

Primary Local Health Authorities:	Auxiliary Local Health Authorities:
Cape May County Health Department	Atlantic City Health Department
Atlantic County Division of Public Health	Gateway National Recreation Area
Ocean County Health Department	Long Beach Island Health Department
Monmouth County Health Department	Long Branch 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, advisories 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 Procedures Manual](#). Local health authorities organize and perform routine weekly sampling at all primary coastal recreational bathing beach monitoring stations beginning mid-May and continue until beaches close for swimming for the season.

Primary monitoring stations are selected to be representative of recreational water quality and ensure adequate spatial coverage. All public lifeguarded river and bay recreational bathing beaches have monitoring stations because of their noncontiguous locations. Ocean monitoring station locations are selected based on possible impacts from a potential pollution source. In the absence of 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 authorities annually, prior to May 1, and approved by the DEP. Each primary station has bracket stations that are sampled in the event of an exceedance of the standard 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 on each side of the primary station spaced 150 feet apart. 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(s) that exceed 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 three north and three 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 three North and three South Brackets

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New Jersey's recreational bathing beach water quality single-sample maximum standard is 104 Colony Forming Units (CFU) of Enterococci per 100 mL 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, and more closely mimics pathogens than other indicators in salt water. 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.

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 bracket stations 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, warning signs are posted at the beach to notify the public when preseason sample results are above the primary contact recreation standard. 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.

Samples are collected on Monday mornings. When a holiday falls on a Monday, samples are collected on Tuesday. Sampling may also be delayed when conditions pose a danger to samplers, such as rough surf or lightning. Water samples are analyzed for Enterococci by DEP-certified laboratories using EPA Method 1600-14. The analysis takes 24 hours. Local health authorities 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 swimming for the season. If the initial weekly sample exceeds the standard, then an advisory is posted on njbeaches.org and signs are posted at the beach. The primary station is resampled, bracket stations alongside the primary station are sampled, and a sanitary survey of that beach is performed by a certified health inspector.

The advisory alerts the public to the exceedance of the water quality primary contact recreation 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 or the sanitary survey indicates water quality problems, the beach will be closed to primary contact recreation. 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 bracket stations of exceedance stations until all resamples are within the primary

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contact recreation standard. See Figure 2 below for a beach sampling protocol flow chart.

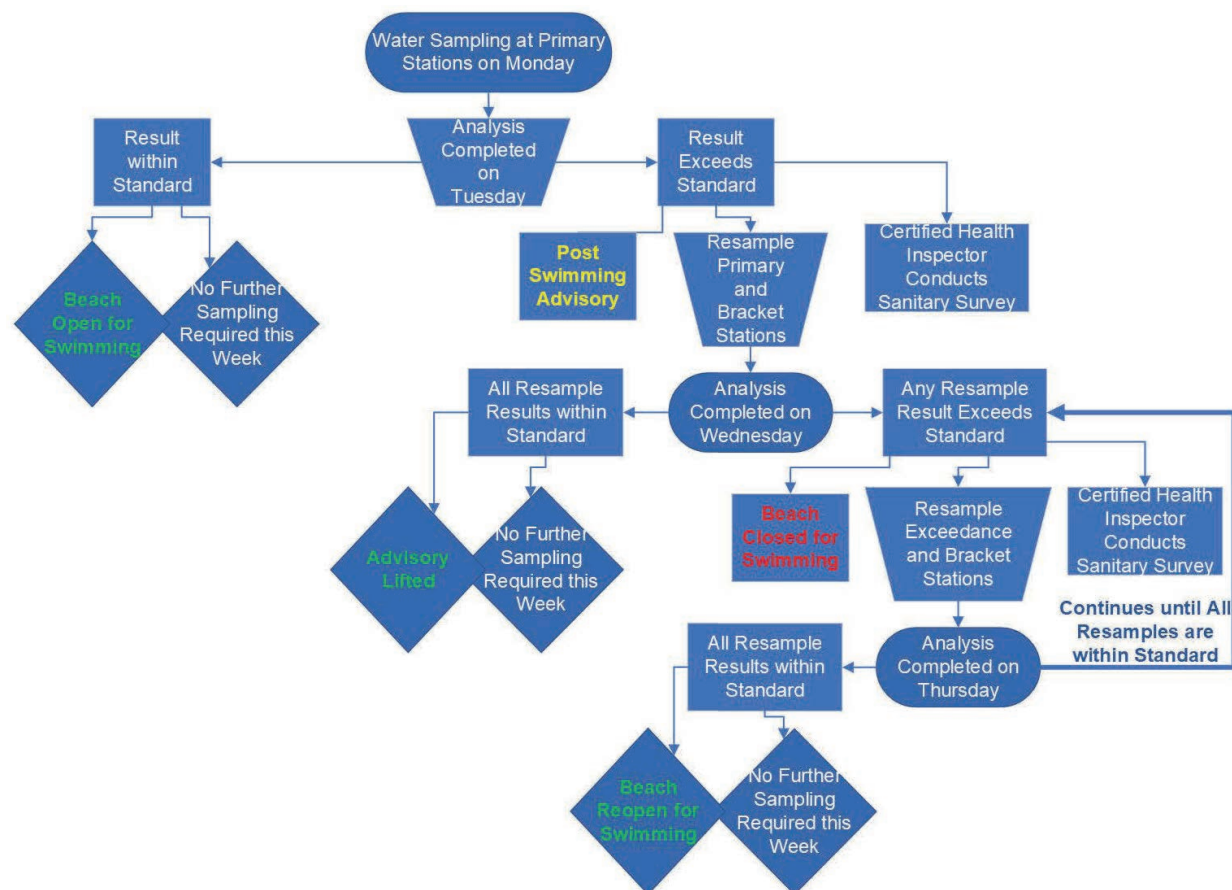


Figure 2: Beach Sampling Protocol Flow Chart

Throughout the beach 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, or beach replenishment.

