

# INTERSTATE ENVIRONMENTAL COMMISSION

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A Tri-State Water and Air Pollution Control Agency

## INTEGRATED WATER QUALITY ASSESSMENT AND METHODOLOGY REPORT



APRIL 2010

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# EXECUTIVE SUMMARY

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By April first of even numbered years, states, tribes and interstate commissions must submit an Integrated Report to the US Environmental Protection Agency (EPA) satisfying the requirements of both sections 305(b) and 303(d) of the Clean Water Act (CWA). Section 305(b) requires an assessment of water quality and a determination of the extent to which waters provide for the protection and propagation of a balanced population of fish, shellfish, and wildlife and allow recreational activities in and on them. Section 303(d) calls for the identification and listing of impaired and threatened waters, including waters targeted for Total Maximum Daily Load (TMDL) development, as well as the pollutants causing the impairment and their sources.

This Integrated Report, prepared by the Interstate Environmental Commission (hereinafter the Commission or IEC) addresses Clean Water Act 305(b) and 303(d) requirements. Additional information from the Integrated Reports of the Commission's member states — New York, New Jersey and Connecticut — needs to complement this report to fully satisfy 303(d) requirements, since authority in generating and enforcing TMDLs — recommended as remediation tools by section 303(d) of the CWA— rests, in most times, with the Commission's member states. IEC does not produce a 303(d) list of its own, and thus does not require the public noticing process for publishing a 303(d) list.



In this report, waters of the Interstate Environmental District (hereinafter the District) are partitioned into assessment units. Each assessment unit is assessed in terms of how well it supports the uses assigned to it. The uses assessed are: Aquatic Life Support, Fish Consumption, Shellfish Consumption, Primary Contact Recreation and Secondary Contact Recreation. Each use assessment determines the percentage of the assessment unit's total area that could be placed into one of five general categories: Fully Supporting, Fully Supporting but Threatened, Not Supporting, Not Assessed-Use Not Assigned and Not Assessed-Insufficient Data. The process is repeated for all uses assigned to an assessment unit. District waters are then further classified depending on their cumulative support of their assigned uses (i.e., support all uses or support some, but not all, etc.).

## Overall Water Quality

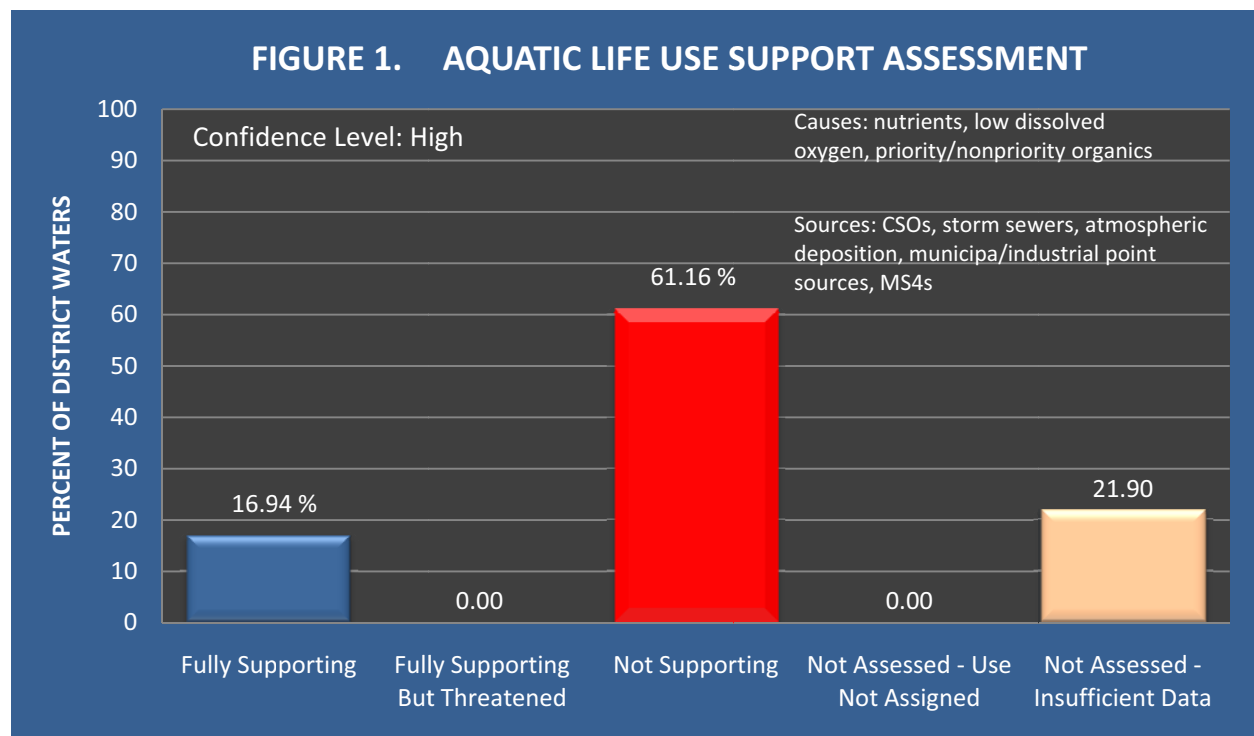
### Aquatic Life Use Support

Aquatic life use support refers to the ability of waters to sustain a healthy, abundant and diversified aquatic life. This designated use is assigned to all waters of the Interstate Environmental Commission's District, regardless of their class designation.

Along with narrative information and observations from volunteer citizen groups and other governmental organizations monitoring the environment within the boundaries of the Commission's District, two types of data are needed to arrive at a complete assessment of aquatic life use support: biological monitoring data and chemical/physical water quality data that have been collected with approved Quality Assurance Project Plans. These data types, if used in concert, can also identify accurately the wide diversity of stressors that impact water resources.

Measurements of chemical water quality parameters — such as dissolved oxygen, a necessary element to all forms of life — have been, and will remain, the traditional benchmarks of aquatic life support. Insufficient dissolved oxygen concentrations put aquatic life and natural stream purification processes under stress, and if they persistently remain below one to two milligrams per liter, large fish kills may be expected. In some situations, physical and chemical measures only serve as indicators of potential stress. Data collected from biological surveys, on the other hand, provide a direct way of measuring the cumulative response of the biological community to all sources of stress and a mechanism to accurately identify water quality problems that chemical measurements might miss. Biological assessments reveal unique and consistent impacts — integrating the effects of past activities — to aquatic communities inhabiting the waters of the District. Biological survey data in combination with chemical/physical water quality data result in credible and balanced assessments of aquatic life use support.

The results of the Commission's assessment of aquatic life use support in its District are depicted below.





To assess aquatic life use support, the Commission adheres to a methodology that takes into account existing chemical/physical water quality data, as well as biological data. To supplement the data acquired through its ambient water monitoring programs, the Commission solicited and received chemical water quality data from outside sources. Attempts to retrieve biological data from STORET — US EPA's national water quality database — were unproductive, since biological data from the tri-state area were not entered into STORET. The Commission's aquatic life use support assessment methodology, supporting data and all sources of data are described in detail in later sections of this report.

A significant portion of the District's waters is under stress; the only waters that fully support aquatic life are the waters of the Atlantic Ocean within the Commission's District. The degraded area would have been even larger if biological data were available to confirm widely acknowledged impairments.

A noteworthy concern in the Commission's District that demands continuous attention is the decrease of dissolved oxygen content in waters of the western Long Island Sound. Dissolved oxygen reaches alarmingly low levels during the summer months when the waters stratify, especially at the bottom. Such low levels of oxygen do not provide aquatic life with optimum conditions to survive and reproduce. For the two-year reporting period, more than 60% of the Commission's dissolved oxygen measurements at the bottom waters of the Long Island Sound were below the 5 mg/l criterion for Class A waters; with some of the measurements even being 0 mg/l. Hypoxia (dissolved oxygen less than 3 mg/l) forces finfish to keep away from the area and anoxia (an extreme form of hypoxia) kills any aquatic life unable to swim away. The problem is caused primarily by eutrophication — excessive algal and plankton growth at the expense of other more complicated plants — due to nitrogen loads from wastewater treatment plant discharges, stormwater runoff, combined sewer overflows and atmospheric deposition. In 1998, Connecticut and New York agreed to reduce the amount of nitrogen input by 58.5 percent, and to implement that agreement through the development of a TMDL, in conformance with Section 303(d) of the Clean Water Act.

Another area demanding particular attention is Jamaica Bay, an approximately 9,000 acre wildlife refuge hosting an extensive variety of fish, mollusks, crustaceans and other marine life, as well as several endangered and threatened species. Jamaica Bay is overwhelmed by overdevelopment, water pollution and invasive plant and animal species. Just like in Long Island Sound, dissolved oxygen levels in parts of Jamaica Bay are too low to sustain healthy aquatic life. Water clarity has also declined significantly. Jamaica Bay receives discharges — containing nitrogen and other organic pollutants that cause harmful algae blooms — from four New York City as well as Nassau County sewage treatment plants that surround the bay. Algae blooms reduce the clarity of the bay's water and, as the algae dies, it sinks to the bottom and depletes the water's oxygen. Combined sewer overflows and stormwater containing deicing chemicals used in the area's roads and highways and John F. Kennedy International Airport also discharge into the Bay.

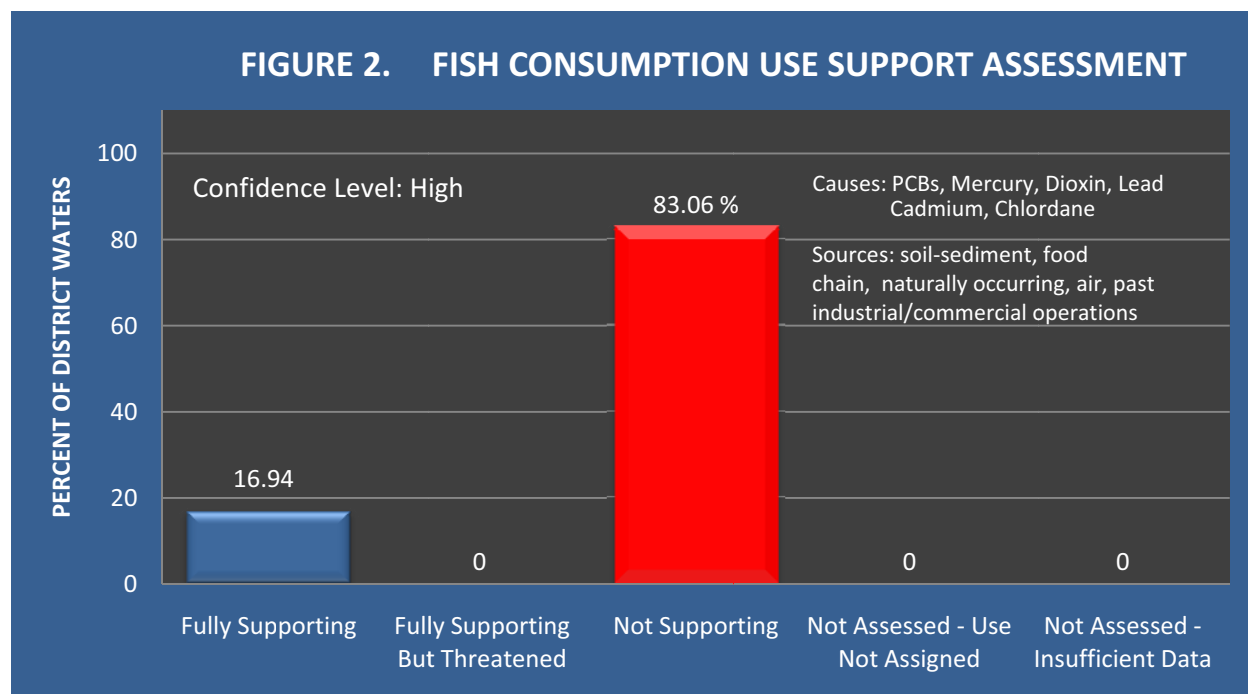
## **Fish Consumption Use Support**

One of the main goals the Federal Control of Water Pollution Act of 1972, known as the

Clean Water Act, is to restore the nation’s waters to the point that people are able to fish, swim and boat safely. That is frequently called the “fishable/swimmable” standard for water quality. The fish consumption use support is assigned to all waters of the Interstate Environmental Commission’s District, regardless of their class designation.

Great progress has been made in improving the quality of waters in the tri-state region, but as the Commission’s fish consumption use assessment indicates, more work is needed to reach the fully fishable status targeted by the CWA. With the exception of one body of water — the portion of the Atlantic Ocean within the Commission’s District — all other waterways are assessed as Not Supporting the fish consumption use because of consumption advisories issued by state agencies for several species. The most severe restrictions apply to the core area of the Harbor Estuary; an area that includes the lower Hudson, East and Harlem Rivers; Newark, Jamaica, Upper New York and Lower New York Bays; and the Kills. A detailed description of the Commission’s fish consumption use assessment methodology and the fish consumption advisories in effect in all three of the Commission’s member states (New York, New Jersey and Connecticut) is presented in later sections of this report.

Polychlorinated biphenyls (PCBs) along with mercury, dioxin, chlordane and cadmium are the most frequently noted pollutants that impair the estuarine waters of the District. Other pollutants may be DDT, DDD, DDE, dieldrin, benzo(a)pyrene, hexachlorobenzene, and heptachlor epoxide. Contaminated sediments, air and natural occurrence make up the group of currently contributing sources of contamination. Past chemical spills and past industrial/commercial operations that introduced those contaminants to the natural food chain are still considered sources of contamination. Because of the proximity of District waters to highly populated urban areas, stormwater runoff and combined sewer overflows add to contamination. The results of the Commission’s assessment of the fish consumption use in its District are depicted below.

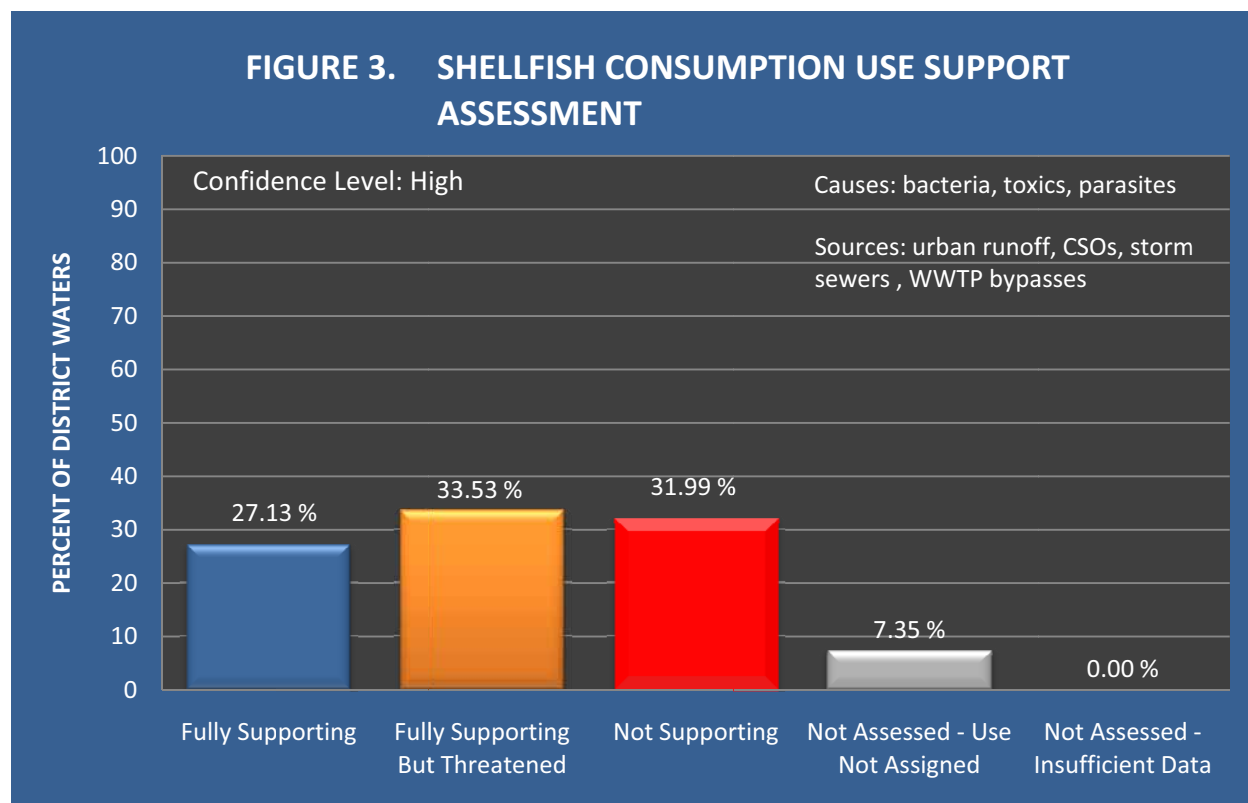


## Shellfish Consumption Use Support

The shellfish consumption use refers to the ability of waters to sustain a significant population of shellfish that will not pose health risks to those who consume it. The use of shellfish consumption is assigned only to Class A waters of the Interstate Environmental Commission's District where allowed.

Suitability for shellfish harvesting of existing or potential shellfish growing areas is important from both public health and economic perspectives. Pathogens may be transmitted to consumers through the harvest and consumption of contaminated shellfish. The Commission evaluates shellfish growing areas based on National Shellfish Sanitation Program (NSSP) classifications, which in turn, are based on direct measures of pathogenic indicators such as total and fecal coliform bacteria, and on pollution source evaluations. The Commission's shellfish consumption use assessment methodology, along with supporting data and other information, is presented in detail in later sections of this report.

The results of the Commission's assessment of the shellfish consumption use in its District are depicted below.



Opening and/or keeping open areas for shellfishing remains a Commission priority. The Commission has been collecting water quality samples to check the sanitary conditions of the shellfish waters of western Raritan Bay and Sandy Hook Bay for 14 years. Samples are collected subsequent to storm events of at least 0.2" of rain in accordance with guidelines established by the U.S. Food and Drug Administration's National Shellfish Sanitation Program.

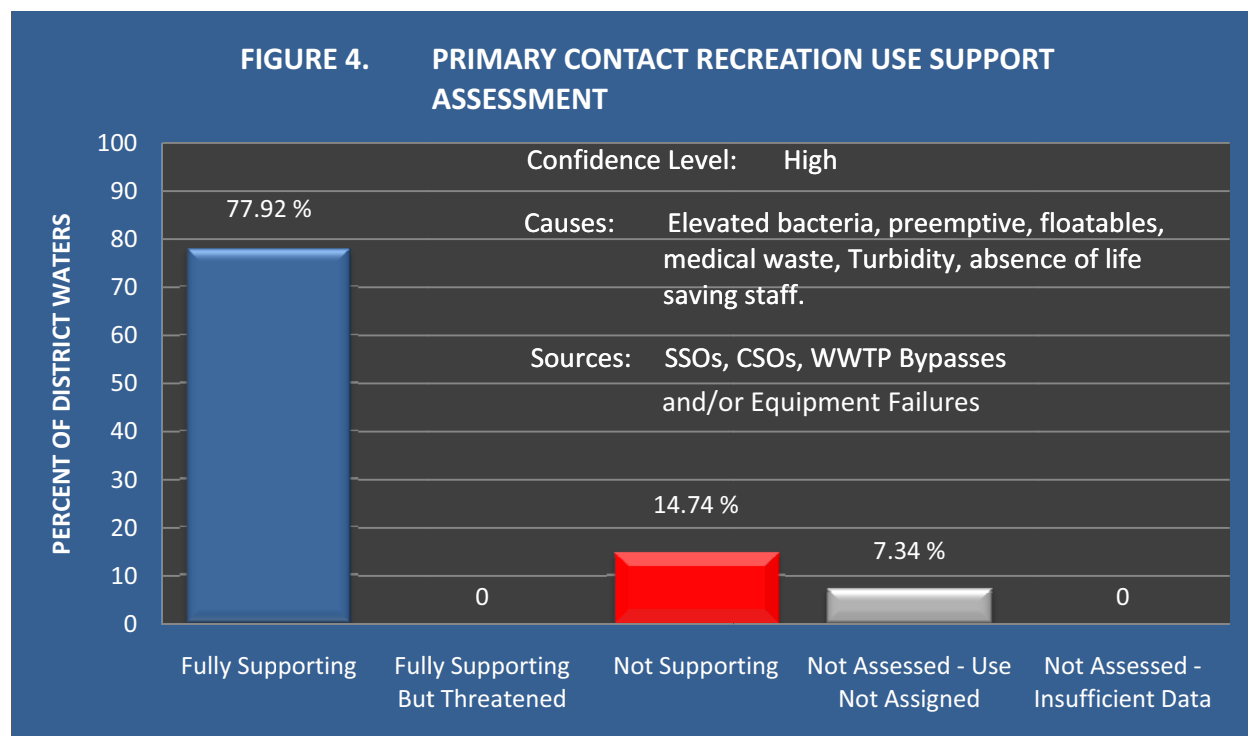
Data sets from these surveys are used to determine the suitability of District waters for commercial or recreational shellfish harvesting.

## Primary Contact Recreation Use Support

Primary contact recreation refers to the degree to which waters of the Interstate Environmental Commission's District allow recreational activities in and on them. Primary contact recreation means recreational activity that involves significant ingestion risk, including but not limited to wading, swimming, diving, surfing, kayaking and waterskiing. Only Class A waters of the District are evaluated in terms of their support for primary contact recreation.

Assessment is based on beach closure information issued by State and local health departments. Beach closures occur when sufficient pathogenic indicator data violate applicable water quality criteria or when preemptive standards are exceeded. A preemptive standard is the threshold level of precipitation that, when exceeded, can lead to elevated levels of bacteria caused by combined sewer overflows and/or stormwater runoff. Excessive floatables and medical waste can also trigger closures. The Federal Beaches Environmental Assessment and Coastal Health Act of 2000 (BEACH Act) establishes enterococci as the indicator organism for evaluating the microbiological quality of saline recreational beach waters.

The results of the Commission's assessment of primary contact recreation use support are depicted below.



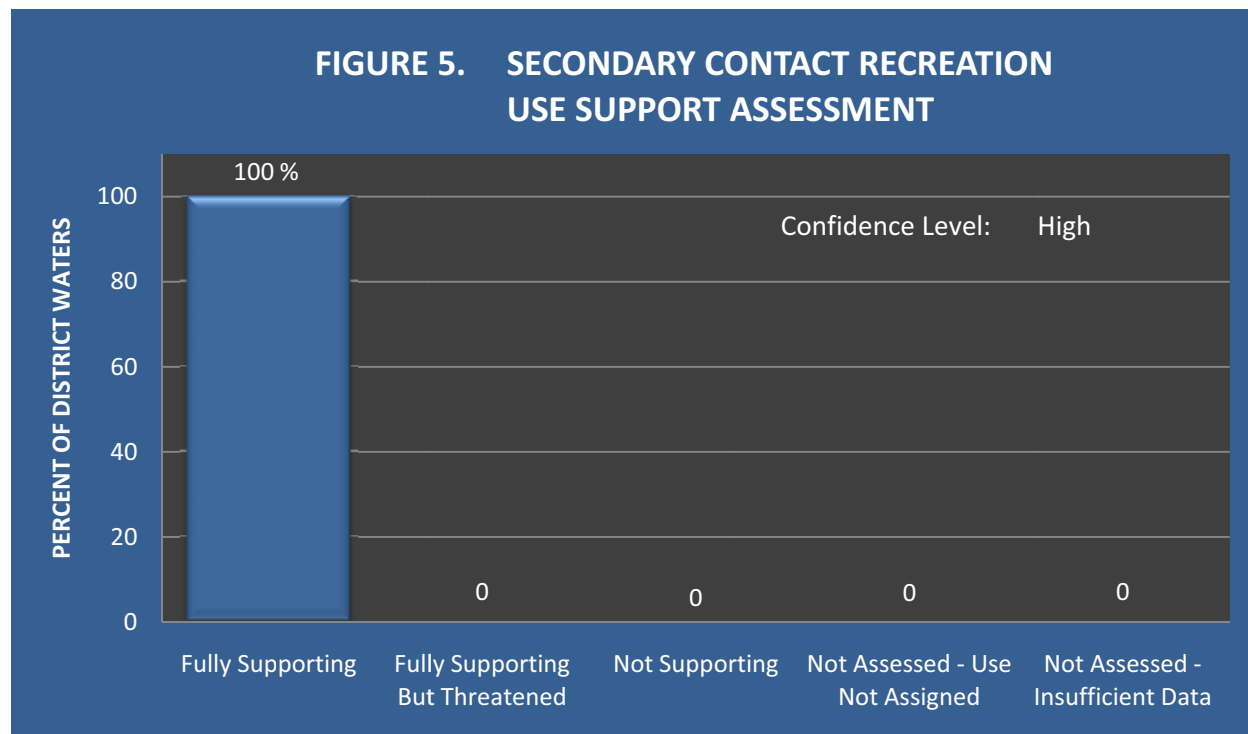
The overall quality of the Commission's Class A waters in 2008 and 2009 as it pertains to primary contact recreation use support was satisfactory. Most of the beach closures occurred due

to rain-related precautionary reasons. Sources of bacteria included storm sewer outfalls, combined sewer overflows, wastewater treatment plant bypasses and/or equipment failures. The Commission's assessment methodology, along with supporting data and other information, is presented in detail in later sections of this report.

To address the issue of unplanned bypasses of raw and partially treated sewage, a sophisticated water quality model, the Regional Bypass Model, was developed to predict whether a discharge occurring at a certain point will affect a specific beach or shellfish area. Agencies that are members of the Regional Bypass Work Group include the IEC, IEC's three states' environmental and health departments, National Park Service, New Jersey Harbor Dischargers Group, New York City Department of Environmental Protection, US EPA, US FDA, US Coast Guard, and county health departments. This Work Group has been in existence since 1998.

## Secondary Contact Recreation Use Support

Secondary contact recreation refers to recreational activity in which the probability of significant contact with the water or water ingestion is minimal including but not limited to boating, fishing, and shoreline recreational activity involving limited contact with surface waters. The use of secondary contact recreation is assigned to all waters of the Interstate Environmental Commission's District regardless of their class designation. Other than a few aesthetic considerations in the industrialized portions of the District, the use of secondary contact recreation is supported by all District waters.



## **Programs to Correct Impairments**

The Commission conducts ongoing ambient and effluent monitoring programs with laboratory support to assess District waterbody impairments. The Commission's research vessel is available 12-months-a-year to complete ambient monitoring programs and respond to unique events, i.e., fish kills, infrastructure failures and assist other agencies during staff and budget shortfalls. The programs are conducted to address data gaps as determined by the member states, support Total Maximum Daily Load development, support National Estuary Program needs, specifically for the Long Island Sound Study and Harbor Estuary Program, NPDES/SPDES compliance, and IEC Water Quality Regulations compliance. The programs in place include:

- Ambient Water Quality Monitoring in Long Island Sound to Document Dissolved Oxygen Conditions
- Microbiological Surveys in the Shellfish Harvesting Waters of Western Raritan Bay
- Ambient Water Quality Monitoring for Pathogens in the Hudson River
- Pathogen Track Down on the Byram River
- Effluent Compliance Monitoring of Municipal Treatment Facilities Discharging to District Waters in New York, New Jersey and Connecticut
- NYS DEC- Region 2, Reconnaissance and Comprehensive Inspections
- Effluent Compliance Monitoring of Industrial Wastewater Treatment Facilities Discharging to District Waters
- Combined Sewer Overflow Dry Weather Inspections
- Municipal Storm Sewer System Dry Weather Inspections
- Regional Bypass Work Group: Chair, Clearing House of District Bypass Events, Coordination of Notification Protocols

## **General Changes or Trends in Water Quality**

### **Trends in Aquatic Life Use Support**

The Interstate Environmental Commission has been collecting technical data on ambient water quality for decades through its monitoring programs. The data could be evaluated to determine whether water quality is improving, deteriorating, or remaining constant over the years, provided that data have been collected regularly and consistently over periods of 5 years or more. To develop appropriate long term trends, water quality data collectors need to make the same measurement, in the same way at a representative location each time a District waterbody is sampled. Furthermore, monitoring should be performed at regular intervals to ascertain spatial and temporal confidence; that is, frequent enough to be representative of water quality. If locations or methods of sampling or measuring change over time, then it is very difficult to tell whether a trend is due to a change in water quality or a change in monitoring frequency, locations and/or methods.

In regards to aquatic life use support, the Commission has not investigated for trends in each waterbody within its District or its District as a whole due to the absence of sufficient data. Nevertheless, long-term trends in water quality can be determined for the western Long Island

Sound portion within the Commission's District and the upper East River (between the Whitestone and Throgs Neck bridges), where regular and consistent physical/chemical monitoring has been performed by the Commission since 1991.

The Long Island Sound and upper East River are productive ecosystems, attracting millions of people for recreation. Commercial activities in these waters are also very significant, affecting the economy of the whole tri-state area. Summer dissolved oxygen measurements from 1999 to 2009 in both surface (one meter below the water's surface), as well as bottom waters (one meter above the bottom) demonstrate consistent impairment of the use of aquatic life support in the western Long Island Sound and Upper East River. Hypoxia — when dissolved oxygen drops below 3 mg/L — is prevalent throughout the years, especially in bottom waters.

The percentage of every year's dissolved oxygen measurements that satisfy the Commission's applicable dissolved oxygen criterion (at least 5 mg/l at anytime) is presented in Figure 6 for the western Long Island Sound portion within the Commission's District and the upper East River. The percentage of surface waters dissolved oxygen measurements is depicted separately from that of bottom waters. A dissolved oxygen concentration of 5 mg/L is considered protective of most aquatic life. In every year from 1999 to 2009, significantly more than 50% of dissolved oxygen measurements in bottom waters did not comply with the Commission's 5 mg/L standard. In surface waters, at least 10% of every year's dissolved oxygen measurements did not satisfy the requirement. Although data points in Figure 6 for both surface and bottom waters fluctuate from one year to the next, the negative slopes of the straight lines that best fit each series of data indicate indistinct deteriorating conditions.

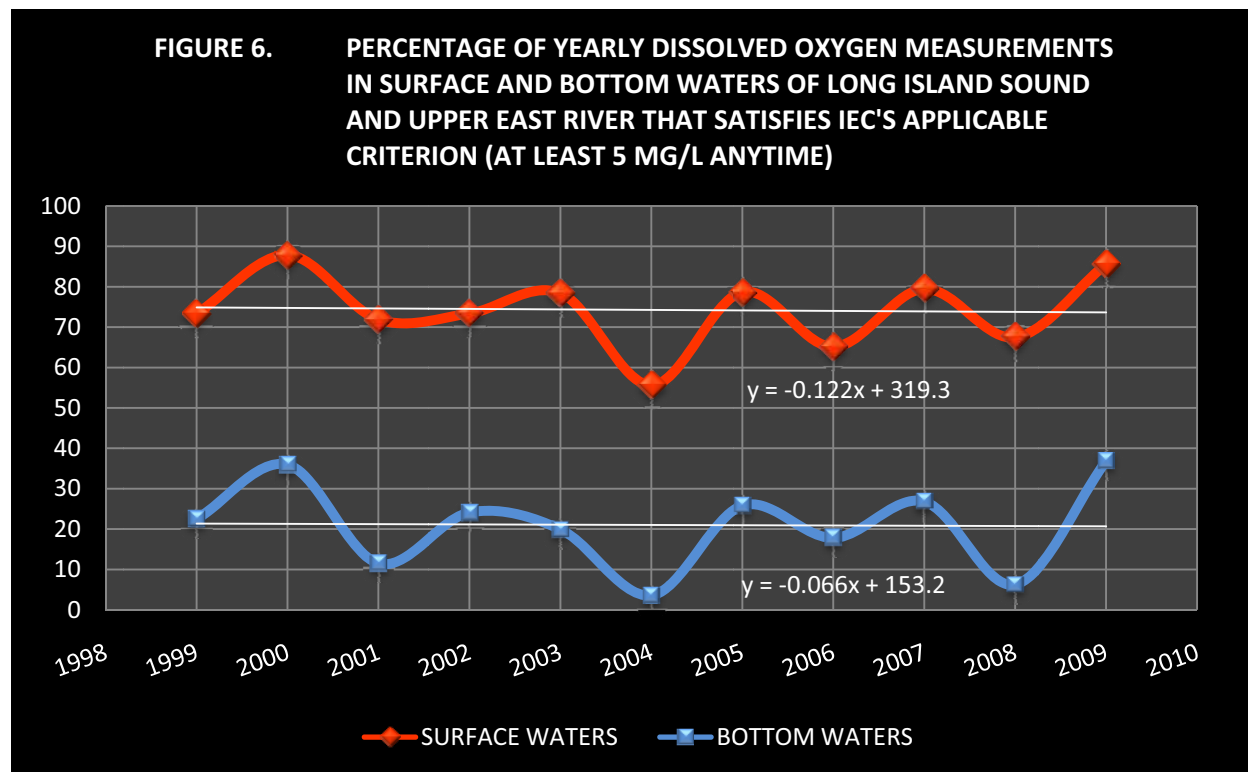
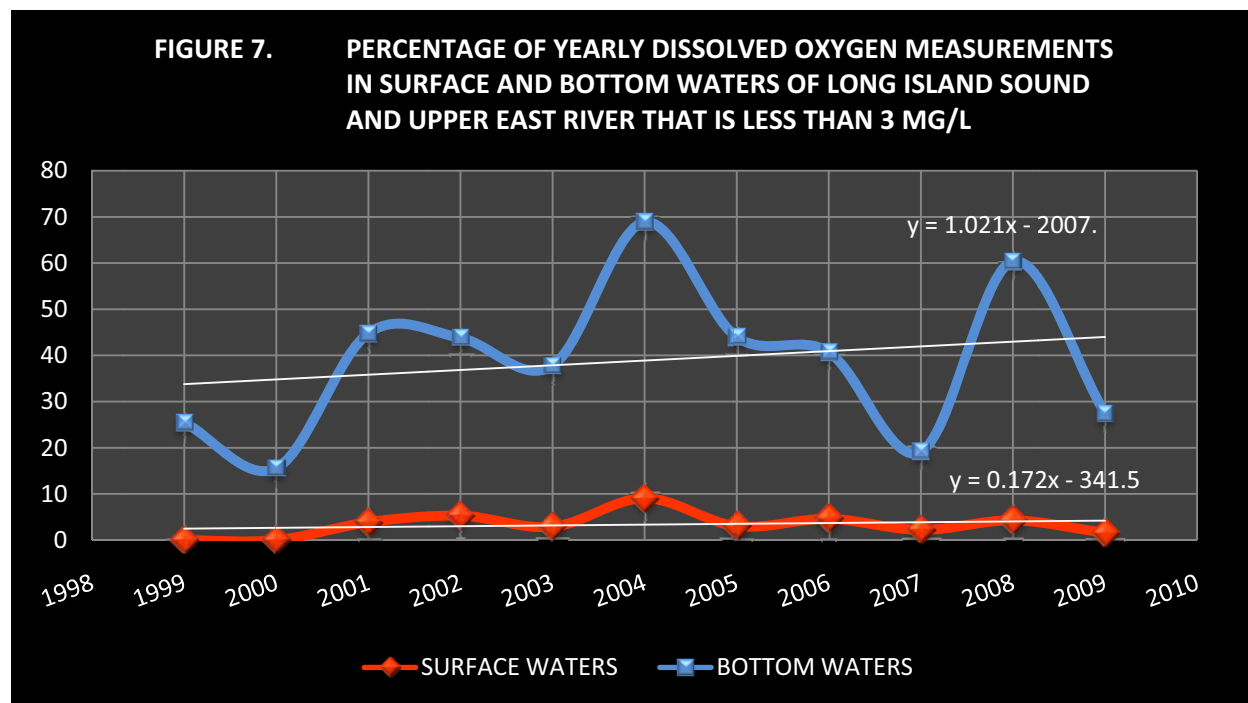


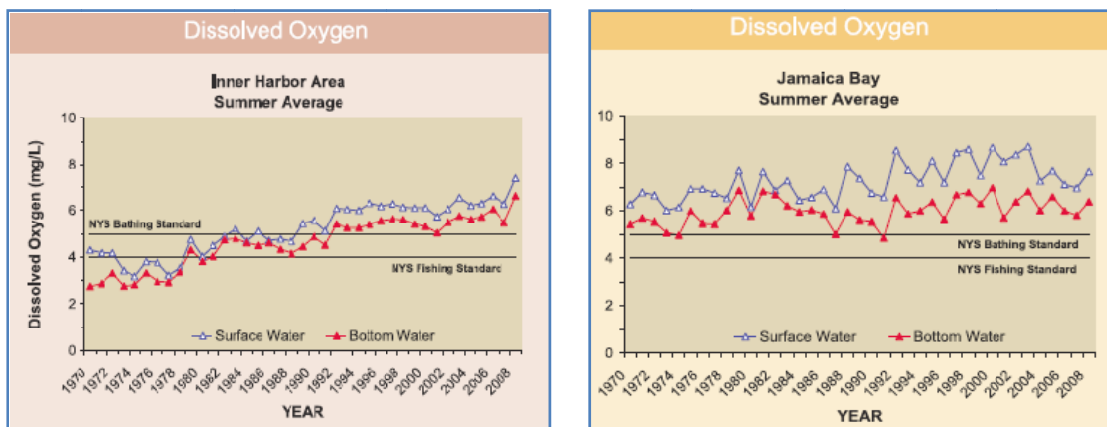


Figure 7 illustrates the percentage of hypoxic measurements throughout the years in surface and bottom waters; that is, the percentage of every year's dissolved oxygen measurements that were below 3 mg/l in the western Long Island Sound portion within the Commission's District and the upper East River. In 2004, nearly 70% of dissolved oxygen measurements in bottom waters were below 3 mg/L. In this figure, the positive slopes of the straight lines that best fit each series of data indicate indistinct deteriorating conditions.