Water quality data is evaluated by DEP to prioritize areas where pollution is a concern. Source track down studies are conducted to find potential pollution sources and assist responsible entities in correcting the problem. During the beach season, in addition to single sample results, 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 primary contact recreation water quality geomean standard is 30 CFU of Enterococci per 100 mL of sample. The geomean is used to identify beaches with low-level, but persistent water quality issues. If a beach exceeds the geomean standard during the season without exceeding the single sample maximum, a sanitary survey is required

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to identify possible pollution sources and observe water and shoreline conditions. Once the season has concluded, a seasonal geometric mean is calculated for every beach using all primary station data collected during the season. The seasonal geometric mean 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.

New Jersey's Beach Monitoring Program information can be found at 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 are available for download from this site. Coastal surveillance flight reports and remote sensing chlorophyll levels along the flight path are updated daily and made available via the beach website. Reports and other news regarding New Jersey's coastal recreational bathing beaches are also posted on the website. The Program has a social media presence that the public can follow on twitter @NJBeachReport for daily beach tweets throughout the beach season.

2022 Results and Discussion:

In 2022, the CCMP monitored water quality at 220 primary monitoring stations: 193 ocean, 20 bay, and 7 river stations. Generally, there are not many changes to monitoring locations from year to year. In 2021, there were 216 primary monitoring locations. In 2022, one additional ocean beach was added in Deal Borough, Monmouth County, and three bay beaches: one in Brigantine, Atlantic County, one in Avalon, Cape May County, and one in Berkeley Township, Ocean County. The net change of monitoring stations was an increase of four in 2022. All changes to monitoring locations were proposed by the local health authority and approved by DEP. Additionally, and as required by the New Jersey State Sanitary Code, Chapter IX – Public Recreational Bathing, beach owners and operators are required to complete preoperational checklists which include inspections of the beach and request approval from the local health authority to operate.

Generally, the New Jersey beach season opens for swimming on Memorial Day weekend. In 2022, the first samples of the season were collected on May 16 to facilitate beach-openings for Memorial Day weekend. 181 beaches opened for Memorial Day weekend: 171 ocean beaches, 7 bay beaches, and 3 river beaches. Beaches continued to open throughout June and all beaches were open by June 25. All beaches remained open through Labor Day. Beaches began to close the Tuesday after Labor Day and all beaches were closed for the season by October 3.

In total, 3,745 ocean, bay, and river water quality samples were collected during the 2022 beach season. Beach water quality results, advisories, beach closures and reason for the beach closures were posted on the DEP's webpage njbeaches.org daily. Additionally, signs were posted at the beaches during advisories and closures. Signs remained posted until the advisories or closures were lifted.

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Ocean Summary:

In 2022, CCMP collected and analyzed 3,326 ocean water quality samples from 193 ocean monitoring locations (Figure 3). These monitoring stations make up 88% of all monitoring stations in the program. A total of 26 advisories resulted in one closure due to a bacterial exceedance. One event in Atlantic City accounted for 20 of the ocean advisories and one closure after receiving 3.5 inches of rain. The September 7th water quality exceedances resulted in 12 of these advisories.



Figure 3: 2022 Primary Ocean Sampling Locations

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Four of the stations were resampled on September 8th. Samples could not be collected for the other eight stations due to dangerous conditions. Three of the four stations resampled on September 8th, were back within the standard and swimming advisories lifted. Mississippi Ave, continued to exceed the standard resulting in the one ocean closure. During this period, the eight stations not resampled remained under advisory until resample results from sample collections on September 9th. The remaining advisories and closure were lifted by September 10th as a result of all resamples back within the standard. On July 12th, after a food truck festival in Wildwood Crest, four ocean beaches exceeded the water quality standard resulting in four advisories which were lifted the following day. On June 14th, Washington, ocean beach in Spring Lake Borough was under advisory after a result of confluent growth which was lifted the following day. The final ocean advisory this season was at Neptune Place, ocean beach in Sea Girt on August 2nd after a quarter of an inch of rain around the time of sampling. There were zero precautionary closures in beach season 2022. The Wreck Pond outfall and knife gate did not have any emergency openings during the beach season. In addition, there were zero Combined Sewer Overflow floatable washup events. Refer to Figure 4 for all ocean beach actions.

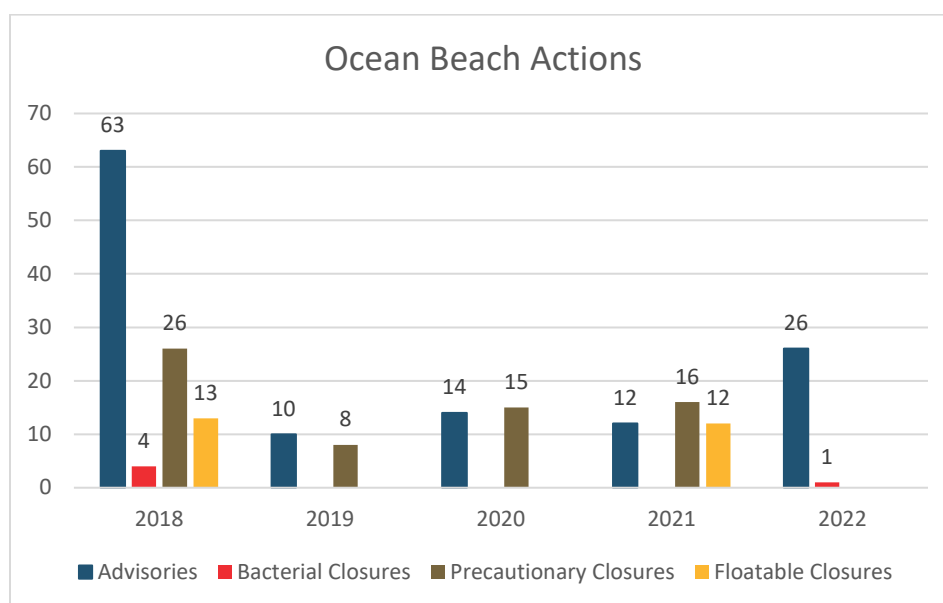


Figure 4: Ocean Beach Actions

Bay Summary:

New Jersey's coast has an extensive bay system. In 2022, a total of 297 samples were collected and analyzed from 20 primary sample (Figure 5) stations, representing 9% of the 2022 CCMP monitoring stations. Back bay systems are inland to barrier islands, home to important wetlands, may 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, Great Sound Bay, Absecon Bay, Sandy Hook Bay, and Raritan Bay.



Figure 5: 2022 Primary Bay Sampling Locations

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There were 3 advisories and 1 closure of bay beaches in 2022. Brooklyn, bay beach in Lavalette was under advisory on June 28th and closed on June 29th due to water quality exceedances after receiving about 1.5 inches of rain. The other two advisories were at Beesley's Point, bay beach in Upper Township on July 19th and Hancock, bay beach in Seaside Heights Borough of August 2nd. Please refer to Figure 6 for all bay beach actions.

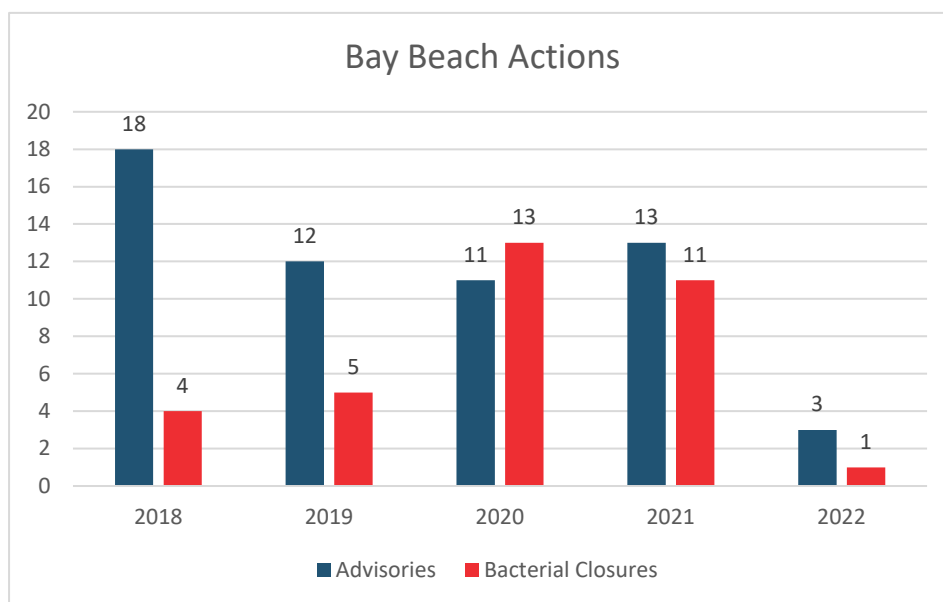


Figure 6: Bay Beach Actions

River Summary:

Only 3% of CCMP monitoring stations are within riverine systems (Figure 7). All seven river beaches included in the CCMP are tidally influenced. Tide has a significant effect on flushing and residence time of riverine waters. Typically, it takes longer for flushing to occur. In 2022, 122 river water quality samples were collected and analyzed in the CCMP. Of the seven river beaches, six are located within the Barnegat Bay watershed in Ocean County: four on the Toms River and two within the Manasquan River. The seventh river monitoring station is in the Shark River, Monmouth County.

In 2022, there was one advisory at river beach stations, and zero closures (Figure 8). The advisory was at River beach along the Manasquan River in Point Pleasant Borough, Ocean County as a result of a water quality exceedance on August 1st. The advisory was lifted the following day after all resamples were back within the standard. Most river exceedances are due to nonpoint source pollution and storm water impacts resulting from rainfall. Pollution sources tend to linger at river beaches due to tide cycles, currents, wind, and geographical features. There are currently efforts underway to identify pollution sources and potential fixes through track-down studies within the Toms River watershed.

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Figure 7: 2022 Primary River Sampling

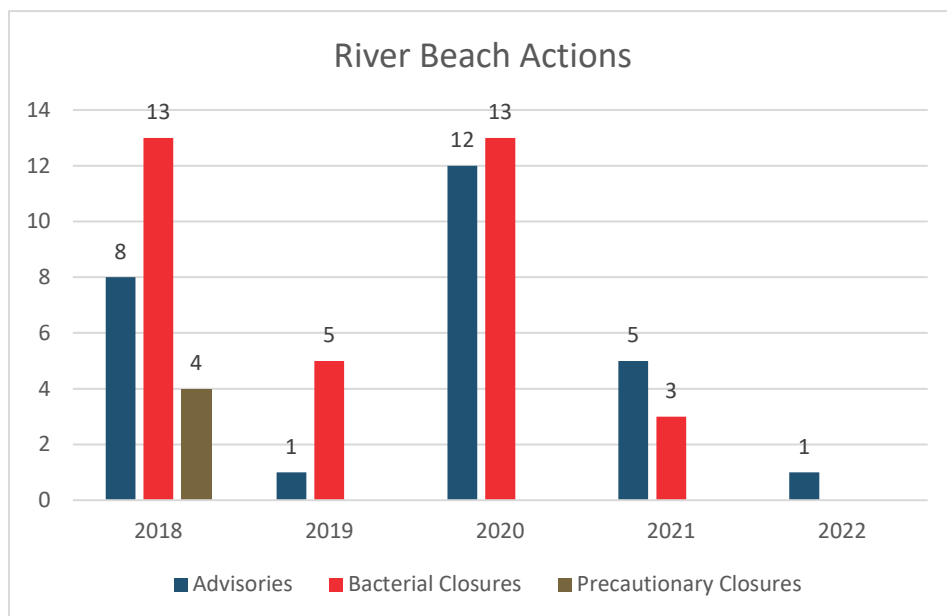


Figure 8: River Beach Actions

Seasonal Geometric Mean:

The DEP utilizes a 30-day rolling geomean statistic to identify recreational bathing beaches with low-level, but persistent water quality issues during the beach season. The geomean water quality primary contact recreation standard is 30 CFU of Enterococci per 100 mL of sample, calculated from a minimum of 5 samples collected over a 30-day period. At the end of the beach season, all water quality data from each primary monitoring station are used to calculate the seasonal geomean. In 2022, only one beach had a seasonal geomean that exceeded the standard (Figure 9) -the Beachwood Beach West in the Borough of Beachwood along the Toms River in Ocean County. Although this beach exceeded the seasonal geomean, there were no single sample maximum exceedances during the swim season and therefore no beach actions at Beachwood Beach West in 2022. The DEP uses the seasonal geomean to prioritize locations to deploy resources for pollution source track down efforts.



Figure 9: 2022 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 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 hourly rainfall totals in near real-time for a 2.5 X 2.5-mile grid that covers the State. 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 rain impact 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 potential pollution sources are stormwater outfalls that convey 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, finally arriving at

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stormwater outfall pipes that flow into local waterbodies (Figures 10 and 11). Along the way, stormwater can pick up trash such as, fast-food wrappers, cigarette butts, plastic waste, as well as toxic substances and various pollutants such as, gas, motor oil, antifreeze, fertilizers, pesticides, and pet waste, then deposit them in our waterways. Therefore, rainfall has the potential to increase bacteria concentrations near stormwater outfall pipes.



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

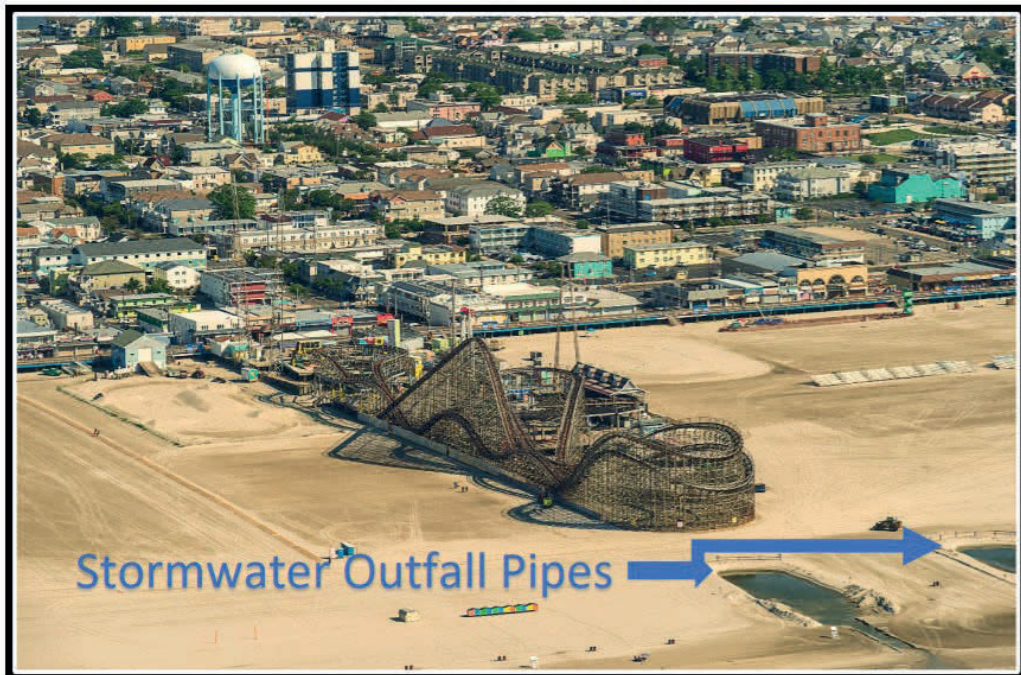


Figure 11: Stormwater Outfall Pipes in Wildwood, Cape May County

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The State of New Jersey is divided into five water regions: Upper Delaware, Northeast, Raritan, Atlantic Coastal and Lower Delaware (Figure 12). All of the coastal public recreational bathing beaches are in the Atlantic Coastal water region. This region is comprised of five watershed management areas (WMA) which are, from north to south, Monmouth (WMA 12), Barnegat Bay (WMA 13), Mullica (WMA 14), Great Egg Harbor (WMA 15) and Cape May (WMA 16). Rainfall data was compiled and analyzed based on WMAs to determine if it rained prior to sampling. Many beaches in the State are adversely affected by rain runoff. Water quality impacts can continue over 24 hours after a rainfall event, especially in rivers and bays with longer residence times. For this reason, the DEP analyzes rainfall data 36 hours prior to sample collection. The coastline of New Jersey experienced significantly less rainfall in 2022 compared to 2021 (Figure 13). Advisories and closures generally increase during “wet” years and decrease during “dry” years.