Dissolved oxygen concentration trends in other waterbodies within the Commission's District — which indirectly provide aquatic life assessment trends based on physical/chemical data — can be acquired through the latest New York Harbor Water Quality Report, issued by the New York City Department of Environmental Protection.

**FIGURE 8. D.O. Trends in Inner NY Harbor and Jamaica Bay Areas.**  
(From NYC Dept. of Environmental Protection's NY Harbor Water Quality Report)





## **Trends in Fish Consumption, Shellfish Consumption, Primary Contact Recreation and Secondary Contact Recreation Use Support**

To assess the uses of fish consumption, shellfish consumption and primary contact recreation, the Interstate Environmental Commission relies on fish consumption advisories, shellfish bed classifications and beach closures, respectively; all issued by appropriate state and/or local environmental and health departments.

Fish consumption advisories have been virtually identical in all three of the Commission's member states in the last few years. With a few inconsequential changes, shellfish bed classifications have remained nearly the same in all three member states in the recent past. The number of beach closures in the New York and Connecticut portions of the District has fluctuated throughout the last five years. Still, the overall assessment of primary contact recreation throughout the District remains more or less the same; with approximately 80% of the District fully supporting this use in the last five years. In regards to secondary contact recreation, waters of the District fully support this use consistently.

Consequently, the degree that District waters support the uses of fish consumption, shellfish consumption, primary contact and secondary contact recreation in the last five years remains practically the same with no signs of improvement or deterioration.

## **Summary Of the Plan Showing How IEC Will Achieve Comprehensive Coverage of its Waters**

As required by the three States' governors for budgetary planning, the Commission prepares its Management Plan annually for the subsequent fiscal year. As new threats confront the Interstate Environmental District, the IEC will continue to meet its mandate, as well as to explore emerging pollutants in innovative and novel areas of science. IEC is currently involved in emerging green technology research, which is made possible through traditional funding through the states' appropriation processes, in addition to grants from the US EPA, as well as from NYS DEC pursuant to the American Recovery and Reinvestment Act of 2009 and section 604(b) of the Clean Water Act. The Interstate Environmental Commission will expand its research capabilities as resources permit.

The IEC will implement these goals by coordinating interstate and region wide programs and enforcing its water quality regulations; providing technical assistance and support to its member States; taking the lead on region wide issues; enhancing public and legislative awareness; and disseminating information. The annual Management Plan's goals and objectives are developed from the mission statement and goals of IEC. The IEC Management Plan for Fiscal Year 2010-2011 is a supportive document to the IEC budget and will be attached to the minutes of the June Quarterly meeting. Comprehensive coverage of the District waters is dependent on the funding and staffing available to the Commission for the fiscal year.

## Conclusions and Recommendations

The two-year reporting period for this Integrated Water Quality Assessment has been a difficult one for the Interstate Environmental Commission. The recession and fiscal crisis which has affected the country and the New York, New Jersey and Connecticut Tri-State Area, which the Commission serves, has affected the Commission as well. Re-examination of Commission programs, staffing, goals and objectives has been required to better focus the Commission's resources to fulfill its mission under the Tri-State Compact and address environmental issues within its Interstate Environmental District with renewed energy and commitment.

All ambient and effluent monitoring programs as mentioned above are in place and continuing. Additional funding mechanisms are being investigated to expand monitoring efforts. Specifically, the IEC is the recipient of three grant awards from the NYS DEC to support three water quality planning projects as part of the Clean Water Act Section 604(b) funds made available from President Obama's signing of the American Recovery and Reinvestment Act (ARRA) into law. These projects include ambient water quality sampling during wet and dry weather along the Byram River to assess the water quality of the river and the watershed and to calibrate and refine a hydrologic mathematical model; collaborate with the Croton-Kensico Watershed Intermunicipal Coalition to develop a regional map of a municipal storm sewer system within a sub-watershed of the Croton-Kensico watershed; and act as a pass-through entity to provide Long Island-wide (Nassau and Suffolk counties) municipal separate storm sewer system (MS4) management planning assistance.

The Commission will continue to pursue funding opportunities that support and further IEC's vital role in water quality monitoring and planning. As funds become available, all ambient water quality programs will be expanded so that water quality stations are established in all assessment units. The Commission will collaborate with other interstate agencies, member state and federal entities and other environmental stakeholders in the region. This is done through solicited and unsolicited grants from a variety of funding sources with the primary objective to fund applied water quality research and projects that will bring benefits to waterways throughout the Interstate Environmental District. Green infrastructure (GI) technologies have the potential to mitigate a variety of stormwater issues. The IEC, funded under the auspices of the NY-NJ Harbor Estuary Program and NY/NJ Baykeeper is working on a project to implement and assess the effectiveness of green infrastructure technology for reducing combined sewer overflows in Newark, NJ.

# INTRODUCTION

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The Interstate Environmental Commission is a tri-state environmental agency serving the States of New York, New Jersey and Connecticut. The Commission was established in 1936 by the Tri-State Compact which was approved by the States of New York and New Jersey and consented to by the U.S. Congress. Connecticut ratified the Compact in 1941. The Commission's website, [www.iec-nynjct.org](http://www.iec-nynjct.org), contains important information on IEC, its staff and programs.

Over the years, many of the area's environmental and health departments changed their names to better reflect their missions. Due to its interstate nature and jurisdiction, to change the name of the Commission requires the adoption of appropriate legislation in all three member states, followed by the Consent of Congress. The last step in this process, the Consent of Congress, took place on October 27, 2000, when the President of the United States signed the Bill containing the language that changed the name of this agency from Interstate Sanitation Commission to Interstate Environmental Commission. The new name brings the Commission into the 21st century and more accurately reflects the Commission's mandates, mission and responsibilities that embrace a broad range of programs and activities.

The Commission has an overall responsibility to protect the environment by viewing the District from a regional, impartial and unbiased perspective. Whereas each state deals with issues within its own borders, the Commission can and does cross state lines. The Commission strives for interstate cooperation and coordination and to harmonize water quality standards, regulations and requirements throughout its District. The Commission's mandate to protect this Tri-State Region's waters — governed by the Tri-State Compact, Statutes, and the IEC's Water Quality Regulations — is as important today as it was in the 1930s. The Commission's regulations, codified in the laws of its member States, ensure standards are met. Commission programs and activities include response to water and air pollution complaints, pathogens monitoring, compliance monitoring, and public education and outreach. However, the IEC's continuing emphasis is on water quality — an area in which the Commission is a regulatory and enforcement agency.

This Integrated Report assesses the waters of the Interstate Environmental District and determines the degree that these waters support their designated uses. The Commission relies on site specific monitoring to assess water quality conditions with no use of predictive tools, such as probability-based monitoring and models.

Issues which continued to be of concern to the Commission during the reporting period include compliance with IEC's Water Quality Regulations, toxic contamination of sediments, pollution from combined sewer overflows and sanitary sewer overflows (MS4s) and the protection of shellfish harvesting and bathing beach waters. Additional concerns include operation and maintenance of infrastructure, including sewers, the development of additional plant capacity to handle increased flows from major new development projects, and the need for treatment process upgrades to control nitrogenous constituents in effluent discharges.

# BACKGROUND

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## Total Waters

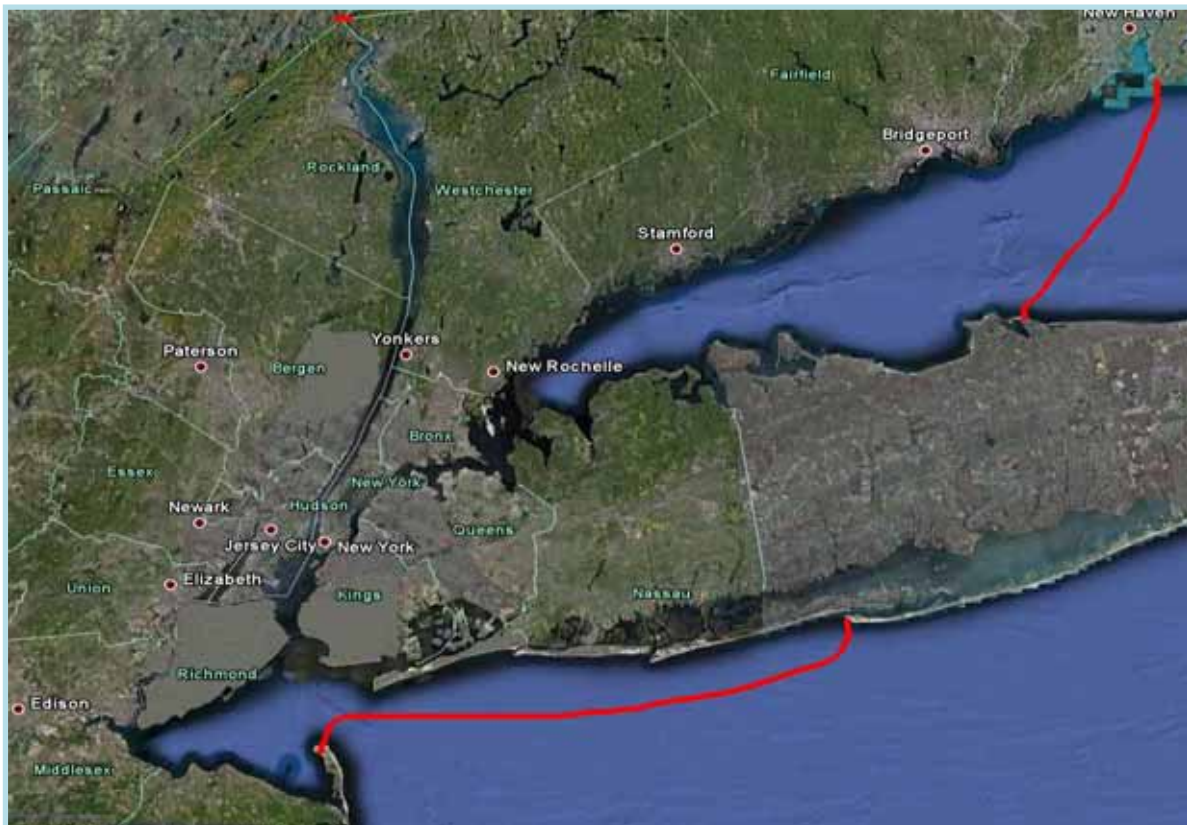
### The Interstate Environmental District

The Interstate Environmental District (the District) encompasses approximately 797 square miles of surface waters. These waters are all estuarine and are either part of one or shared by two of the Interstate Environmental Commission's three member States, namely, New York, New Jersey and Connecticut. The District includes, but is not completely made up of, such vital bodies of water as the New York-New Jersey Harbor (the rivers, bays, and straits in the estuary near the mouth of the Hudson River), the western Long Island Sound with its embayments, the Jamaica Bay, part of the Long Island south shore waters and part of the Atlantic Ocean.

A depiction of the Commission's District is presented in Figure 9.

#### FIGURE 9. The Interstate Environmental District

(All of the coastal, estuarine and tidal waters enclosed by the 3 red boundary lines)



In more specific terms, the Interstate Environmental District, as described in Article II of the Tri-State Compact, is comprised of all coastal, estuarine and tidal waters within or covering portions of New York, New Jersey and Connecticut as follows:

- In Connecticut, the Long Island Sound and estuaries and tidal waters thereof between the easterly side of New Haven Harbor at Morgan Point and the Connecticut-New York State boundary and the Housatonic River up to the northerly boundary lines of the towns of Stratford and Milford.
- In New York, all of the tidal waters of Greater New York City; including the Kill Van Kull and Arthur Kill, Long Island Sound and the estuaries and tidal waters thereof between the New York City line and the New York-Connecticut State boundary and between the New York City line and the easterly side of Port Jefferson Harbor; the Atlantic Ocean and the estuaries and tidal waters thereof between the New York City line and the easterly side of Fire Island inlet; and the Hudson River and estuaries and tidal waters thereof between the New York and New Jersey State boundary and the northerly line of Rockland County on the westerly side and between the northerly line of New York City and the northerly line of Westchester County on the easterly side of the River.
- In New Jersey, the Hudson River and New York Upper Bay and estuaries and tidal waters thereof between the New York-New Jersey boundary and Constable Point on Constable Hook, the Kill Van Kull and Arthur Kill to the mouths of the rivers entering into the Kills; Newark Bay and the estuaries thereof up to the mouth of the Passaic River; and up to the mouth of the Hackensack River; Raritan Bay together with the Raritan River up to the Victory Bridge on said River between Perth Amboy and South Amboy; together with the Cheesequake Creek up to the New York and Long Branch Railroad Bridge on said Creek at Morgan; together with the Matawan Creek up to the New York and Long Branch Railroad Bridge on said Creek at Matawan; Sandy Hook Bay; together with the Shrewsbury River up to the passenger railroad bridge between Navesink Light and Highland Beach on said River.

## Table 1.     ATLAS

<b>TOPIC</b>	<b>VALUE<sup>(1)</sup></b>
District Population	<b>13,915,085</b>
Total Miles of River and Streams	<b>86.75</b>
Miles of perennial rivers/streams (total)	<b>92.28</b>
Hudson River	47.08
Harlem River	7.60
East River	16.04
Arthur Kill / Kill Van Kull	17.76
Newtown Creek	3.80
Miles of intermittent (non-perennial) streams	0
Miles of ditches and canals	0
Border miles of shared rivers/streams	<b>39.54</b>
Hudson River	21.78
Arthur Kill / Kill Van Kull	17.76
Number of lakes/reservoirs/ponds	0
Number of significant publicly owned lakes/reservoirs/ponds	0
Acres of lakes/reservoirs/ponds	0
Acres of significant publicly owned lakes/reservoir/ponds	0
Square Miles of estuaries/harbors/bays	<b>797</b>
Miles of Ocean Coast	<b>47.31</b>
Coney Island Segment	4.38
Rockaway Segment	10.55
Long Beach Island Segment	9.42
Jones Beach Island Segment	14.66
Fire Island Segment	8.30
Acres of Freshwater Wetlands	0
Acres of Tidal Wetlands	Not Available

(1) POPULATION:

Estimated based on annual questionnaire replies provided from wastewater treatment plants which discharge into the Interstate Environmental District.

MILES:

A fairly accurate estimate obtained using the tools provided by Google Earth.



## Classifications of District Waters

There are two classes of waters within the Interstate Environmental District: Class A and Class B. Class B is further divided into two subclasses, B-1 and B-2. Different classifications of waters are appropriate for different areas because of varying activities associated with industry, commerce (including waterborne transportation), recreation, and aesthetic enjoyment.

### Class A

Suitable for all forms of primary and secondary contact recreation and for fish propagation. In designated areas, they also shall be suitable for shellfish harvesting.

### Class B-1

Suitable for fishing and secondary contact recreation. They shall be suitable for the growth and maintenance of fish life and other forms of marine life naturally occurring therein, but may not be suitable for fish propagation.

### Class B-2

Suitable for passage of anadromous fish and for the maintenance of fish life in a manner consistent with the criteria established by the general regulations.

The following waters of the Interstate Environmental District are classified as Class A:

- the East River east of the Whitestone Bridge and extending out and including the Long Island Sound waters west of a line from the easterly side of New Haven Harbor at Morgan Point in Connecticut to the easterly side of Port Jefferson Harbor in New York;
- the Hudson River from the New York-New Jersey State line opposite Hastings-on-Hudson to the northerly line of Rockland County on the westerly side and the northerly line of Westchester County on the easterly side;
- the Hudson River from its confluence with the Harlem River to the New York-New Jersey State line opposite Hastings-on-Hudson;
- the Raritan River east of the Victory Bridge and into Raritan Bay and to the lower end of the Arthur Kill on a line drawn from the southernmost point of Staten Island to the southernmost point of Perth Amboy;
- Sandy Hook Bay;
- the lower New York Bay northerly to a line drawn from the tip of Fort Wadsworth on Staten Island to the tip of Seagate in Brooklyn; and
- the Atlantic Ocean and the estuaries and tidal waters thereof west of the easterly side of Fire Island Inlet and continuing into lower New York Bay.

The following waters of the Interstate Environmental District are classified as Class B-1:

- the Hudson River south of a line from the confluence with the Harlem River into the upper New York Harbor and the portion of the Lower Bay which is north of a line from Fort Wadsworth in Staten Island to the tip of Seagate in Brooklyn. For the purposes of these regulations, the upper New York Harbor terminates at the mouth of the Kill Van

Kull (at a north-south line drawn from the northernmost point of Staten Island to the easternmost point at Constable Hook in Bayonne);

- the waters of the East River north of a true east-west line passing through the southernmost tip of Manhattan Island to the Battery extending to the Whitestone Bridge (except Newtown Creek) and including the Harlem River to its confluence with the Hudson River;
- the lower portion of the Arthur Kill north of a line from the southernmost part of Staten Island to the southernmost part of Perth Amboy and south of Outerbridge Crossing.

The following waters of the Interstate Environmental District are classified as Class B-2:

- The waters of the Arthur Kill north of Outerbridge Crossing and into and including the Newark Bay up to the mouths of the Passaic and Hackensack Rivers and into the Kill Van Kull west of a north-south line drawn from the northernmost point of Staten Island to the easternmost point at Constable Point in Bayonne.
- Newtown Creek.

An illustration of the Commission's waterbody classifications is provided in Figure 10.

**FIGURE 10. Water Classifications in the Interstate Environmental District**  
(Blue Areas: Class A, Yellow Areas: Class B-1, Red Areas: Class B-2 Waters)





As used in these classifications:

- “Primary Contact Recreation” means recreational activity that involves significant ingestion risk, including but not limited to wading, swimming, diving, surfing, and waterskiing.
- “Secondary Contact Recreation” means recreational activity in which the probability of significant contact with the water or water ingestion is minimal including but not limited to boating, fishing, and shoreline recreational activity involving limited contact with surface waters.

Streams and other bodies of water should in all respects be suitable for their intended uses. All waters should be aesthetic assets and, at a minimum, be available for those recreational uses which do not bring the human body into direct contact with the water.

## Water Quality Regulations

The Commission’s water quality regulations predate US EPA and State organization regulations and apply to all waters within the Interstate Environmental District. In addition, each class or subclass of the waters should meet the requirements and be available for the uses as provided for that class or subclass (fishable, swimmable and/or aesthetically acceptable).

Water quality regulations include general and specific requirements. Below is a listing of the Commission’s regulations that are applicable in assessing waterways for the purposes of the Integrated Report. A complete listing of the Commission’s regulations can be retrieved from its website at: [www.iec-nynjct.org](http://www.iec-nynjct.org).

### ➤ General Requirements

- All waters of the Interstate Environmental District (whether of Class A, Class B, or any subclass thereof) shall be of such quality and condition that they will be free from floating solids, settleable solids, oil, grease, sludge deposits, color or turbidity to the extent that none of the foregoing shall be noticeable in the water or deposited along the shore or on aquatic substrata in quantities detrimental to the natural biota; nor shall any of the foregoing be present in quantities that would render the waters in question unsuitable for use in accordance with their respective classifications.
- No toxic or deleterious substances shall be present, either alone or in combination with other substances, in such concentrations as to be detrimental to fish or inhibit their natural migration or that will be offensive to humans or which would produce offensive tastes or odors or be unhealthful in biota used for human consumption.
- No sewage or other polluting matters shall be discharged, permitted to flow into, be placed in, or permitted to fall or move into the waters of the District, except in conformity with these regulations.



### **Specific Requirements**

- Streams and other waterbodies shall have a minimum dissolved oxygen content in accordance with their respective classifications as follows:

Class A: minimum dissolved oxygen content of 5 milligrams per liter at any time;

Class B-1: minimum dissolved oxygen content of 4 milligrams per liter at any time;

Class B-2: minimum dissolved oxygen content of 3 milligrams per liter at any time;

- For effluents discharged or flowing into District waters, a pH within the range from 6.0 to 9.0 may be required if the receiving waters are outside this range.

# Water Pollution Control Program

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The Commission's programs are geared towards addressing environmental deficiencies and/or assuring compliance with the Tri-State Compact and the Commission's Water Quality Regulations. The programs are designed for gathering the information necessary for enforcement actions, opening waters for commercial and recreational shellfishing, opening waters for swimming, developing water quality and/or effluent criteria, determine immediate environmental conditions, responding to environmental emergencies, and other needs that may arise.

To address the environmental problems within its area of jurisdiction, the Commission has focused on technical assistance, enforcement, engineering, planning, laboratory analysis, ambient and effluent water quality monitoring, statistical analysis, coordination, oversight, and legislative/public outreach and education. The Commission continues to put great emphasis and a high priority on education and outreach activities, which includes testifying at public hearings and meetings on various issues of concern; lecturing at local schools, colleges and community groups; and participating in seminars and forums involving environmental professionals and the general public. For many years, Commission staff has interacted with volunteer citizen water quality monitoring groups.

The Commission's water pollution abatement programs continue to focus on the effective coordination of approaches to regional problems. In many cases, IEC is the sole agency monitoring a particular waterbody or portion thereof. The coordination with the member states of New York, New Jersey and Connecticut is important. Due to budget shortfalls and staff reductions, many IEC ambient water quality programs are designed to address data gaps, seasonal and temporal deficiencies and regulatory requirements. To ensure that states have adequate time for their public noticing processes, IEC disseminates all ambient and effluent water quality data collected in situ or from subsequent IEC laboratory analyses within 30 days of collection, year-round. In addition, all data and metadata is entered into STORET.

Opening additional areas for swimming and shellfishing remains a high Commission priority. The IEC's programs include enforcement; minimization of the effects of combined sewers, stormsewers, and municipal separate stormsewer systems; participation in the National Estuary Program; public involvement, education and outreach; control of floatables; compliance monitoring; pretreatment of industrial wastes; toxics contamination; sludge disposal; dredged material disposal; and monitoring the ambient waters — especially with regard to opening new areas for swimming and shellfishing.

The Commission remains actively involved with the Long Island Sound Study and the New York-New Jersey Harbor Estuary Program — both part of the National Estuary Program. IEC participates on the Management Committees, implementation and planning teams, and on various workgroups for these studies. With the Comprehensive Conservation and Management Plans for the LISS and the HEP in place, IEC remains involved with the workgroups that are dealing with total maximum daily loads for pathogens, nutrients and toxics. The Commission

has also been involved with research proposal committees, science and technical advisory committees and interactions with citizen advisory committees throughout the District.

IEC's research vessel, the R/V Natale Colosi, is available to sail year-round. The year 2009 proved to be yet another very active year of water quality monitoring. This was IEC's 19th consecutive year as a participant in the multi-agency intensive survey in Long Island Sound to continue to document dissolved oxygen conditions. For the 14th year in a row, the Commission collected water quality samples needed by the New Jersey Department of Environmental Protection to check the sanitary conditions of the shellfish waters of western Raritan Bay. In support of the New York-New Jersey Harbor Estuary Program and New York State Department of Environmental Conservation's Hudson River Estuary Management Program, the IEC has scheduled its fourth year of a pathogens monitoring program on the Hudson River. The Commission continues pathogens trackdown investigations on the Byram River, a NY-CT interstate waterway. IEC coordinates its compliance monitoring program with its three member states' environmental departments, as well as with US EPA. This program consists of the Commission regularly sampling waste discharges from municipal and industrial permittees throughout the District. The Commission also takes an active role in the World Water Monitoring Day and National Marina Day.

The Commission coordinates the efforts of the Regional Bypass Workgroup, which is comprised of 16 federal, interstate, state, county and local agencies. The Workgroup maintains notification protocols to inform each other of unplanned bypasses and protects the health of the public, by the use of sophisticated modeling software, developed especially to predict the potential impact of those bypasses on area beaches and shellfish beds.

The IEC laboratory — a nationally certified environmental facility — has been located on the campus of the College of Staten Island (CSI) since late 1993. In addition to its day-to-day operations, the Commission's laboratory personnel continue to collaborate with CSI on environmental projects of mutual concern.

# Cost/Benefit Assessment

The Interstate Environmental Commission collects information annually from regulated facilities that discharge into its District. The Commission compiles useful information regarding the amount and the way money was spent by these facilities during each year from responses to questionnaires developed to monitor their activity.

Within the Interstate Environmental District in 2008, over \$12.5 billion was allocated for 292 water pollution control projects which were either completed, in progress, or planned for the future. These monies were allocated in the following manner: over \$108 million for 38 completed projects, more than \$8.85 billion for 178 projects in progress, and more than \$3.56 billion for 76 future projects. In 2009, just about \$15 billion was allocated for over 271 water pollution control projects. These expenditures are being used for engineering studies, pilot projects and experiments; CSO abatement projects; stormwater remediation; land-based alternatives for sewage sludge disposal; construction of new facilities; and upgrading and/or expanding existing facilities in order to provide adequately treated wastewater for discharge into District waterways. These figures do not include the monies spent by and committed to pollution control by industries. Detailed expense information can be retrieved from the Commission's Annual Reports, available at its website at [www.iec-nynjct.org](http://www.iec-nynjct.org).

TABLE 2. 2009 FACILITY EXPENDITURES (\$)				
STATE	Completed Projects	Current Projects	Future Projects	Total Expenditures
Connecticut	35,360,000	\$926,651,745	\$482,675,000	<b>\$1,444,686,745</b>
New Jersey	113,583,700	\$210,704,193	\$64,500,000	<b>\$388,787,893</b>
New York	113,583,700	\$9,072,418,045	\$3,966,961,000	<b>\$13,152,962,745</b>
<b>Total</b>	<b>\$262,527,400</b>	<b>\$10,209,773,983</b>	<b>\$4,514,136,000</b>	<b>\$14,986,437,383</b>

# Special State Concerns and Recommendations

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Throughout the years, improvements in the water quality of the whole Region are evident. However, the region still faces problems — some of which are local, and some more far-reaching. Hypoxia, sediment contamination, pathogens, habitat loss, combined sewer overflows (CSOs), urban runoff, municipal separate storm sewer systems (MS4s), atmospheric deposition, invasive species, global warming, impacts on living marine resources, land use issues and public education have all been identified as priority areas of concern. All of these issues have socio-economic impacts throughout the Region. The IEC is also advancing studies and applications on green technology and emerging pollutants as well as remediating the effects of wastewater treatment byproducts that may harm delicate ecosystems.

The Commission recognizes the necessity of long-term water quality monitoring that allows for spatial and temporal assessments. It is a long-term goal to establish water quality monitoring stations in all assessment units. It is recommended that the established programs continue:

- Ambient Water Quality Monitoring in Long Island Sound to Document Dissolved Oxygen Conditions
- Microbiological Surveys in the Shellfish Harvesting Waters of Western Raritan Bay
- Ambient Water Quality Monitoring for Pathogens in the Hudson River
- Pathogen Track Down on the Byram River
- Effluent Compliance Monitoring of Municipal Treatment Facilities Discharging to District Waters in New York, New Jersey and Connecticut
- NYS DEC- Region 2, Reconnaissance and Comprehensive Inspections
- Effluent Compliance Monitoring of Industrial Wastewater Treatment Facilities Discharging to District Waters
- Combined Sewer Overflow Dry Weather Inspections
- Municipal Storm Sewer System Dry Weather Inspections
- Regional Bypass Work Group: Chair, Clearing House of District Bypass Events, Coordination of Notification Protocols

The Commission will continue to conduct pathogen track down as resources allow. The Commission also plans to continue and expand legislative/public education outreach through its website, participation in National Estuary Programs, and various publications.

# SURFACE WATER MONITORING AND ASSESSMENT

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## Monitoring Program

The Interstate Environmental Commission collects a large amount of ambient and effluent water quality data year-round. The Commission's intensive monitoring programs cover significant portions of the Interstate Environmental District, but not all. Data are collected for a variety of reasons, such as ensuring compliance with the Commission's and States' regulations, assessing water quality in District waterbodies, checking bathing beach quality, determining the sanitary conditions of shellfish harvesting beds, observing status and trends, verifying the impact of management decisions, i.e., treatment plant nutrient reduction and specific research needs. Complete information on the Commission's wide-range of activities and programs can be accessed through its website at [www.iec-nynjct.org](http://www.iec-nynjct.org).

The IEC's annual Management Plan is prepared in cooperation with its member States in order to address data gaps, avoid duplicity and address issues of mutual concern. The year-round ambient and effluent sampling efforts are conducted in order to check compliance with established municipal and industrial NPDES/SPDES limitations and requirements; in response to data gaps identified by the IEC's member States; in response to needs of the two National Estuary Programs (NEPs) in the Commission's jurisdiction: Long Island Sound Study (LISS) and New York-New Jersey Harbor Estuary Program (HEP), as well as for the needs of the NYS DEC's Hudson River Estuary Management Program.

## Data and Metadata Sources

Data and metadata submitted upon request to IEC for water quality assessments are accepted in any format: electronic or hard copy. Generally, spreadsheets and databases, as well as narrative information and locator maps are appropriate and useful formats. The water quality assessments provided in this report are based upon data and metadata from the following sources:

- New York City Department of Environmental Protection
- New York City Department of Health and Mental Hygiene
- New York State Department of Environmental Conservation, Regions 1, 2 and 3
- New York State Department of Environmental Conservation, Marine Resources
- New York State Department of Environmental Conservation, Shellfish Section
- Connecticut Department of Environmental Protection
- Connecticut Department of Agriculture/Bureau of Aquaculture

- Nassau County Health Department
- National Park Service
- New Jersey Department of Environmental Protection
- New Jersey Department of Environmental Protection, Bureau of Marine Water Classification and Analysis
- Rockland County Health Department
- Suffolk County Health Department
- Westchester County Health Department
- US Coast Guard
- New York – New Jersey Bay Keeper
- Long Island Sound Bay Keeper
- Hudson River Bay Keeper
- Coalition to save Hempstead Bay
- Friends of the Bay

## Data and Metadata Used in Support Assessments

Depending on the waterbody data availability, any one or a combination of several types of data may be used to assess water quality and use support: ambient physical and chemical parameters, indicator bacteria, benthic invertebrate and fish community, aquatic toxicity, tissue contaminants, sediment chemistry/toxicity and effluent analysis. The following sources of data and metadata are considered in conducting water quality assessments:

- Results of recent ambient water quality monitoring
- Results of municipal and industrial compliance monitoring and DMRs
- Construction status of municipal pollution control facilities and associated infrastructure
- Recent/past 305(b) reports
- Recent/past IEC Annual Reports
- Reports of water quality problems provided by local, state, and/or federal agencies, volunteer monitoring groups, citizen observations/complaints and/or academia
- Fish advisories and/or emergency seasonal closures and/or restrictions
- Shellfish advisories and/or emergency closures and/or restrictions
- Restrictions on water sports or recreational contact
- Planned bypass events
- Unplanned bypass events
- CSO, SSO, MS4 dry weather inspections

## General Data Quality Requirements

In situ measurements and analytical data from the Commission's nationally certified environmental laboratory are used to assess water quality and use impairments in District waterbodies. All data adheres to quality requirements of the National Environmental Laboratory Accreditation Program (NELAP).



In order to maintain accuracy and reliability in the assessments of the Integrated Report and in other Commission environmental decisions and regulatory programs, IEC prepares Quality Assurance Project Plans (QAPPs) for US EPA's approval. All ambient and effluent monitoring programs whether planned or reactive, are conducted under the auspices of approved QAPPs prior to the initiation of all monitoring projects. Subsequently, any data used for assessment purposes must be accompanied by a QAPP that meets IEC's requirements for monitoring data and metadata. It is recognized that data collected by the cited city, county, state or federal agencies or grass roots organizations have met the appropriate quality assurance requirements to be used in water quality assessments.

## Reporting Requirements

This assessment addresses the marine interstate waters shared by the Commission's member states of New York, New Jersey and Connecticut. Integrated reports that satisfy the reporting requirements of 305(b) also satisfy the 305(b) reporting requirements for Section 106 grant funds. For States (Interstates) to be eligible for Section 106 grant funds, Section 106(e)(1) requires States (Interstates) must have the means to monitor water quality and include updates in Section 305(b) submittals. Updates to the STORET national data warehouse satisfy the conditions of Section 106(e)(1) for the purposes of receiving Section 106 funds.

# General Assessment Methodology

This assessment methodology discusses how the Interstate Environmental District's waterbodies are delineated into assessment units (AUs) and how data collected from within these waterbodies or portions thereof, are used to evaluate designated use support. This section discusses: the general and parameter specific data quality requirements for making use support decisions; the sources of data used for the assessments; the method of assigning the waterbodies to one of five general categories; the way that estuarine waters of the Interstate Environmental District are delineated into assessment units; and how data collected from within those assessment units are used to evaluate designated use support.

## Uses Assessed

The Interstate Environmental District's waterways are delineated into assessment units (AUs) and data collected from within these assessment units or portions thereof, are used to evaluate designated use support. The designated uses that are assessed are:

- Aquatic Life Support
- Fish Consumption
- Shellfish Consumption
- Primary Contact Recreation
- Secondary Contact Recreation.

## Levels of Support

In making water quality assessments, each of the assessment unit's designated uses is assigned a level of support, which characterizes the degree to which the waterbody is suitable for that use. Based on available data and metadata, the degree that each assessment unit supports each use is quantified and, according to predetermined criteria, assessment units are placed into one of five general categories:

- Fully Supporting  
The waterbody is suitable for the designated use.
- Full Supporting but Threatened  
The waterbody currently supports the designated use, but may not in the future due to degrading water quality or the existence of pollution threats that may impair water quality.

- Not Supporting  
The waterbody does not support the designated use some or all of the time.
- Not Assessed - Use Not Assigned  
The waterbody is not assigned the use because of its classification.
- Not Assessed - Insufficient Data.  
Available data or metadata is not adequate and no credible information is available to assess use support.

## Assigning Integrated Categories

When the assessment unit is assessed based on relevant criteria for determining if all designated uses have been met, that waterbody is then placed into one of five categories that describe both the level of use support and the degree to which available data can be used to accurately assess use support. The five categories into which each assessment unit can be placed are as follows:

- Category 1  
All designated uses are supported, no use is threatened.
- Category 2  
Available data and/or information indicate that some, but not all of the designated uses are supported.
- Category 3  
There is insufficient available data and/or information to make a use support determination.
- Category 4  
Available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed.
  - Category 4a  
Available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed because a state-developed TMDL has been approved by US EPA or a TMDL has been established by US EPA for any segment-pollutant combination.
  - Category 4b  
Available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed because other control measures (i.e., NPDES permits, BMPs, source remediation) are expected to result in the attainment of an applicable water quality standard in a reasonable period of time.

■ Category 4c

Available data and/or information indicate that at least one designated use is not being supported or is threatened, but a TMDL is not needed because the non-attainment of any applicable water quality standard for the segment is the result of pollution, habitat alteration or lack of adequate flow and is not caused by a pollutant and a TMDL is not required.

➤ Category 5

Available data and/or information indicate that at least one designated use is not being supported or is threatened, and a TMDL is needed.