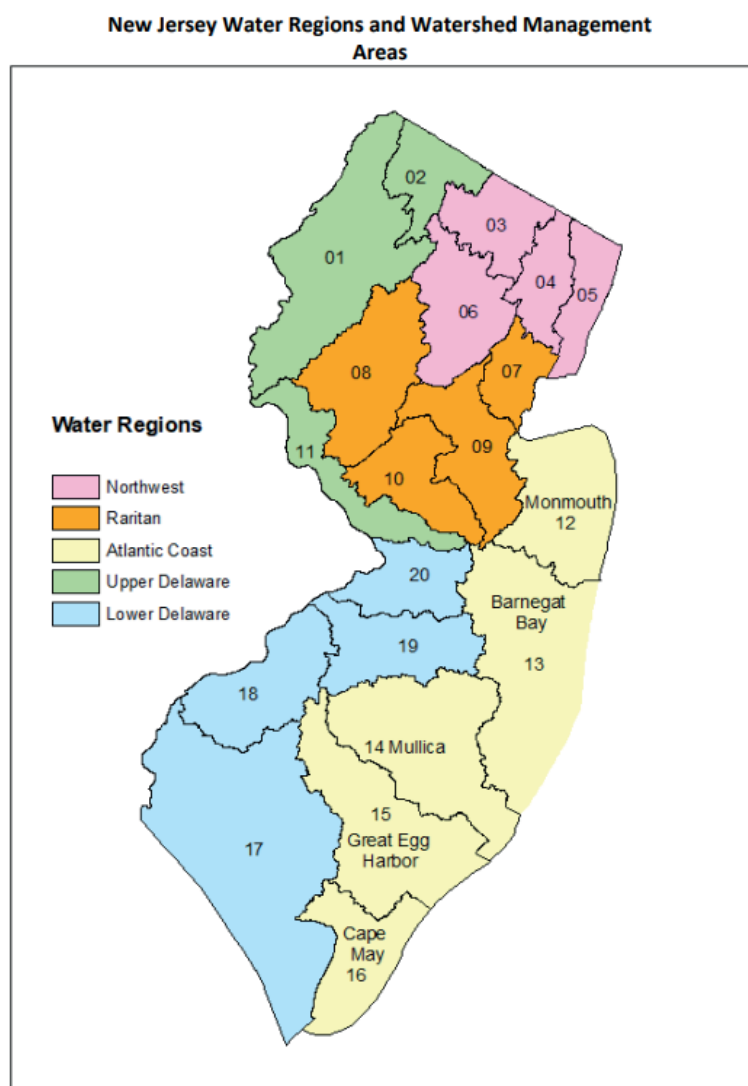


Figure 12: New Jersey Water Regions

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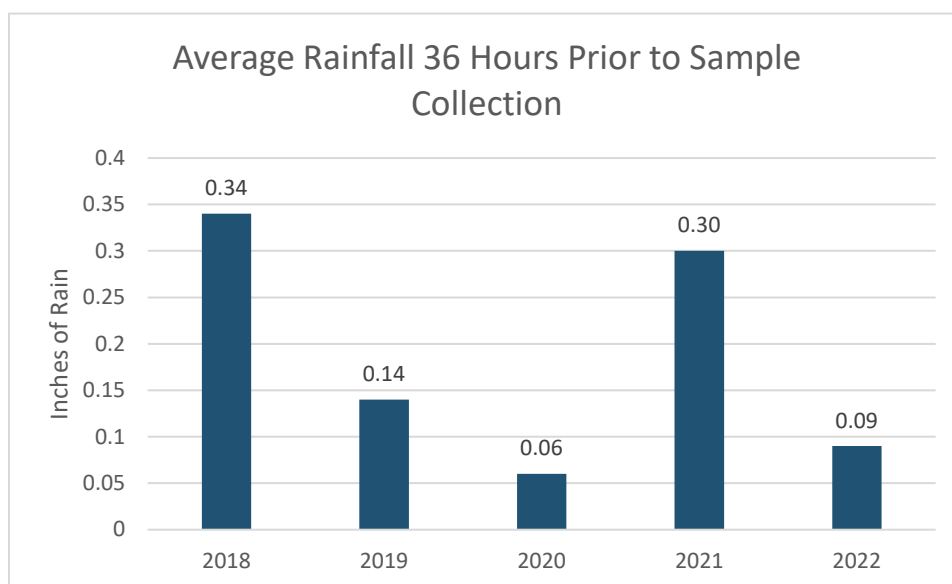


Figure 13: Average Rainfall 36 Hours Prior to Sample Collection

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, Standards and Pesticide Control's [Bureau of Marine Water Monitoring](#), the Department of Health, local health authority and local government. 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 that 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 local governments to apply to the [New Jersey Water Bank \(a partnership between the DEP and the New Jersey Infrastructure Bank\)](#) to repair and replace problematic and antiquated infrastructure that will lead to the elimination, prevention, or reduction of beach advisories and closures due to the presence of harmful algal blooms. The Water Bank Program currently has \$17 million dollars available in principal forgiveness loans up to 50% with a \$2 million dollar cap per applicant. Unallocated funds may be used for capital improvement projects that will eliminate, prevent, or reduce occurrences of beach advisories and closures 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.

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The DEP is also committed to working with CSO permittees and CSO communities to reduce or eliminate CSOs. The DEP assists permittees in meeting their permit obligations by providing technical assistance, guidance, and training. The goal of the CSO permits is to meet the requirements of the Clean Water Act and the National CSO Policy by reducing or eliminating the remaining CSO outfalls in New Jersey. In order to achieve the reduction or elimination of outfalls, CSO permittees will need to reduce flooding, ensure proper operation, maintenance and management of existing infrastructure and provide opportunities for green infrastructure. These permits reinforce the importance of properly operated and maintained water infrastructure systems in protecting public health and the environment and supporting economic redevelopment. A major emphasis of the permit process is the development of regional strategies to reduce the amount of storm water that flows into combined sewer systems, through the development and implementation of a Long Term Control Plan. For more information, visit DEP's Division of Water Quality, Bureau of Surface Water and Pretreatment Permitting's [CSO webpage](#).