## Assessment Unit Delineation

For the purposes of assessing designated use support, District waters are delineated into 21 assessment units as follows:

**TABLE 3. Assessment Units**

<b>AU</b>	<b>WATER BODY</b>	<b>LOCATION DESCRIPTION</b>	<b>SIZE (Sq. mi.)</b>
1	Arthur Kill	North of a line from the southernmost part of Staten Island (Richmond County) known as Ward Point, New York, west to the southernmost part of Perth Amboy, New Jersey, north to the Outerbridge Crossing; bounded by Richmond County, New York, on the east and Middlesex County, New Jersey, on the west.	0.64
2	Arthur Kill/Kill van Kull	North of a line from the Outerbridge Crossing to the confluence of the Kill van Kull and the Upper New York Bay at a north-south line between Constable Hook, Bayonne, New Jersey, and St George, Staten Island, New York, including the mouths of the rivers (Woodbridge Creek, Rahway River, Fresh Kills, Piles Creek, Morses Creek, Elizabeth River) entering into the Kills.	7.97
3	Atlantic Ocean	Open waters west of the easterly side of Fire Island Inlet to the transect from Sandy Hook, New Jersey, to Rockaway Point, New York, extending three (3) miles off shore.	135.0
4	East River-upper	Whitestone Bridge east to the Throgs Neck Bridge; bounded by the Bronx County, New York, shoreline on the north and the Queens County, New York, shoreline on the south.	0.75
5	East River-lower	North of a true east-west line between the Battery at the southern tip of Manhattan (New York County) and the Brooklyn (Kings County) shoreline north to the Whitestone Bridge including the mouths of the Harlem River, Bronx River, Westchester Creek, Pugsley Creek and Flushing Bay and Bowery Bay.	12.55
6	Harlem River	From the confluence with the East River north to the confluence of the Hudson River; bounded by the New York (Manhattan) County shoreline on the west and the Bronx County shoreline on the east.	0.56
7	Hudson River-upper	North of a true east-west line from the mouth of the Harlem River to the Bergen County, New Jersey, shoreline to the northerly line of Rockland County, New York, on the western shoreline and between the northerly line of Bronx County, New York, and the northerly line of Westchester County, New York, on the eastern shoreline.	52.47

**TABLE 3. Assessment Units, Cont'd**

<b>AU</b>	<b>WATER BODY</b>	<b>LOCATION DESCRIPTION</b>	<b>SIZE (Sq. mi.)</b>
<b>8</b>	Hudson River-lower	North of a true east-west line from the southern tip of Manhattan (New York County) and Jersey City (Hudson County), New Jersey, to a true east-west line from the mouth of the Harlem River to the Bergen County, New Jersey, shoreline; and bounded by the New Jersey shoreline on the west and Manhattan Island (New York County) on the east.	11.14
<b>9</b>	Jamaica Bay	Bounded by the shorelines of Brooklyn (Kings County), Queens (Queens County), and Nassau County, New York, extending westward to a north-west line between Rockaway Point and Norton Point, Coney Island, Kings County, New York.	11.32
<b>10</b>	Long Island Sound - west	East of a true north-south line located at the Throgs Neck Bridge at the confluence of the East River to a northerly ( $18^0$ true) transect from Matinecock Point, Nassau County, New York, to the New York-Connecticut state boundary; bounded on the north by Bronx and Westchester Counties, New York, shorelines including Eastchester Bay to the confluence with the mouth of the Hutchinson River; and bounded on the south by Queens and Nassau Counties, New York, including the embayments of Little Neck Bay, Manhasset Bay and Hempstead Harbor.	93.74
<b>11</b>	Long Island Sound - CT	East of the New York-Connecticut state boundary at the confluence of the Byram River to New Haven Harbor at Morgan Point including all harbors and the mouths of all rivers (Greenwich Creek, Mianus River, Rippowam River, Goodwives River, Fivemile River, Norwalk River, Saugatuck River, Mill River, Pequonnock River, Housatonic River) entering into Long Island Sound south to the New York-Connecticut state boundary.	225.0
<b>12</b>	Long Island Sound - East	East of a northerly ( $18^0$ true) transect from Matinecock Point, Nassau County, New York, to the easterly side of Port Jefferson Harbor, New York; bounded on the north by the New York-Connecticut state boundary; and bounded on the south by the Nassau and Suffolk Counties, New York, shorelines including the embayments of Oyster Bay/Cold Spring Harbor, Huntington Bay/Northport Harbor, and Stony Brook Harbor.	81.26

**TABLE 3. Assessment Units, Cont'd**

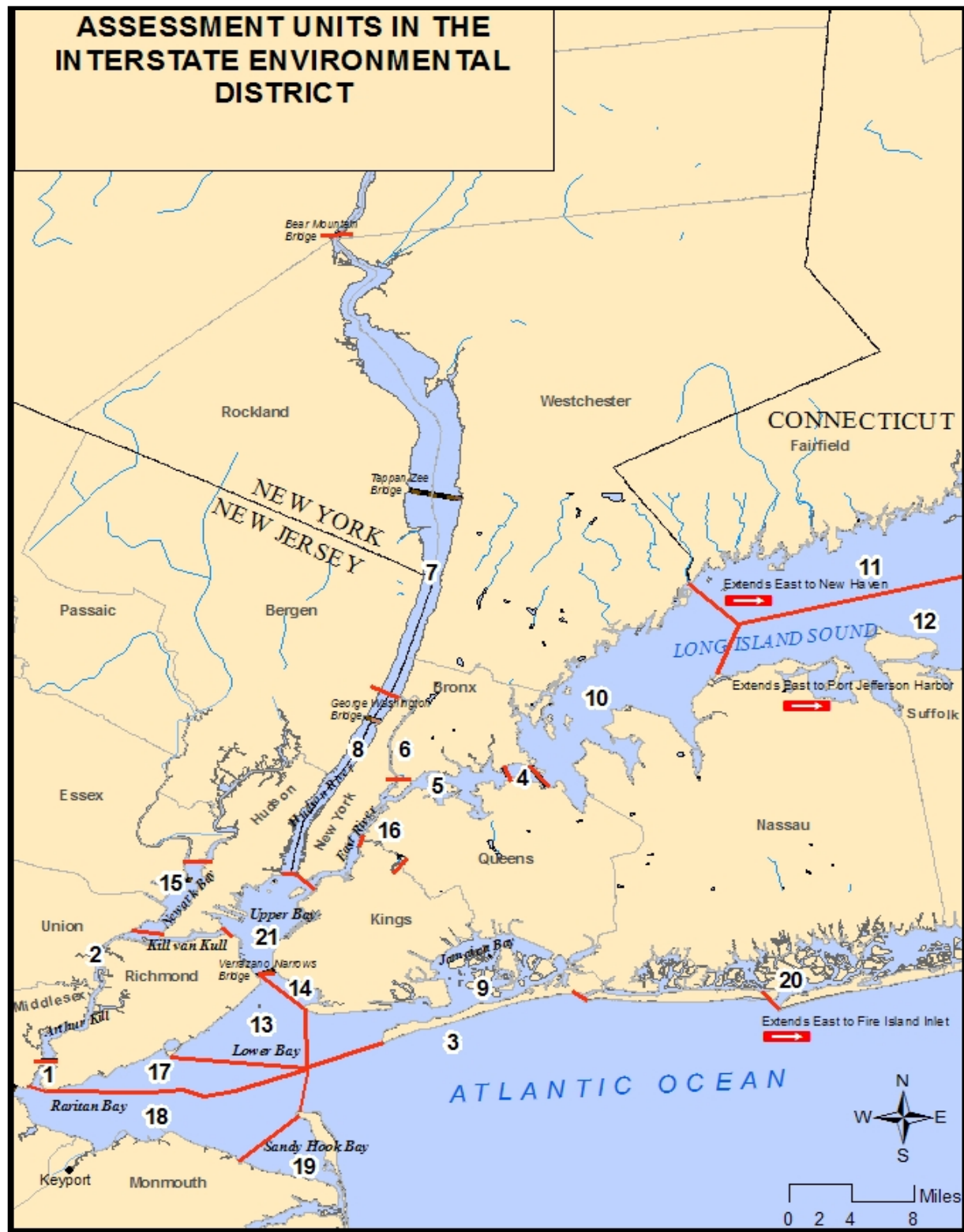
<b>AU</b>	<b>WATER BODY</b>	<b>LOCATION DESCRIPTION</b>	<b>SIZE (Sq. mi.)</b>
<b>13</b>	Lower NY Bay	The area bounded on the west by Staten Island, New York, eastward to a south westerly line from Fort Wadsworth to Norton Point, Coney Island and south from a true north-south line from Norton Point intersecting a true east-west line from Crookes Point, Staten Island, New York.	46.52
<b>14</b>	Gravesend Bay	Bounded by an east-west line at the Verrazano Narrows Bridge and a southern transect from Fort Wadsworth, Staten Island, New York, to Norton Point, Coney Island, Brooklyn, New York, to the mouth of Coney Island Creek.	0.77
<b>15</b>	Newark Bay	Bounded by an east-west line from Bergen Point, Bayonne, New Jersey, to Elizabeth, New Jersey, north to the confluences of the Passaic and Hackensack Rivers; bounded on the east by the Newark, New Jersey, shoreline and on the west by the Bayonne, New Jersey, shoreline.	4.28
<b>16</b>	Newtown Creek	From the confluence of the East River to the bulkheaded terminus; bounded by the Queens County, New York, shoreline on the north and the Kings County, New York, shoreline on the south.	0.24
<b>17</b>	Raritan Bay - NY	Bounded on the west by Staten Island, New York, eastward to the New York-New Jersey state line and bounded by a true east-west line from Crookes Point, Staten Island, New York to intersect a true north-south line extending from Norton Point, Coney Island, New York.	37.78
<b>18</b>	Raritan Bay - NJ	North from the Middlesex and Monmouth Counties, New Jersey, shoreline to the New Jersey-New York state boundary together with the Raritan River up to the Victory Bridge between Perth Amboy and South Amboy, New Jersey; together with the Cheesequake Creek up to the New York and Long Branch Railroad Bridge at Morgan; together with the Matawan Creek up to the New York and Long Branch Railroad Bridge at Matawan; eastward to the NWS Earle military pier.	27.44
<b>19</b>	Sandy Hook Bay	From the northern tip of Sandy Hook westward to the NWS Earle military pier; together with the Shrewsbury River up to the passenger railroad bridge between Navesink Light and Highland Beach, New Jersey; bounded on the south by the Monmouth County, New Jersey, shoreline.	14.78

**TABLE 3. Assessment Units, Cont'd**

<b>AU</b>	<b>WATER BODY</b>	<b>LOCATION DESCRIPTION</b>	<b>SIZE (Sq. mi.)</b>
<b>20</b>	East Bay Great South Bay	All waters south of the Nassau and Suffolk Counties, New York, shoreline to the north shore of the seaward barrier islands; bounded by the mouths of Debs Inlet, Jones Inlet and Fire Island Inlet.	12.42
<b>21</b>	Upper NY Bay	Bounded on the north by a true east-west line from the southern tip of Manhattan (New York County) and Jersey City (Hudson County), New Jersey, south to a true east-west line at the Verrazano Narrow Bridge; bounded on the west by New Jersey, the confluence of the Kill van Kull between the New York-New Jersey boundary and Constable Point on Constable Hook and Staten Island, New York; and on the east by the Kings County, New York, shoreline.	20.37



**FIGURE 11. Map of Assessment Units in the IED**



# AQUATIC LIFE SUPPORT USE ASSESSMENT: METHODOLOGY-SUPPORTING DATA-RESULTS

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Aquatic life use support is assigned to all waters of the Interstate Environmental Commission's District, regardless of the water class designation. In the absence of biological data, the Commission must rely on chemical water quality data and reports from volunteer citizen groups, health and environmental agencies to assess aquatic life use support in its District. Biological data integrate the effects of what has been done to the waterbody historically and provide a direct measure of aquatic life use support. Chemical water quality data provide short-term evaluations and verify if the instantaneous conditions within a waterbody are adequate for biota to live and reproduce without stress. Combining sufficient chemical water quality data that have been obtained at different times over the entire assessment period, or during worst possible conditions, could reliably determine whether waters are impaired.

In the absence of biological data, the Commission assesses aquatic life use support in its District waters using dissolved oxygen and pH data, as well as information collected by citizen groups and environmental organizations on fish kills or other catastrophic events. Based upon measurements of dissolved oxygen and pH, a water body is generally considered impaired when data are not in compliance with IEC's water quality criteria, providing that data and information is considered sufficient and credible. However, a single transgression of a criterion over a short time period will not result in impairment. To account for natural causes and transient events, the Commission considers the percentage of total measurements of dissolved oxygen concentrations lower than those specified in relevant water quality criteria, as well as their frequency and magnitude, prior to deciding whether these digressions can support a reliable impairment determination. The Interstate Environmental Commission's dissolved oxygen criteria are: not less than 5, 4 and 3 mg/l at any time for class A, B-1 and B-2 waters, respectively. All waters must have a pH between the range of 6 to 9.

To assess aquatic life use support, the Commission adheres to a methodology that takes into account existing chemical and physical water quality data, as well as biological data. A body of water is placed in the "Fully Supporting" category when both types of data yield positive results. In the absence of biological data though, an assessment of aquatic life use support, which has been based solely on chemical water quality data, is considered by the Commission complete only when: 1) in the end, it places waterbodies in the "Not Supporting" category, or 2) it places waterbodies in the "Fully Supporting" or the "Fully Supporting But Threatened" categories and there is as much evidence and information as necessary to provide a sound professional judgment and either stay with or reverse the conclusion. When biological data for a particular waterway are not available and chemical data indicate support, but there is not enough information to confirm or reverse the assessment, then, that waterway is placed in the "Not Assessed - Insufficient Information" category.

The Interstate Environmental Commission bases its aquatic life use support decisions on the:

1. criteria and data requirements outlined in detail in Table AL1;

2. physical/chemical analyses and information presented in Tables AL2 through AL9, including:
  - a) analyses of dissolved oxygen data for each year (2008 and 2009) individually and the assessment period as a whole (Tables AL2 through AL4);
  - b) analyses of pH data for each year (2008 and 2009) individually and the assessment period as a whole (Tables AL5 through AL7); and
  - c) fish kills information for 2008 and 2009 separately (Tables AL8 and AL9).

Following the presentation of the criteria, data requirements and supporting data, aquatic life use support assessments — based solely on physical/chemical data analyses and information on fish kills — are performed for each year, 2008 and 2009 (Tables AL10 and AL11). An overall and final assessment that combines each year's assessments, the absence of biological data and best professional judgment is presented in Table AL12.

In this report, biological data were not available. The Interstate Environmental Commission attempted to download biological data from STORET — US EPA's national water quality database — as well as chemical data that were submitted to STORET by organizations other than the Commission. Queries in New York, New Jersey and Connecticut, from the beginning of 2008 to the end of 2009, did not yield any biological data in the waters of the District. To assess aquatic life use support, the Interstate Environmental Commission analyzed chemical water quality data acquired through its ambient water monitoring programs, specifically, the Long Island Sound hypoxia surveys, Hudson River pathogen monitoring runs and World Water Monitoring Day runs. More information on these programs including station locations, frequency of sampling/monitoring and parameters measured can be retrieved from the Commission's website at: [www.iec-nynjct.org](http://www.iec-nynjct.org). A considerable amount of chemical water quality data provided by the New York City Department of Environmental Protection supplemented the Commission's own datasets. The Commission amassed over six and a half thousand measurements of dissolved oxygen and a smaller, but comparable, number of pH measurements. Dissolved oxygen and pH data were compared to applicable water quality standards, which resulted to an assessment of aquatic life support based on the Commission's methodology for chemical water quality data. Data collection followed field, laboratory and analytical protocols consistent with the collector's quality assurance and quality control requirements and objectives. All existing and readily available data and information was considered during the assessment process to better characterize the temporal and spatial variability of assessment units. Assessments based on larger sample sets are more likely to indicate the likelihood of water quality criteria exceedances than assessments based on smaller sample sets.

Assessment units along with the ambient water quality stations within those units — where data used for the assessment of several uses in this report were obtained — are shown in the following table:

**TABLE 4. WATER QUALITY STATIONS PER ASSESSMENT UNIT IN THE IED**

<b>AU #</b>	<b>IEC WATER QUALITY CLASSIFICATION</b>	<b>IEC STATIONS</b>	<b>NYC MONITORING STATIONS</b>
1	B-1		DK5, K5
2	B-2		K1, DK2, K2, DK3, K3, DK4, K4
3	A		N16
4	A	A1, A2M	E7, E8, E13, WC1, WC2
5	B-1		E5B, E5A, E5, E3, E1, DE2, E2, DE4, E4, DE6, E6, E14, E15, H5, FB1, FLC1, FLC2, STC1, BR1, BR2, BR3, BR4
6	B-2		H1, H2, H3, H4
7	A	HR8A, HR8, HR9, HR10, HR11, HR12, HR13, HR14, HR15, N1	HR8A, R8, HR9, HR10, HR11, HR12, HR13, HR14, HR15, N1, DN1,
8	B-1	N2, N3B, N4, N5	N3, N4, N5, DN3B, N3A, N3B, DN4, DN5, TR1, TR2, N3C
9	A		J1, J2, J3, DJ5, J5, J7, DJ8, J8, DN9, N9, J9A, DJ11, J11, DJ12, J12, N9A, J9, J10, PB1, PB2, HC1, HC2, PB2, PB3, SP1, SP2, BB2, BB4, EMB1, EMB2, HC3, MB1, MB3, SB1, SB3, SHB1
10	A	8-403, 8-405, A3, A4, A5, 9-409, 9-412, 9- 413, H-D, H-C, H-C1, H-B, HA-3, DI1, DI2	E9, E10, E11, E12, E12A, AC1, LN1
11	A	B1S, B2	
12	A	B3M, B4	
13	A		N8A
14	B-1		
15	B-2		
16	B-2		NC0, NC1, NC2, NC3, E2A
17	A		DK5A, K5A, K6, C6
18	A		
19			
20	A		
21	B-1		G1, G2, GC2, GC3, GC4, GC5, GC6

**TABLE AL1. CHEMICAL/PHYSICAL AQUATIC LIFE USE ASSESSMENT CRITERIA**

<b>CRITERIA</b>	<b>DESIGNATED USE SUPPORT</b>
<p>Fish Kills Component: When there are no fish kills within an assessment unit, then that unit is Fully Supporting its use.</p> <p>pH Component (a minimum of 20 yearly readings is preferred): When 95% or more of the pH measurements meet the applicable pH standard (<math>6 \leq \text{pH} \leq 9</math>), then an assessment unit is Fully Supporting its use.</p> <p>Dissolved Oxygen (DO) Component (a minimum of 20 yearly readings, ideally 10 surface and 10 bottom, is preferred): When 95% or more of dissolved oxygen measurements meet the applicable standards (not less than 5, 4 and 3 mg/l at any time for class A, B-1 and B-2, respectively), then an assessment unit is Fully Supporting its use.</p>	Fully Supporting
<p>pH Component (a minimum of 20 yearly readings is preferred): When more than 5% and 10% or less of pH measurements do not meet the applicable pH standard (<math>6 \leq \text{pH} \leq 9</math>), then an AU is assessed as Fully Supporting But Threatened when the average of pH measurements falling outside of the allowable range is greater than or equal to 5 SU and less than or equal to 10 SU.</p> <p>Dissolved Oxygen (DO) Component (a minimum of 20 yearly readings, ideally 10 surface and 10 bottom, is preferred): When more than 5% and 10% or less of the measurements for dissolved oxygen do not meet the applicable standard, then an AU is assessed as Fully Supporting But Threatened when the average of the dissolved oxygen measurements falling below the standard is greater than or equal to 4 mg/l and less than 5 mg/l for Class A waters, greater than or equal to 3 mg/l and less than 4 mg/l for Class B-1 waters and greater than or equal to 2.8 mg/l and less than 3 mg/l for Class B-2 waters.</p>	Fully Supporting but Threatened
<p>Fish Kills Component: When there is one or more documented fish kills within an assessment unit, then that unit is Not Supporting its designated use</p> <p>pH Component (for a minimum of 20 yearly readings): When more than 10% of the pH measurements do not meet the applicable standard, then an assessment is Not Supporting its designated use.</p> <p>Dissolved Oxygen (DO) Component (a minimum of 20 yearly readings, ideally 10 surface and 10 bottom, is preferred): (1) When more than 10% of the measurements for dissolved oxygen do not meet the applicable standard, then an assessment unit is Not Supporting its designated use. (2) When more than 5% and 10% or less of the dissolved oxygen measurements do not meet the applicable standard, then an AU is assessed as Not Supporting when the average of DO measurements falling below the standard is less than 4 mg/l for Class A waters, less than 3 mg/l for Class B-1 waters, and less than 2.8 mg/l for Class B-2 waters.</p>	Not Supporting
Insufficient data	Not Assessed

NOTE:

In the overall physical/chemical aquatic life use assessment, a waterbody is placed in the "Not Supporting" category when either one of the Fish Kills, the Dissolved Oxygen or the pH components indicates no support. In all other situations, the harsher component assessment prevails in the overall physical/chemical aquatic life use assessment. Data must exist for at least one component.