Supporting Programs:

Water Compliance and Enforcement:

As part of the CCMP, the DEP's Division of Water Compliance and Enforcement (C&E) inspects, three times during the season, 18 wastewater treatment facilities that discharge to the nearshore coastal waters ([Appendix 1](#)). The inspections take place the week before each of the three summer holidays: Memorial Day, Independence Day, and Labor Day. Figure 14 shows

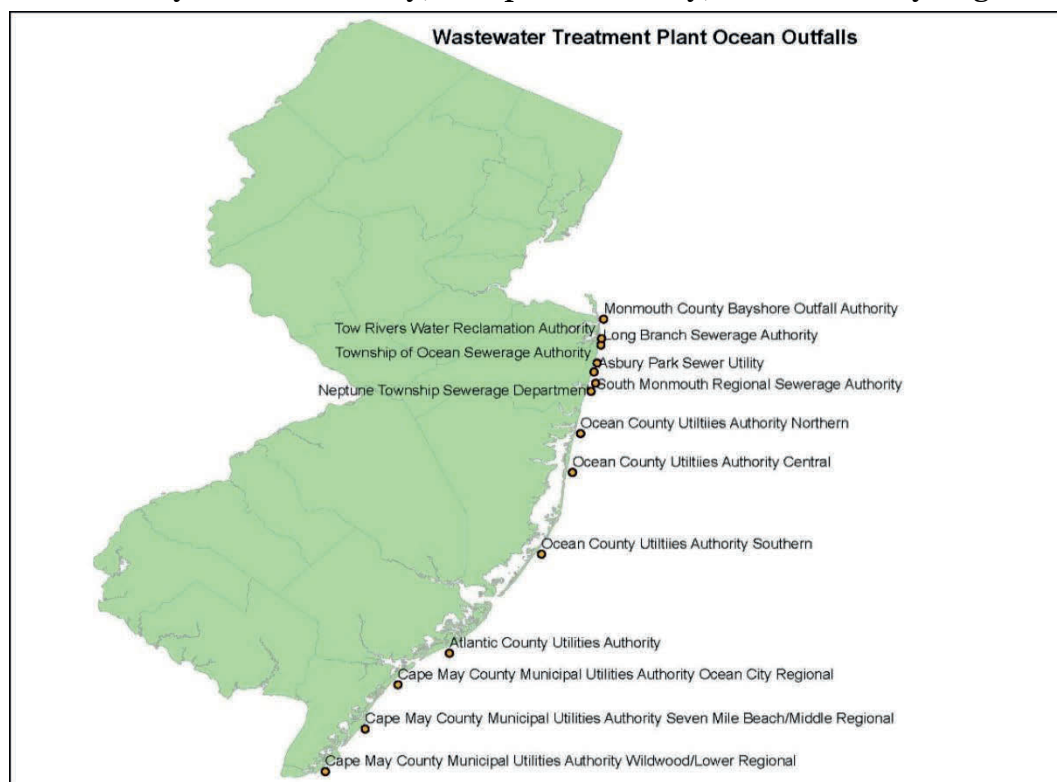


Figure 14: Treated Effluent Discharge Ocean Outfall Locations

the location of the 14 wastewater treatment plant ocean outfalls that discharge treated effluent. In addition, C&E assists in the investigation of sources of water pollution reported to the DEP Hotline.

Aerial Surveillance:

The CCMP partners with the New Jersey Forest Fire Service to perform coastal surveillance flights in their Cessna Fixed Wing Aircraft (Figure 15). Flights are conducted six days a week during beach season, weather permitting. During the flight, a pilot and a trained DEP staff observe wastewater treatment plant discharges and any changing coastal water and beach conditions. One day a week the flight path is extended to several lakes as part of the [DEP's New Jersey Harmful Algal Bloom \(HAB\) Response Strategy](#). The Aerial Surveillance Program is also funded by the "Shore to Please" license plate sales. The observer on the surveillance flight looks for floatable debris, possible pollution sources, algal blooms, or anything potentially harmful to bathers. In addition, the observer notes marine life present along the flight path.



Figure 15: NJ Forest Fire Service Cessna

Coastal surveillance flights cover the Raritan Bay, Lower New York Bay, and the Atlantic coast 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. In 2019, we began extending flights on Tuesdays to include the following inland lakes: Round Valley Reservoir, Spruce Run Reservoir, Budd Lake, Lake Musconetcong, Lake Hopatcong, Lake Mohawk, Greenwood Lake, and Swartswood Lake.

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Coastal flights began in the late 1980s. In 2007, the aircraft was equipped with a hyper-spectral sensor calibrated to estimate chlorophyll-a levels along the flight path and more recently cyanobacteria levels in lakes. High levels of chlorophyll-a and cyanobacteria are indicative of algal blooms. If an algal bloom is detected, samples are collected by either DEP staff or partnering local health authorities. 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 16 shows an example of chlorophyll-a levels collected on the short flight path flown on Mondays, Fridays, and Saturdays. Figure 17 is an example of the long flight path flown on Thursdays and Sundays. Figure 18 is an example of the flight path flown on Tuesdays to included lakes and a short coastal flight. For more information, please visit [Chlorophyll Remote Sensing](#) and [Phycocyanin Remote Sensing](#). Flight reports are posted daily at njbeaches.org. Coastal aerial surveillance statistics can be found in Table 2.