**TABLE AL2. 2008 AQUATIC LIFE USE ASSESSMENT  
DISSOLVED OXYGEN DATA ANALYSIS**

Assessment Unit				Total Readings	% of Readings Greater Than or Equal to the Criterion	% of Readings Less Than the Criterion	Average of Dissolved Oxygen Readings that are Less Than the Criterion
ID	Name	Class	Dissolved Oxygen Criterion				
<i>AU1</i>	Arthur Kill	B-1	4	53	92.45	7.55	3.60
<i>AU2</i>	Arthur Kill/ Kill Van Kull	B-2	3	175	100.00	0.00	-----
<i>AU3</i>	Atlantic Ocean	A	5	35	100.00	0.00	-----
<i>AU4</i>	East River- Upper	A	5	218	42.20	57.80	2.79
<i>AU5</i>	East River- Lower	B-1	4	372	85.22	14.78	3.19
<i>AU6</i>	Harlem River	B-2	3	44	100.00	0.00	-----
<i>AU7</i>	Hudson River- Upper	A	5	127	96.06	3.94	4.56
<i>AU8</i>	Hudson River-Lower	B-1	4	167	99.40	0.60	3.91
<i>AU9</i>	Jamaica Bay	A	5	621	76.01	23.99	3.21
<i>AU10</i>	Long Island Sound -West	A	5	618	39.48	60.52	3.08
<i>AU11</i>	Long Island Sound - CT	A	5	88	40.91	59.09	2.88
<i>AU12</i>	Long Island Sound - East	A	5	88	40.91	59.09	2.55
<i>AU13</i>	Lower NY Bay	A	5	0	-----	-----	-----
<i>AU14</i>	Gravesend Bay	B-1	4	0	-----	-----	-----
<i>AU15</i>	Newark Bay	B-2	3	0	-----	-----	-----
<i>AU16</i>	Newtown Creek	B-2	3	192	76.56	23.44	1.19
<i>AU17</i>	Raritan Bay - NY	A	5	89	93.26	6.74	4.48
<i>AU18</i>	Raritan Bay - NJ	A	5	0	-----	-----	-----
<i>AU19</i>	Sandy Hook Bay	A	5	0	-----	-----	-----
<i>AU20</i>	East Bay Great South Bay	A	5	0	-----	-----	-----
<i>AU21</i>	Upper NY Bay	B-1	4	159	100.00	0.00	-----



**TABLE AL3. 2009 AQUATIC LIFE USE ASSESSMENT  
DISSOLVED OXYGEN DATA ANALYSIS**

<b>Assessment Unit</b>				Total Readings	% of Readings Greater Than or Equal to the Criterion	% of Readings Less Than the Criterion	Average of Dissolved Oxygen Readings that are Less Than the Criterion
<b>ID</b>	<b>Name</b>	<b>Class</b>	<b>Dissolved Oxygen Criterion</b>				
<i>AU1</i>	Arthur Kill	B-1	4	58	94.83	5.17	2.93
<i>AU2</i>	Arthur Kill/ Kill Van Kull	B-2	3	215	100.00	0.00	-----
<i>AU3</i>	Atlantic Ocean	A	5	38	92.11	7.89	4.33
<i>AU4</i>	East River- Upper	A	5	221	66.97	33.03	3.01
<i>AU5</i>	East River- Lower	B-1	4	415	81.45	18.55	3.29
<i>AU6</i>	Harlem River	B-2	3	49	100.00	0.00	-----
<i>AU7</i>	Hudson River- Upper	A	5	58	84.48	15.52	4.56
<i>AU8</i>	Hudson River-Lower	B-1	4	175	96.57	3.43	3.72
<i>AU9</i>	Jamaica Bay	A	5	728	86.54	13.46	3.39
<i>AU10</i>	Long Island Sound -West	A	5	664	67.77	32.23	3.42
<i>AU11</i>	Long Island Sound - CT	A	5	96	70.83	29.17	3.43
<i>AU12</i>	Long Island Sound - East	A	5	96	66.67	33.33	2.74
<i>AU13</i>	Lower NY Bay	A	5	0	-----	-----	-----
<i>AU14</i>	Gravesend Bay	B-1	4	0	-----	-----	-----
<i>AU15</i>	Newark Bay	B-2	3	0	-----	-----	-----
<i>AU16</i>	Newtown Creek	B-2	3	208	83.65	16.35	2.16
<i>AU17</i>	Raritan Bay - NY	A	5	104	91.35	8.65	4.39
<i>AU18</i>	Raritan Bay - NJ	A	5	0	-----	-----	-----
<i>AU19</i>	Sandy Hook Bay	A	5	0	-----	-----	-----
<i>AU20</i>	East Bay Great South Bay	A	5	0	-----	-----	-----
<i>AU21</i>	Upper NY Bay	B-1	4	364	75.27	24.73	3.15

**TABLE AL4. 2008 AND 2009 AQUATIC LIFE USE  
ASSESSMENT  
DISSOLVED OXYGEN DATA ANALYSIS**

Assessment Unit				Total Readings	% of Readings Greater Than or Equal to the Criterion	% of Readings Less Than the Criterion	Average of Dissolved Oxygen Readings that are Less Than the Criterion
ID	Name	Class	Dissolved Oxygen Criterion				
<i>AU1</i>	Arthur Kill	B-1	4	<b>111</b>	93.69	6.31	3.31
<i>AU2</i>	Arthur Kill/ Kill Van Kull	B-2	3	<b>390</b>	100.00	0.00	-----
<i>AU3</i>	Atlantic Ocean	A	5	<b>73</b>	95.89	4.11	4.33
<i>AU4</i>	East River- Upper	A	5	<b>439</b>	54.67	45.33	2.87
<i>AU5</i>	East River- Lower	B-1	4	<b>787</b>	83.23	16.77	3.25
<i>AU6</i>	Harlem River	B-2	3	<b>93</b>	100.00	0.00	-----
<i>AU7</i>	Hudson River- Upper	A	5	<b>185</b>	92.43	7.57	4.56
<i>AU8</i>	Hudson River-Lower	B-1	4	<b>342</b>	97.95	2.05	3.75
<i>AU9</i>	Jamaica Bay	A	5	<b>1349</b>	81.69	18.31	3.28
<i>AU10</i>	Long Island Sound -West	A	5	<b>1282</b>	54.13	45.87	3.20
<i>AU11</i>	Long Island Sound - CT	A	5	<b>184</b>	56.52	43.48	3.07
<i>AU12</i>	Long Island Sound - East	A	5	<b>184</b>	54.35	45.65	2.62
<i>AU13</i>	Lower NY Bay	A	5	<b>0</b>	-----	-----	-----
<i>AU14</i>	Gravesend Bay	B-1	4	<b>0</b>	-----	-----	-----
<i>AU15</i>	Newark Bay	B-2	3	<b>0</b>	-----	-----	-----
<i>AU16</i>	Newtown Creek	B-2	3	<b>400</b>	80.25	19.75	1.61
<i>AU17</i>	Raritan Bay - NY	A	5	<b>193</b>	92.23	7.77	4.43
<i>AU18</i>	Raritan Bay - NJ	A	5	<b>0</b>	-----	-----	-----
<i>AU19</i>	Sandy Hook Bay	A	5	<b>0</b>	-----	-----	-----
<i>AU20</i>	East Bay Great South Bay	A	5	<b>0</b>	-----	-----	-----
<i>AU21</i>	Upper NY Bay	B-1	4	<b>523</b>	82.79	17.21	3.15

**TABLE AL5. 2008 AQUATIC LIFE USE ASSESSMENT  
pH DATA ANALYSIS**

Assessment Unit				Total Readings	% of Readings Greater Than or Equal to the Criterion	% of Readings Less Than the Criterion	Average of Dissolved Oxygen Readings that are Less Than the Criterion
ID	Name	Class	pH Criterion				
*							

\* All pH measurements were within acceptance limits.

**TABLE AL6. 2009 AQUATIC LIFE USE ASSESSMENT  
pH DATA ANALYSIS**

Assessment Unit				Total Readings	% of Readings Greater Than or Equal to the Criterion	% of Readings Less Than the Criterion	Average of Dissolved Oxygen Readings that are Less Than the Criterion
ID	Name	Class	pH Criterion				
*							

\* All pH measurements were within acceptance limits.

**TABLE AL7. 2008 AND 2009 AQUATIC LIFE USE  
ASSESSMENT  
pH DATA ANALYSIS**

Assessment Unit				Total Readings	% of Readings Greater Than or Equal to the Criterion	% of Readings Less Than the Criterion	Average of Dissolved Oxygen Readings that are Less Than the Criterion
ID	Name	Class	pH Criterion				
*							

\* All pH measurements were within acceptance limits.

## **TABLE AL8. 2008 AQUATIC LIFE USE ASSESSMENT REPORTED FISH KILLS**

7/14/08	Leonardo State Marina – Assessment Unit 19 800-1000 dead fish of different species (fluke, sea robin, puffer, flounder, grass shrimp, crabs). No definitive cause identified.
7/14/08	Cliffwood Beach – Assessment Unit 18 Several hundred dead fluke found on beach. All approximately 1 to 2 inches in length. No definitive cause identified.
7/16/08	Cliffwood Beach – Assessment Unit 18 12 small fluke and 100 small porgies. May have been caused by an offshore low dissolved oxygen event. An algae bloom was reported in Raritan Bay the previous day.

## **TABLE AL9: 2009 AQUATIC LIFE USE ASSESSMENT REPORTED FISH KILLS**

No fish kills reported.

## TABLE AL10.2008 PHYSICAL/CHEMICAL AQUATIC LIFE USE ASSESSMENT

(Based on the criteria of Table AL1 and the data of Tables AL2 through AL9)

Assessment Unit				Assessment	Pollutant(s)	Sources
ID	Name	Sq. Mi.	Class			
<i>AU1</i>	Arthur Kill	0.64	B-1	<b>Fully Supporting But Threatened</b>	-----	-----
<i>AU2</i>	Arthur Kill / Kill Van Kull	7.97	B-2	<b>Fully Supporting</b>	-----	-----
<i>AU3</i>	Atlantic Ocean	135	A	<b>Fully Supporting</b>	-----	-----
<i>AU4</i>	East River-Upper	0.75	A	<b>Not Supporting</b>	Nutrients, D.O.	See Note
<i>AU5</i>	East River-Lower	12.55	B-1	<b>Not Supporting</b>	Nutrients, D.O.	See Note
<i>AU6</i>	Harlem River	0.56	B-2	<b>Fully Supporting</b>	-----	-----
<i>AU7</i>	Hudson River- Upper	52.47	A	<b>Fully Supporting</b>	-----	-----
<i>AU8</i>	Hudson River-Lower	11.14	B-1	<b>Fully Supporting</b>	-----	-----
<i>AU9</i>	Jamaica Bay	11.32	A	<b>Not Supporting</b>	Nutrients, D.O.	See Note
<i>AU10</i>	Long Isl. Sound -West	93.74	A	<b>Not Supporting</b>	Nutrients, D.O.	See Note
<i>AU11</i>	Long Island Sound - CT	225	A	<b>Not Supporting</b>	Nutrients, D.O.	See Note
<i>AU12</i>	Long Isl. Sound - East	81.26	A	<b>Not Supporting</b>	Nutrients, D.O.	See Note
<i>AU13</i>	Lower NY Bay	46.52	A	<b>Not Assessed - Insufficient Data</b>	-----	-----
<i>AU14</i>	Gravesend Bay	0.77	B-1	<b>Not Assessed - Insufficient Data</b>	-----	-----
<i>AU15</i>	Newark Bay	4.28	B-2	<b>Not Assessed - Insufficient Data</b>	-----	-----
<i>AU16</i>	Newtown Creek	0.24	B-2	<b>Not Supporting</b>	Nutrients, D.O.	See Note
<i>AU17</i>	Raritan Bay - NY	37.78	A	<b>Fully Supporting But Threatened</b>	-----	-----
<i>AU18</i>	Raritan Bay - NJ	27.44	A	<b>Not Assessed - Insufficient Data</b>	-----	-----
<i>AU19</i>	Sandy Hook Bay	14.78	A	<b>Not Supporting</b>	Nutrients, D.O.	See Note
<i>AU20</i>	East Bay Great S. Bay	12.42	A	<b>Not Supporting</b>	Nutrients, D.O.	See Note
<i>AU21</i>	Upper NY Bay	20.37	B-1	<b>Fully Supporting</b>	-----	-----

Note: Sources include CSOs, storm sewers, atmospheric deposition, municipal/industrial point sources and MS4s.

## TABLE AL11.2009 PHYSICAL/CHEMICAL AQUATIC LIFE USE ASSESSMENT

(Based on the criteria of Table AL1 and the data of Tables AL2 through AL9)

Assessment Unit				Assessment	Pollutant(s)	Sources
ID	Name	Sq. Mi.	Class			
<i>AU1</i>	Arthur Kill	0.64	B-1	<b>Not Supporting</b>	Nutrients, D.O.	See Note
<i>AU2</i>	Arthur Kill / Kill Van Kull	7.97	B-2	<b>Fully Supporting</b>	-----	-----
<i>AU3</i>	Atlantic Ocean	135	A	<b>Fully Supporting But Threatened</b>	-----	-----
<i>AU4</i>	East River-Upper	0.75	A	<b>Not Supporting</b>	Nutrients, D.O.	See Note
<i>AU5</i>	East River-Lower	12.55	B-1	<b>Not Supporting</b>	Nutrients, D.O.	See Note
<i>AU6</i>	Harlem River	0.56	B-2	<b>Fully Supporting</b>	-----	-----
<i>AU7</i>	Hudson River- Upper	52.47	A	<b>Not Supporting</b>	Nutrients, D.O.	See Note
<i>AU8</i>	Hudson River-Lower	11.14	B-1	<b>Fully Supporting</b>	-----	-----
<i>AU9</i>	Jamaica Bay	11.32	A	<b>Not Supporting</b>	Nutrients, D.O.	See Note
<i>AU10</i>	Long Isl. Sound -West	93.74	A	<b>Not Supporting</b>	Nutrients, D.O.	See Note
<i>AU11</i>	Long Island Sound - CT	225	A	<b>Not Supporting</b>	Nutrients, D.O.	See Note
<i>AU12</i>	Long Isl. Sound - East	81.26	A	<b>Not Supporting</b>	Nutrients, D.O.	See Note
<i>AU13</i>	Lower NY Bay	46.52	A	<b>Not Assessed - Insufficient Data</b>	-----	-----
<i>AU14</i>	Gravesend Bay	0.77	B-1	<b>Not Assessed - Insufficient Data</b>	-----	-----
<i>AU15</i>	Newark Bay	4.28	B-2	<b>Not Assessed - Insufficient Data</b>	-----	-----
<i>AU16</i>	Newtown Creek	0.24	B-2	<b>Not Supporting</b>	Nutrients, D.O.	See Note
<i>AU17</i>	Raritan Bay - NY	37.78	A	<b>Fully Supporting But Threatened</b>	-----	-----
<i>AU18</i>	Raritan Bay - NJ	27.44	A	<b>Not Assessed - Insufficient Data</b>	-----	-----
<i>AU19</i>	Sandy Hook Bay	14.78	A	<b>Not Assessed - Insufficient Data</b>	-----	-----
<i>AU20</i>	East Bay Great S. Bay	12.42	A	<b>Not Assessed - Insufficient Data</b>	-----	-----
<i>AU21</i>	Upper NY Bay	20.37	B-1	<b>Not Supporting</b>	Nutrients, D.O.	See Note

Note: Sources include CSOs, storm sewers, atmospheric deposition, municipal/industrial point sources and MS4s.

## TABLE AL12.OVERALL AQUATIC LIFE USE ASSESSMENT

(Combining the 2008 and the 2009 physical/chemical assessments and adjusting to incorporate best professional judgment and the absence of biological data)

Assessment Unit				Assessment	Pollutant (s)	Sources
ID	Name	Sq. Mi.	Class			
AU1	Arthur Kill	0.64	B-1	Not Assessed-Insufficient Data	-----	-----
AU2	Arthur Kill / Kill Van Kull	7.97	B-2	Not Assessed-Insufficient Data	-----	-----
AU3	Atlantic Ocean	135	A	Fully Supporting	-----	-----
AU4	East River-Upper	0.75	A	Not Supporting	Nutrients, D.O.	Note 3
AU5	East River-Lower	12.55	B-1	Not Supporting	Nutrients, D.O.	Note 3
AU6	Harlem River	0.56	B-2	Not Assessed-Insufficient Data	-----	-----
AU7	Hudson River- Upper	52.47	A	Not Assessed-Insufficient Data	-----	-----
AU8	Hudson River-Lower	11.14	B-1	Not Assessed-Insufficient Data	-----	-----
AU9	Jamaica Bay	11.32	A	Not Supporting	Nutrients, D.O.	Note 3
AU10	Long Isl. Sound - West	93.74	A	Not Supporting	Nutrients, D.O.	Note 3
AU11	Long Island Sound - CT	225	A	Not Supporting	Nutrients, D.O.	Note 3
AU12	Long Isl. Sound - East	81.26	A	Not Supporting	Nutrients, D.O.	Note 3
AU13	Lower NY Bay	46.52	A	Not Assessed-Insufficient Data	-----	-----
AU14	Gravesend Bay	0.77	B-1	Not Assessed-Insufficient Data	-----	-----
AU15	Newark Bay	4.28	B-2	Not Assessed-Insufficient Data	-----	-----
AU16	Newtown Creek	0.24	B-2	Not Supporting	Nutrients, D.O.	Note 3
AU17	Raritan Bay - NY	37.78	A	Not Assessed-Insufficient Data	-----	-----
AU18	Raritan Bay - NJ	27.44	A	Not Supporting	Nutrients, D.O.	Note 3
AU19	Sandy Hook Bay	14.78	A	Not Supporting	Nutrients, D.O.	Note 3
AU20	East Bay Great S. Bay	12.42	A	Not Assessed-Insufficient Data	-----	-----
AU21	Upper NY Bay	20.37	B-1	Not Supporting	Nutrients, D.O.	Note 3

Notes:

1. Applying best professional judgment and in the absence of biological data, the 2008 and 2009 chemical/physical assessments in AUs 1, 2, 6, 7, 8 and 17 were changed in the overall assessment from “Fully Supporting” to “Not Assessed - Insufficient Data” due to other known problems in the Arthur Kill/Kill Van Kull, Harlem River, Hudson River and Raritan Bay. The “Fully Supporting” chemical/physical assessment of AU 3, however, was not changed.
2. AUs 18 and 19 were assessed as “Not Supporting” because of documented fish kills in 2008.
3. Sources include: CSOs, storm sewers, atmospheric deposition, municipal/industrial point sources and MS4s.

**TABLE AL13: INTERSTATE ENVIRONMENTAL DISTRICT  
2008-2009 AREA SUPPORT SUMMARY FOR  
AQUATIC LIFE USE SUPPORT**

	Total Area (Square Miles)	% of Total Area
Fully Supporting	<b>135</b>	<b>16.94</b>
Fully Supporting But Threatened	<b>0</b>	<b>0.00</b>
Not Supporting	<b>487.45</b>	<b>61.16</b>
Not Assessed - Use Not Assigned	<b>0</b>	<b>0.00</b>
Not Assessed - Insufficient Data	<b>174.55</b>	<b>21.90</b>



# FISH CONSUMPTION USE ASSESSMENT: METHODOLOGY-SUPPORTING DATA-RESULTS

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The Interstate Environmental Commission's fish consumption use support is based on fish consumption advisories issued by the appropriate departments of the Commission's three member States; specifically, the New York State Department of Health, the New Jersey Department of Environmental Protection and the Connecticut Department of Public Health. Fish consumption advisories are issued upon sufficient data collection and risk assessment analyses overseen by the aforementioned State agencies. The Commission's fish consumption use support assessment is therefore deemed reliable and is performed according to the:

1. Criteria outlined in TABLE FC1: Fish Consumption Use Assessment Criteria;
2. 2008 and 2009 fish consumption advisories issued by the Commission's three member States (Tables FC2 through FC4);

Following the presentation of the fish consumption use support assessment criteria and supporting data, a final assessment of the fish consumption use is presented in Table FC5.

Data and information used in fish consumption use assessments was representative of the conditions over the two year reporting period and over the entire area of the assessment units that were assessed. Data collection followed field, laboratory and analytical protocols consistent with the collector's quality assurance and quality control requirements and objectives. All existing and readily available data and information was considered during the assessment process to better characterize the temporal and spatial variability of assessment units. Assessments based on larger sample sets are more likely to indicate the likelihood of water quality criteria exceedances than assessments based on smaller sample sets.

The New York State Department of Health (NYS DOH) issues advisories on eating sportfish and game — not for fish and game sold in markets — because some of these foods contain chemicals at levels that may be harmful. These advisories are primarily based on information on various contaminants in fish and game samples collected each year from different water bodies by the New York State Department of Environmental Conservation. Sampling focuses on water bodies with known or suspected contamination, water bodies susceptible to mercury contamination, popular fishing waters, waters where trends in fish contamination are being monitored and also, on those species that are most likely to be caught and eaten by sport anglers. Game species (e.g., waterfowl, snapping turtles) that accumulate chemical contaminants are also tested. New results are reviewed annually by the NYS DOH to determine if an advisory should be issued or revised for a given water body or fish or game species. The NYS DOH compares data to federal marketplace standards (when available) and considers other factors such as potential human exposures and health risks, location, type and number of samples. According to NYS DOH, approximately 2,000 fish samples from more than 50 locations have been collected in recent years and analyzed for various contaminants.

The primary contaminants of concern in New York State fish are mercury and PCBs (polychlorinated biphenyls). Other contaminants such as cadmium, chlordane, DDT, dieldrin, dioxin and mirex are also of concern. The primary contaminants in waterfowl are PCBs, mirex, chlordane and DDT, and in snapping turtles, PCBs. These contaminants can be especially harmful to women of childbearing age, pregnant women and nursing mothers. Exposure to low levels of some contaminants in the environment may have long lasting health effects on people.

The New Jersey Department of Environmental Protection (NJDEP) and Department of Health and Senior Services (NJDHSS) advise citizens on safe fish consumption practices. Fish consumption advisories were adopted in 1982, when research began to show elevated levels of potentially harmful contaminants in certain fish and crabs in some New Jersey waters. Fish consumption advisories are developed through a scientific process that includes collecting samples of fish from waters throughout the state and analyzing them for various chemical contaminants, such as dioxin, PCBs and mercury. These contaminant levels are then evaluated using federal guidelines for protecting human health. Dioxin and PCBs are classified as probable cancer causing substances in humans and elevated levels of mercury can pose health risks to the human nervous system, particularly to developing fetuses. Since levels of contaminants may vary from one location to another and from one fish species to another, the advisories are also separated by site. Mercury, PCBs and dioxins are among the major contaminants found in some New Jersey fish in portions of the state.

The Connecticut Department of Public Health issues fish consumption advisories because some fish contain high levels of mercury and/or PCBs and should therefore be eaten less or not at all. PCBs and mercury entered the water from chemical spills that happened in the past. In addition, mercury enters the water from air deposition. Since mercury travels long distances, its release point might be out of State boundaries. Even though these spills have been stopped, it will take years for the mercury or PCB levels in the fish to drop to safe levels. The Connecticut Department of Environmental Protection is working to improve water quality in Connecticut and is limiting the amount of mercury which can be released into the air.

PCBs (polychlorinated biphenyls) are man-made chemicals, commercially produced for industrial application in heat transfer systems, hydraulic fluids and electrical equipment. They were also used in printing inks, paints and pesticides. Manufacturing of PCBs was stopped in 1979 as a result of evidence that PCBs caused harmful effects and built up in the environment. PCBs tend to stay mostly in soil and sediment, but are also found in the air and water. They are persistent in the environment and accumulate in the fat of fish and other animals.

Mercury is a naturally occurring toxic metal that has been commonly used in a number of products (thermometers, electrical switches). It can also get into the environment from human activity. Primary sources include burning of fossil fuels such as coal, incineration of wastes, and metal processing or manufacturing. Most of the mercury accumulates in the edible portion of fish as methylmercury. Exposure to mercury cannot be lowered by cooking or cleaning the fish. Older fish usually have the highest levels of PCBs and mercury. If there is a choice, smaller fish of any species should be preferred. Due to concerns about mercury contamination, the U.S. Food and Drug Administration advises pregnant women, women who may become pregnant, nursing mothers and young children not to eat shark, swordfish, king mackerel or tilefish.

Chlordane, DDT, dieldrin and mirex are all man-made chlorinated organic chemicals that were once used as insecticides. Mirex was also used as a flame retardant in a number of materials. Although these chemicals have been banned in the United States since the 1970s (chlordane and dieldrin were allowed for termite control until the 1980s), they are very persistent in the environment and accumulate in the fat of fish and other animals. Thus, these chemicals can still be found in fish.

Dioxins and furans are unwanted by-products of manufacturing and also come from the smoke or ash of motor vehicles, municipal waste incinerators, wood fires and trash burning. Dioxins and furans are persistent in the environment and accumulate in the fat of fish and other animals. Dioxin is the most toxic member of a large chemical family. It is also formed through numerous processes, including production of chlorinated phenol products such as herbicides and creation of paper products using bleach.

Cadmium is a naturally-occurring metal found in small amounts in soil and water. Cadmium is used in many industrial operations and in consumer products such as paints, plastics and batteries. Cadmium also occurs in foods (especially fruits, vegetables and cereals) and tobacco.

**TABLE FC1. FISH CONSUMPTION USE ASSESSMENT CRITERIA**

<b>CRITERIA</b>	<b>DESIGNATED USE SUPPORT</b>
There are no fish consumption restrictions <sup>(1)</sup> or bans in effect for any fish species or any consumer group <sup>(2)</sup> other than statewide advisories based on extrapolated data.	Fully Supporting
As above, however, a. monitoring of waters and/or sediments detects contaminants that could potentially accumulate in fish tissue at quantities that do not exceed levels of concern; b. monitoring of fish tissue confirms that contaminant levels are present, but not at quantities exceeding levels of concern.	Fully Supporting but Threatened
A fish consumption restriction or ban is in effect for one or more fish species and for all or a subgroup of consumers other than statewide advisories based on extrapolated data.	Not Supporting
A statewide advisory based on extrapolated data is in effect.	Not Assessed

1. As issued by the New York State Department of Health, the New Jersey Department of Environmental Protection and the Connecticut Department of Health.
2. Consumers are divided into two groups: the high-risk group, which includes infants, children, pregnant women, nursing mothers and women of childbearing age; and the general population group, which includes all individuals that are not part of the high-risk group.

**TABLE FC2. 2008 & 2009 FISH CONSUMPTION  
ADVISORIES IN THE NEW YORK PORTION  
OF THE INTERSTATE ENVIRONMENTAL  
DISTRICT**

Waterbody	Advice <sup>(1)</sup>	Pollutant
<b>EAST &amp; HARLEM RIVERS</b>  Advisories applicable to IEC's Assessment Unit(s): 4, 5, 6 & 16	<p><b><u>ADVISORY FOR THE HIGH RISK GROUP<sup>(2)</sup>:</u></b> Do not eat fish of any species from these waters.</p> <p><b><u>ADVISORY FOR ALL OTHER PEOPLE:</u></b>  <b>Eat None Of:</b> american eel, gizzard shad, crab &amp; lobster hepatopancreas and their cooking liquid.  <b>Eat No More Than One Meal Per Month Of:</b> atlantic needlefish, bluefish, rainbow smelt, striped bass, white perch.  <b>Eat No More Than One (1/2 Pound) Meal Per Week Of:</b> All other fish species, blue crab meat (six crabs per week).</p>	PCBs in fish and cadmium, dioxin and PCBs in crabs
<b>HUDSON RIVER</b>  Advisories applicable to IEC's Assessment Unit(s): 7 & 8	<p><b><u>ADVISORY FOR THE HIGH RISK GROUP:</u></b> Do not eat fish of any species from these waters.</p> <p><b><u>ADVISORY FOR ALL OTHER PEOPLE:</u></b>  <b>Eat None Of:</b> channel catfish, gizzard shad, white catfish, crab and lobster hepatopancreas and their cooking liquid.  <b>Eat No More Than One Meal Per Month Of:</b> atlantic needlefish, bluefish, rainbow smelt, striped bass and white perch.  <b>Eat No More Than One (1/2 Pound) Meal Per Week Of:</b> All other fish species, blue crab meat (six crabs per week).</p> <p><b><u>SPECIAL NOTE:</u></b> Harvest/possession of Hudson River American eel for food is prohibited per NYSDEC Regulations.</p>	PCBs in fish and cadmium, dioxin and PCBs in crabs
<b>UPPER NEW YORK BAY (north of Verrazano Narrows Br.)</b>  Advisories applicable to IEC's Assessment Unit(s): 21	<p><b><u>ADVISORY FOR THE HIGH RISK GROUP:</u></b> Do not eat fish of any species from these waters.</p> <p><b><u>ADVISORY FOR ALL OTHER PEOPLE:</u></b>  <b>Eat None Of:</b> gizzard shad, white perch, crab and lobster hepatopancreas and their cooking liquid.  <b>Eat No More Than One Meal Per Month Of:</b> american eel, atlantic needlefish, bluefish, rainbow smelt and striped bass.  <b>Eat No More Than One (1/2 Pound) Meal Per Week Of:</b> All other fish species, blue crab meat (six crabs per week).</p>	PCBs in fish and cadmium, dioxin and PCBs in crabs

**TABLE FC2. 2008 & 2009 FISH CONSUMPTION  
ADVISORIES IN THE NEW YORK PORTION  
OF THE INTERSTATE ENVIRONMENTAL  
DISTRICT (Cont'd)**

Waterbody	Advice	Pollutant
<b>NEWARK BAY, ARTHUR KILL and KILL VAN KULL</b> Advisories applicable to IEC's Assessment Unit(s): 1, 2 & 15	<p><b><u>ADVISORY FOR THE HIGH RISK GROUP:</u></b> Do not eat fish of any species from these waters.</p> <p><b><u>ADVISORY FOR ALL OTHER PEOPLE:</u></b>  <b>Eat None Of:</b> american eel, gizzard shad, striped bass, white perch, crab and lobster hepatopancreas and their cooking liquid.  <b>Eat No More Than One Meal Per Month Of:</b> atlantic needlefish, bluefish and rainbow smelt.  <b>Eat No More Than One (1/2 Pound) Meal Per Week Of:</b> All other fish species, blue crab meat (six crabs per week).</p>	Dioxin and PCBs in fish and cadmium, dioxin and PCBs in crabs
<b>RARITAN BAY (WEST OF WOLFE'S POND PARK)</b> Advisories applicable to IEC's Assessment Unit(s): 17& 18	<p><b><u>ADVISORY FOR THE HIGH RISK GROUP:</u></b> Do not eat fish of any species from these waters.</p> <p><b><u>ADVISORY FOR ALL OTHER PEOPLE:</u></b>  <b>Eat None Of:</b> white perch, crab and lobster hepatopancreas and their cooking liquid.  <b>Eat No More Than One Meal Per Month Of:</b> striped bass.  <b>Eat No More Than One (1/2 Pound) Meal Per Week Of:</b> All other fish species, blue crab meat (six crabs per week).</p>	Dioxin and PCBs in fish and cadmium, dioxin and PCBs in crabs
<b>LOWER NY BAY, RARITAN BAY (east of wolfe's pond park), JAMAICA BAY, LONG ISLAND SOUND &amp; LONG ISLAND SOUTH SHORE WATERS</b> Advisories applicable to IEC's Assessment Unit(s): 9, 10, 12, 13, 14, 17& 20	<p><b><u>ADVISORY FOR THE HIGH RISK GROUP:</u></b>  <b>Eat None Of:</b> weakfish greater than 25 inches, crab and lobster hepatopancreas and their cooking liquid.  <b>Eat No More Than One Meal Per Month Of:</b> american eel, striped bass, bluefish greater than 20 inches and smaller weakfish.  <b>Eat No More Than One Meal Per Week Of:</b> Bluefish smaller than 20 inches.</p> <p><b><u>ADVISORY FOR WOMEN BEYOND THE CHILDBEARING AGE AND ALL OTHER PEOPLE:</u></b>  <b>Eat None Of:</b> crab and lobster hepatopancreas and their cooking liquid.  <b>Eat No More Than One Meal Per Month Of:</b> weakfish greater than 25 inches.  <b>Eat No More Than One Meal Per Week Of:</b> american eel, striped bass, bluefish and weakfish smaller than 25 inches.</p>	Dioxin and PCBs in fish and cadmium, dioxin and PCBs in crabs

(1) As issued by the New York State Department of Health.

(2) High-risk individuals include infants, children, pregnant women, nursing mothers and women of childbearing age.

**TABLE FC3. 2008 & 2009 FISH CONSUMPTION  
ADVISORIES IN THE NEW JERSEY PORTION  
OF THE INTERSTATE ENVIRONMENTAL  
DISTRICT**

Waterbody	Advice	Pollutant
<b>NEWARK BAY COMPLEX</b> <b>Including Newark Bay, tidal Hackensack River, Arthur Kill, Kill Van Kull and tidal tributaries.</b> Advisories applicable to IEC's Assessment Unit(s): 1, 2 & 15	<p><b><u>ADVISORY FOR THE HIGH RISK GROUP:</u></b>                      Do not eat striped bass, american eel, white perch and white catfish. Do not eat or harvest blue crab.</p> <p><b><u>ADVISORY FOR ALL OTHER PEOPLE:</u></b>  <b>Eat None of:</b> blue crab (do not harvest too), american eel and white perch.  <b>Eat No More Than One Meal Per Year of:</b> White Catfish.  <b>Eat No More Than Four Meals Per Year of:</b> Striped Bass.</p>	PCBs, Dioxin, Chlordane and/or Mercury
<b>HUDSON RIVER</b> <b>Downstream of NY-NJ Border, including the Upper New York Bay</b> Advisories applicable to IEC's Assessment Unit(s): 7, 8 & 21	<p><b><u>ADVISORY FOR THE HIGH RISK GROUP:</u></b>  <b>Eat None of:</b> striped bass, american eel, white perch and white catfish.  <b>Eat No More Than One Meal Per Month of:</b> winter flounder.  <b>Eat one meal of:</b> blue crab (7 crabs per week) but do not eat the green gland (hepatopancreas) and discard the cooking liquid.</p> <p><b><u>ADVISORY FOR ALL OTHER PEOPLE:</u></b>  <b>Eat None of:</b> White Catfish.  <b>Eat No More Than 1 Meal/Year of:</b> american eel, white perch.  <b>Eat No More Than One Meal Per Month of:</b> winter flounder.  <b>Eat No More Than Four Meals Per Year of:</b> striped bass.  <b>Eat one meal of:</b> blue crab (7 crabs per week) but do not eat the green gland (hepatopancreas) and discard the cooking liquid.</p>	PCBs, Dioxin, Chlordane and/or Mercury
<b>RARITAN BAY COMPLEX</b> <b>Includes the Raritan Bay, tidal Raritan River (to Rte. 1 bridge) &amp; the tidal portions of all tributaries.</b> Advisories applicable to IEC's Assessment Unit(s): 18	<p><b><u>ADVISORY FOR THE HIGH RISK GROUP:</u></b>  <b>Eat None of:</b> striped bass, american eel, white perch and weakfish.  <b>Eat No More Than 1 Meal/Month of:</b> winter flounder &amp; porgy.  <b>Eat one meal of:</b> summer flounder and american lobster per week and one meal of 7 blue crabs per month but do not eat the green gland (hepatopancreas) and discard the cooking liquid.</p> <p><b><u>ADVISORY FOR ALL OTHER PEOPLE:</u></b>  <b>Eat None of:</b> white catfish.  <b>Eat No More Than 1 Meal/Year of:</b> american eel and white perch.  <b>Eat No More Than One Meal Per Month of:</b> striped bass, weakfish, porgy and winter flounder.  <b>Eat one meal of:</b> summer flounder and american lobster per week and one meal of 7 blue crabs per month but do not eat the green gland (hepatopancreas) and discard the cooking liquid.</p>	PCBs, Dioxin, Chlordane and/or Mercury

**TABLE FC3. 2008 & 2009 FISH CONSUMPTION  
ADVISORIES IN THE NEW JERSEY PORTION  
OF THE INTERSTATE ENVIRONMENTAL  
DISTRICT (Cont'd)**

Waterbody	Advice	Pollutant
<b>SANDY HOOK BAY &amp; LOWER BAY</b>  Advisories applicable to IEC's Assessment Unit(s): 18	<b><u>ADVISORY FOR EVERYONE:</u></b> <b>Eat one meal of:</b> summer flounder per week.	PCBs, Dioxin, Chlordane and/or Mercury

Notes:

- (1) As issued by the New Jersey Department of Environmental Protection and the New Jersey Department of Health and Senior Services.
- (2) High-risk individuals include infants, children, pregnant women, nursing mothers and women of childbearing age.
- (3) One meal is defined as an eight-ounce serving.
- (4) Eat only the fillet portions of the fish. Use proper trimming techniques to remove fat, and cooking methods that allow juices to drain from the fish (e.g., baking, broiling, frying, grilling, and steaming).
- (5) Not all species were found or analyzed in all water bodies, or inadequate data were available to list some species.
- (6) Statewide fish consumption advisories for estuarine & marine waters (all coastal waters except those with waterbody specific advisories):

General population:

Do not eat the green gland of american lobster, (i.e., tomalley or hepatopancreas)

Eat no more than one meal per month of striped bass and bluefish (less than 6lbs/24 inches)

Eat no more than four meals per year of american eel and bluefish (greater than 6lbs/24 inches)

High-risk individuals:

Do not eat the green gland of american lobster, striped bass, bluefish (less than 6lbs/24 inches), american eel and bluefish (greater than 6lbs/24 inches).