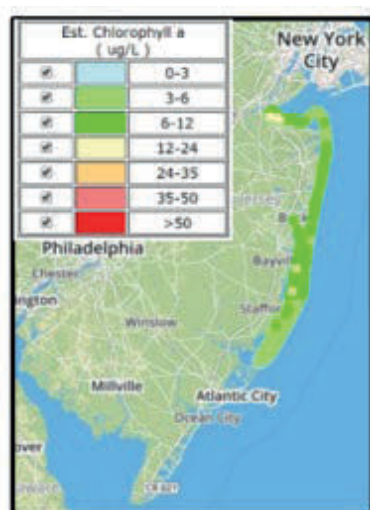


Figure 16: Short Coastal Flight Path

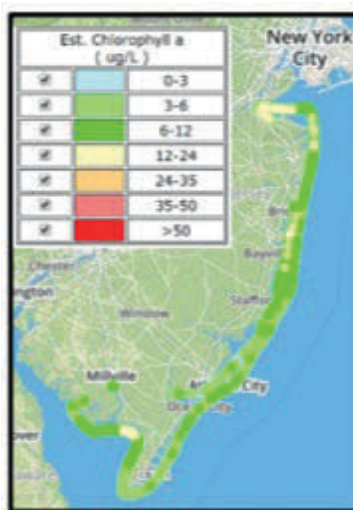


Figure 17: Long Coastal Flight Path

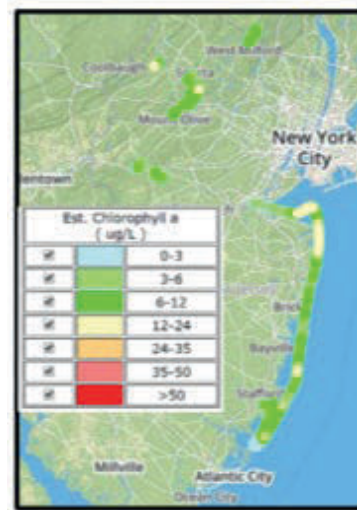


Figure 18: Short Coastal Flight Path Including Lakes

Table 2: 2022 Aerial Surveillance Statistics

Number of Scheduled Flights	113
Number of Flights Attempted	90
Number of Flights Completed	83
Number of Canceled Flights Due to Weather prior to Departure	23
Number of Flights Chlorophyll-a data was collected	87
Number of Flights with Dolphin Sightings	58
Number of Flights with Baitfish Sightings	61
Number of Flights with Ray Sightings	39
Number of Flights with Turtle Sightings	4
Number of Flights with Whale Sightings	3

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 at a lifeguarded beach or 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 communicate water quality results to the public. 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 once every three weeks. Locations that do not meet the primary contact recreation standard are placed under an advisory until subsequent sampling results are within the standard again. Results are available to the public at the [Environmental Coastal Monitoring website](#). In addition, a sign is posted at each monitoring location to notify the public that routine sampling occurs at these locations and to direct them to the website with the water quality data.



Figure 19: 2022 Environmental Coastal Monitoring Stations



Figure 20: Higbee Beach, Cape May, ECM Station

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A total of 33 locations monitored as part of this program are shown in Figure 19: 25 bay stations, and eight river stations. In 2022, a total of 198 samples were collected and analyzed resulting in 17 advisories: seven in Cape May County, and ten in Ocean County. The DEP will continue this supplemental program in 2023.

Clean Shores Program:

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 along tidal shorelines, such as back bays and beaches. Typically, the detail removes floatable debris like wood, litter, and plastic waste (Figure 21). Shorelines that have been left unattended serve as reservoirs for floatable debris and trash that can be dispersed during coastal storms and extreme high tides. Removing this trash and debris prevents it from washing up on recreational beaches, becoming floating hazards to navigation, or impacting marine life and sensitive ecosystems. The partnership is mutually beneficial allowing the State to provide a needed service to municipalities and giving an opportunity for minimum security inmates to give back to the community in a meaningful way. For more information, please visit the [Clean Shores Program](#).



Figure 21: Clean Shores Detail Removing Wood, Debris, and trash from the Delaware River Shoreline

Municipalities that currently participate in the Clean Shores Program encompass the shorelines of the Hudson, Raritan and Delaware estuaries, tidal shorelines, barrier islands and back bays. Seen in Figure 22, not all eligible municipalities are currently participating. When the Program began in 1989, the State's shoreline had significant amounts of debris and 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 20). During 2020 and 2021, the Clean Shores Program operated for periods of time without an inmate detail due to the Covid-19 pandemic.

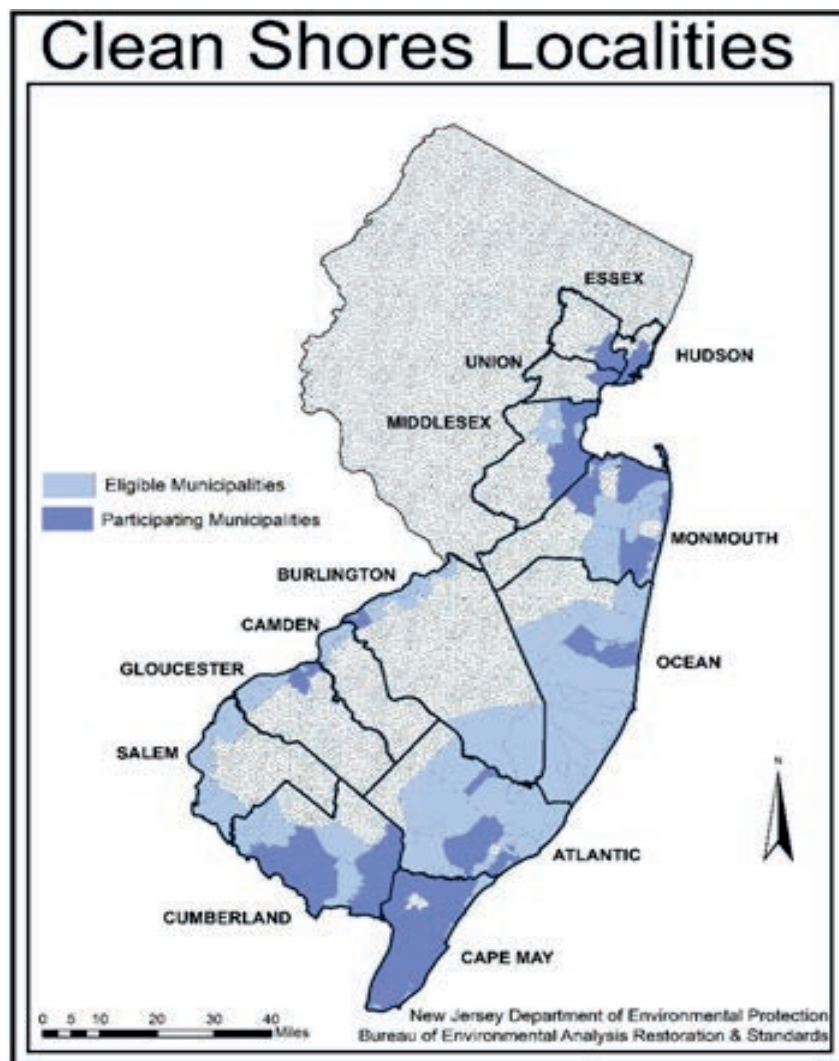


Figure 22: Eligible and Participating Clean Shore Municipalities

Between 1989 and 2022, more than 158 million pounds of debris have been removed, and 3,912 miles of New Jersey's tidal shorelines have been cleaned and recleaned by the program (Figure 23). Funding for the Clean Shores program comes entirely from the revenue of the "Shore to Please" dedicated specialty license plate sales. During the 2018 and 2019 beach seasons, the DEP used an aerial banner to promote the sale of these specialty plates.

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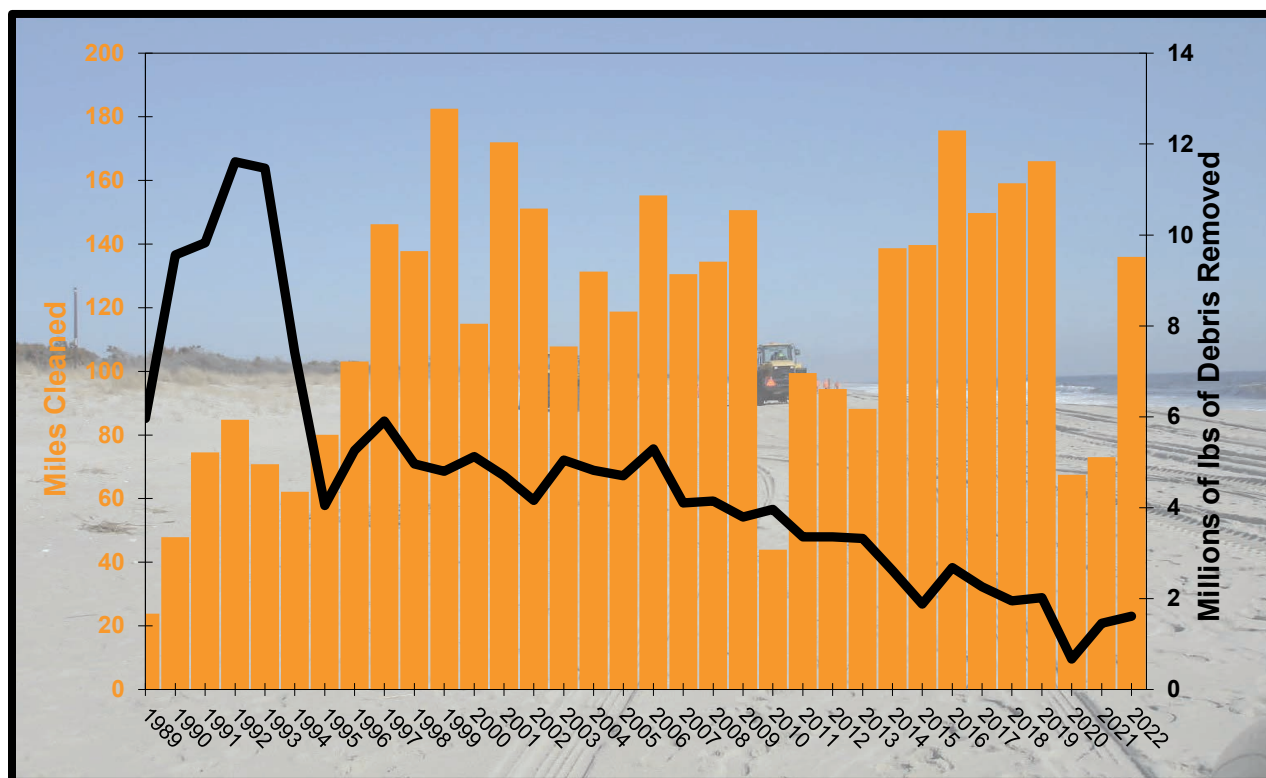


Figure 23: Miles Cleaned vs. Trash Removed by the Clean Shores Program

The public's support of NJ's Beach Monitoring Program through sales of the license plate assists in keeping New Jersey's Beaches clean and safe for recreation. Please support this Program by applying for the ["Shore to Please" license plate](#).



Figure 24: NJDEP's Beach Program Banner Plane Advertisement, 2018 and 2019 Summer Months (NJDEP)

Up to Date Information

New Jersey's Beach Monitoring Program information can be found at 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 are available for download from this site. Coastal surveillance flight reports and remote sensing chlorophyll levels along the flight path are updated daily and made available via the beach website. Reports and other news regarding New Jersey's coastal recreational bathing beaches are also posted on the website. The Program has a social media presence that the public can follow on twitter @NJBeachReport for daily beach tweets throughout the beach season.

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