**TABLE FC4. 2008 & 2009 FISH CONSUMPTION ADVISORIES IN THE CONNECTICUT PORTION OF THE INTERSTATE ENVIRONMENTAL DISTRICT**

Waterbody	Advice <sup>(1)</sup>	Pollutant
<b>LONG ISLAND SOUND and CONNECTED RIVERS</b>  Advisories applicable to IEC's Assessment Unit(s): 11	<u><b>ADVISORY FOR THE HIGH RISK GROUP<sup>(2)</sup>:</b></u> <b>Eat None of:</b> striped bass and bluefish over 25". <b>Eat No More Than One Meal Per Month of:</b> bluefish 13- 25 " (Snappers, which are bluefish under 13", are not on the advisory because they have very low contamination).  <u><b>ADVISORY FOR ALL OTHER PEOPLE:</b></u> <b>Eat No More Than One Meal Per 2 Months of:</b> striped bass and bluefish over 25". <b>Eat No More Than One Meal Per Month of:</b> bluefish 13- 25 " (Snappers, which are bluefish under 13", are not on the advisory because they have very low contamination).	PCBs
<b>Mill River, Fairfield (excluding Southport Harbor)</b>  Advisories applicable to IEC's Assessment Unit(s): 11	<u><b>ADVISORY FOR THE HIGH RISK GROUP:</b></u> <b>Eat None of:</b> blue crab.  <u><b>ADVISORY FOR ALL OTHER PEOPLE:</b></u> <b>Eat None of:</b> blue crab.	Lead

(1) As issued by the New Jersey Department of Environmental Protection and the New Jersey Department of Health and Senior Services.

(2) High-risk individuals include infants, children, pregnant women, nursing mothers and women of childbearing age.

**TABLE FC5. OVERALL 2008-2009 FISH CONSUMPTION  
USE ASSESSMENT**

Assessment Unit				Assessment	Pollutant(s)	Sources
ID	Name	Sq. Mi.	Class			
AU1	Arthur Kill	0.64	B-1	Not Supporting	PCBs, Cd, dioxin, chlordanes, Hg	See Notes 1-5
AU2	Arthur Kill / Kill Van Kull	7.97	B-2	Not Supporting	PCBs, Cd, dioxin, chlordanes, Hg	See Notes 1-5
AU3	Atlantic Ocean	135	A	Fully Supporting	-----	-----
AU4	East River-Upper	0.75	A	Not Supporting	PCBs, Cd, dioxin	See Notes 1, 4-5
AU5	East River-Lower	12.55	B-1	Not Supporting	PCBs, Cd, dioxin	See Notes 1, 4-5
AU6	Harlem River	0.56	B-2	Not Supporting	PCBs, Cd, dioxin	See Notes 1, 4-5
AU7	Hudson River- Upper	52.47	A	Not Supporting	PCBs, Cd, dioxin, chlordanes, Hg	See Notes 1-5
AU8	Hudson River-Lower	11.14	B-1	Not Supporting	PCBs, Cd, dioxin, chlordanes, Hg	See Notes 1-5
AU9	Jamaica Bay	11.32	A	Not Supporting	PCBs, Cd, dioxin	See Notes 1, 4-5
AU10	Long Isl. Sound -West	93.74	A	Not Supporting	PCBs, Cd, dioxin	See Notes 1, 4-5
AU11	Long Island Sound - CT	225	A	Not Supporting	PCBs, Lead	See Notes 1, 4-5
AU12	Long Isl. Sound - East	81.26	A	Not Supporting	PCBs, Cd, dioxin	See Notes 1, 4-5
AU13	Lower NY Bay	46.52	A	Not Supporting	PCBs, Cd, dioxin	See Notes 1, 4-5
AU14	Gravesend Bay	0.77	B-1	Not Supporting	PCBs, Cd, dioxin	See Notes 1, 4-5
AU15	Newark Bay	4.28	B-2	Not Supporting	PCBs, Cd, dioxin, chlordanes, Hg	See Notes 1-5
AU16	Newtown Creek	0.24	B-2	Not Supporting	PCBs, Cd, dioxin	See Notes 1, 4-5
AU17	Raritan Bay - NY	37.78	A	Not Supporting	PCBs, Cd, dioxin	See Notes 1, 4-5
AU18	Raritan Bay - NJ	27.44	A	Not Supporting	PCBs, Cd, dioxin, chlordanes, Hg	See Notes 1-5
AU19	Sandy Hook Bay	14.78	A	Not Supporting	PCBs, Cd, dioxin, chlordanes, Hg	See Notes 1-5
AU20	East Bay Great S. Bay	12.42	A	Not Supporting	PCBs, Cd, dioxin	See Notes 1, 4-5
AU21	Upper NY Bay	20.37	B-1	Not Supporting	PCBs, Cd, dioxin, chlordanes, Hg	See Notes 1-5

NOTES:

- (1) Sources of PCBs: soil and sediment, food chain, past industrial/commercial operations.
- (2) Sources of mercury: naturally occurring, food chain, fossil fuel/coal/waste incineration, metal applications.
- (3) Sources of Chlordane: food chain, past industrial/commercial operations.
- (4) Dioxins sources: manufacturing, the smoke or ash of motor vehicles, municipal waste/wood/trash incineration, production of chlorinated phenol products such as herbicides & creation of paper products using bleach.
- (5) Cadmium (Cd) sources: naturally occurring, food chain, industrial/commercial operations (paints, plastics and batteries).

**TABLE FC6. INTERSTATE ENVIRONMENTAL DISTRICT  
2008-2009 AREA SUPPORT SUMMARY FOR  
FISH CONSUMPTION USE**

	Total Area (Square Miles)	% of Total Area
Fully Supporting	<b>135</b>	<b>16.94</b>
Fully Supporting But Threatened	<b>0</b>	<b>0.00</b>
Not Supporting	<b>662</b>	<b>83.06</b>
Not Assessed - Use Not Assigned	<b>0</b>	<b>0.00</b>
Not Assessed - Insufficient Data	<b>0</b>	<b>0.00</b>

# SHELLFISH CONSUMPTION USE ASSESSMENT: METHODOLOGY-SUPPORTING DATA-RESULTS

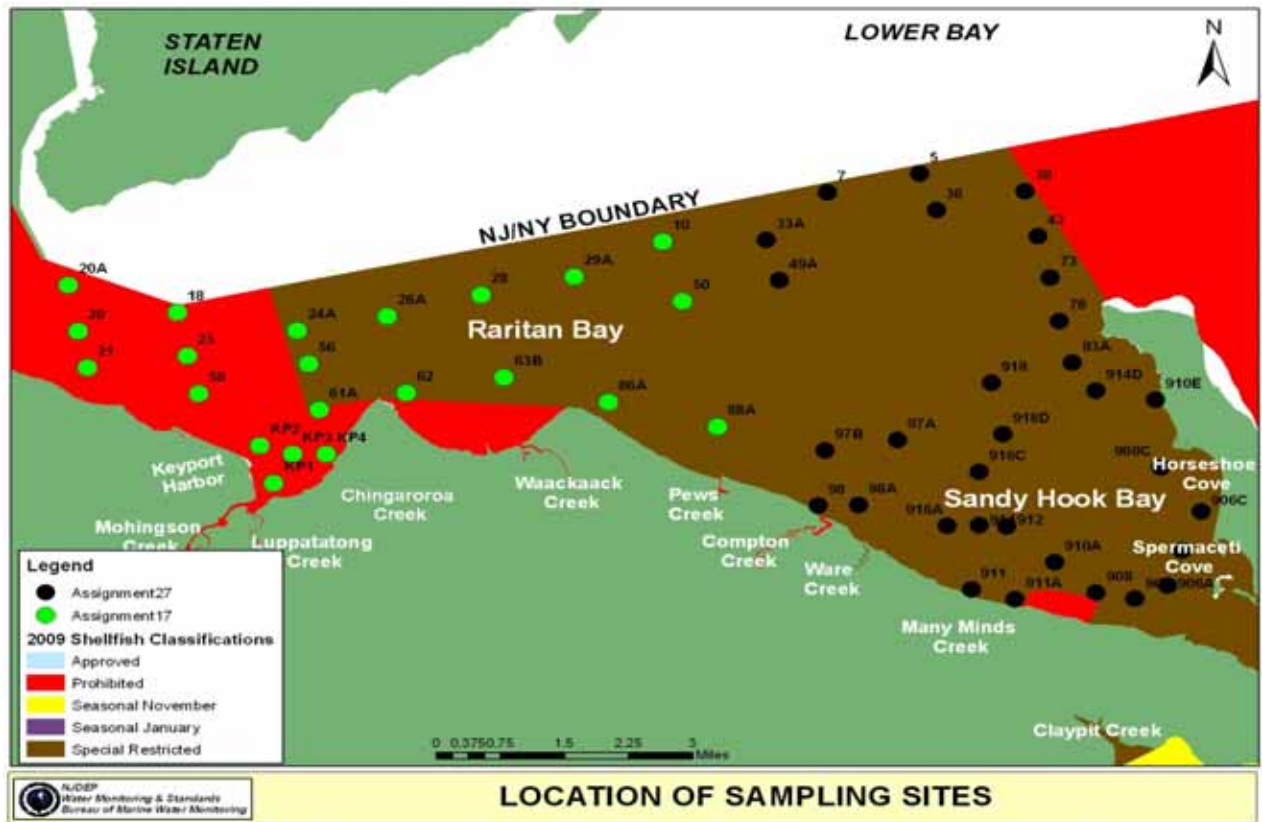
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Pathogens in the water may be transmitted to consumers through the harvest and consumption of tainted shellfish. The presence of indicators of human pathogens in shellfish harvesting waters is of serious concern. Assessment for shellfish consumption is based on information obtained from the environmental organizations of the Commission's member States, namely, the New York Department of Environmental Conservation, the New Jersey Department of Environmental Protection, the Connecticut Department of Environmental Protection and the Connecticut Department of Agriculture, Bureau of Aquaculture.

The Interstate Environmental Commission has established criteria to assess the use of shellfish consumption based on National Shellfish Sanitation Program (NSSP) classifications of shellfish growing areas, which in turn, are based on direct measures of water quality such as coliform bacteria concentrations in the water column; on shoreline surveys; and on pollution source evaluations. Coliform bacteria are indicators of the presence of pathogenic organisms. The Commission's shellfish consumption use assessment methodology — presented in Chart SC1 — is consistent with US EPA's guidance.

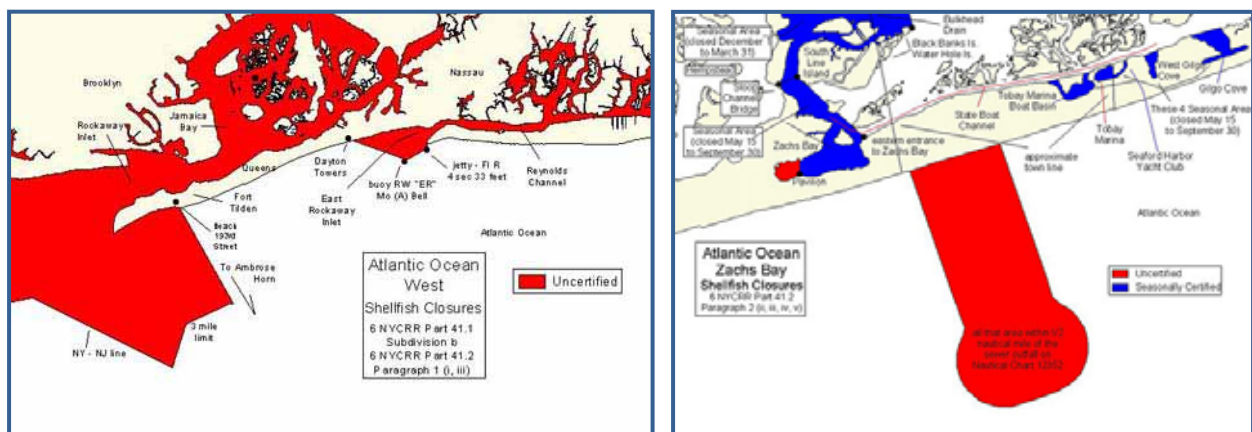
Shellfish beds are classified with respect to the specified restrictions on harvest as "Approved" when no restrictions on shellfish harvesting exist; "Conditionally Approved" when restrictions to shellfish harvesting are seasonal or further purification, either by relay to shellfish waters classified as "Approved" or by processing in a depuration plant, is required; or "Prohibited" when harvest is not allowed. Only waters where more than 75% of the area has been certified for direct harvesting are assessed as fully supporting the shellfish consumption use. Shellfish harvesting waters where 25% or more of the area has been classified as prohibited are assessed as not supporting the shellfish consumption use. Areas subject to administrative closure are not assessed for the shellfish harvest use unless water quality data are available in that area. Administrative closures of shellfish areas are precautionary measures that restrict harvest in areas that could potentially be affected by pollution, such as marinas and sewage outfalls.

The New Jersey Department of Environmental Protection maintains a network of approximately 53 active monitoring stations throughout the State's coastal waters that are within the IEC's District (Raritan and Sandy Hook Bays). These stations are sampled between five and twelve times each year for total coliform and fecal coliform bacteria. For the last fourteen years, the Interstate Environmental Commission has visited with its own research vessel, the R/V Natale Colosi, a predetermined set of between twenty two and thirty six of those stations and collected samples every year for subsequent microbiological analyses. The approximate size of the Raritan and Sandy Hook Bays growing area is about 33,118 acres. The current New Jersey NSSP shellfish classifications in that area are Special Restricted (approximately 86% of the total area) and Prohibited (approximately 14% of the total area). Because of this classification, shellfish harvested from this area must undergo depuration before they become marketable.



**Figure 12.** Classifications and monitoring stations in New Jersey's waters that are part of the Interstate Environmental Commission's District. Source: NJ DEP.

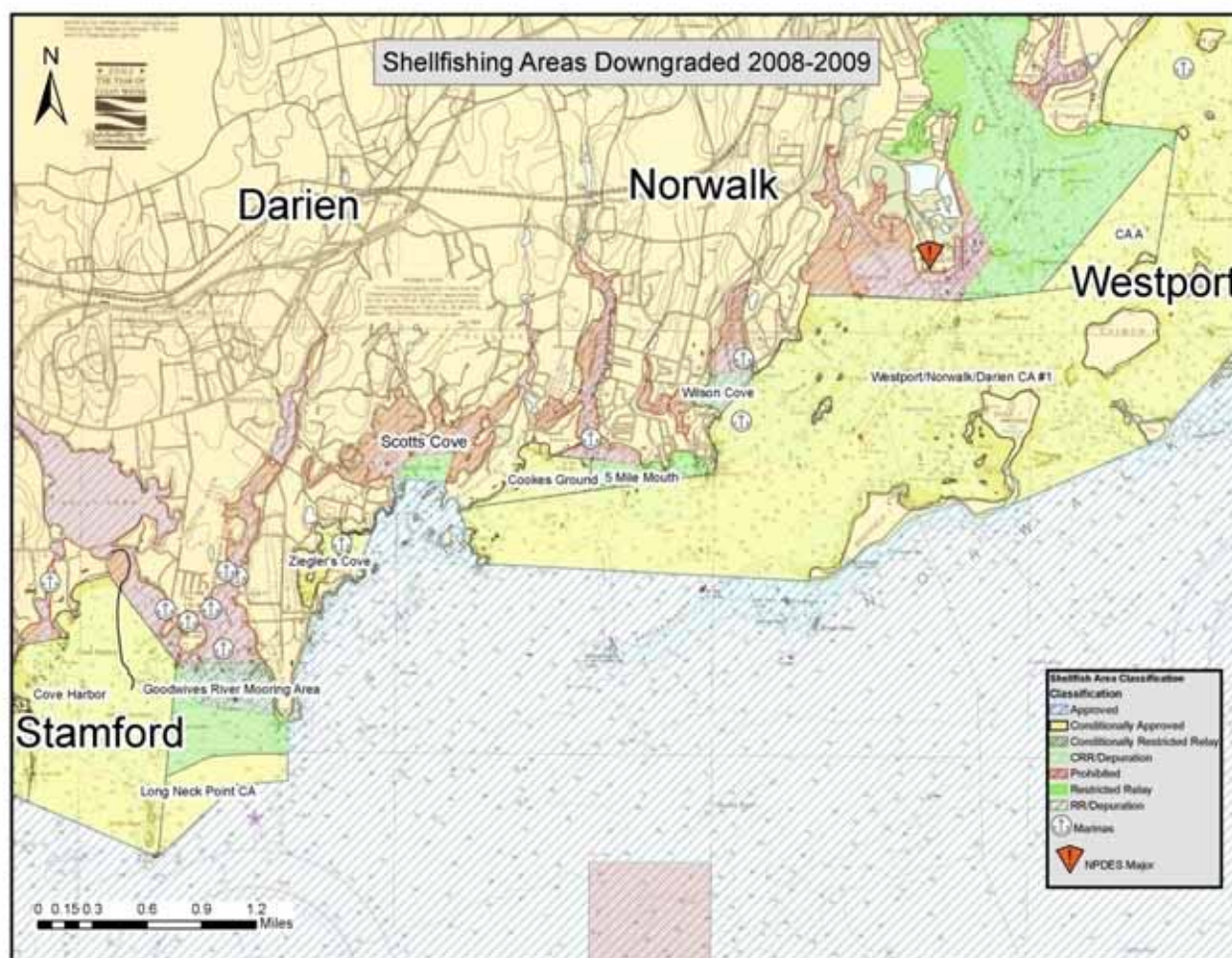
In New York State waters that are part of the Commission's District, shellfish consumption use assessments were based on information obtained from the NYS Department of Environmental Conservation's website (<http://www.dec.ny.gov/regs/4014.html#12834>, Part 41: Sanitary Condition of Shellfish Lands). The area for each shellfish bed classification was estimated by observing the images and analyzing the information provided in the aforementioned website.



**Figure 13.** Classifications in a portion of New York's waters that are part of the Interstate Environmental Commission's District and classified as Class A waters. Source: NYS DEC.



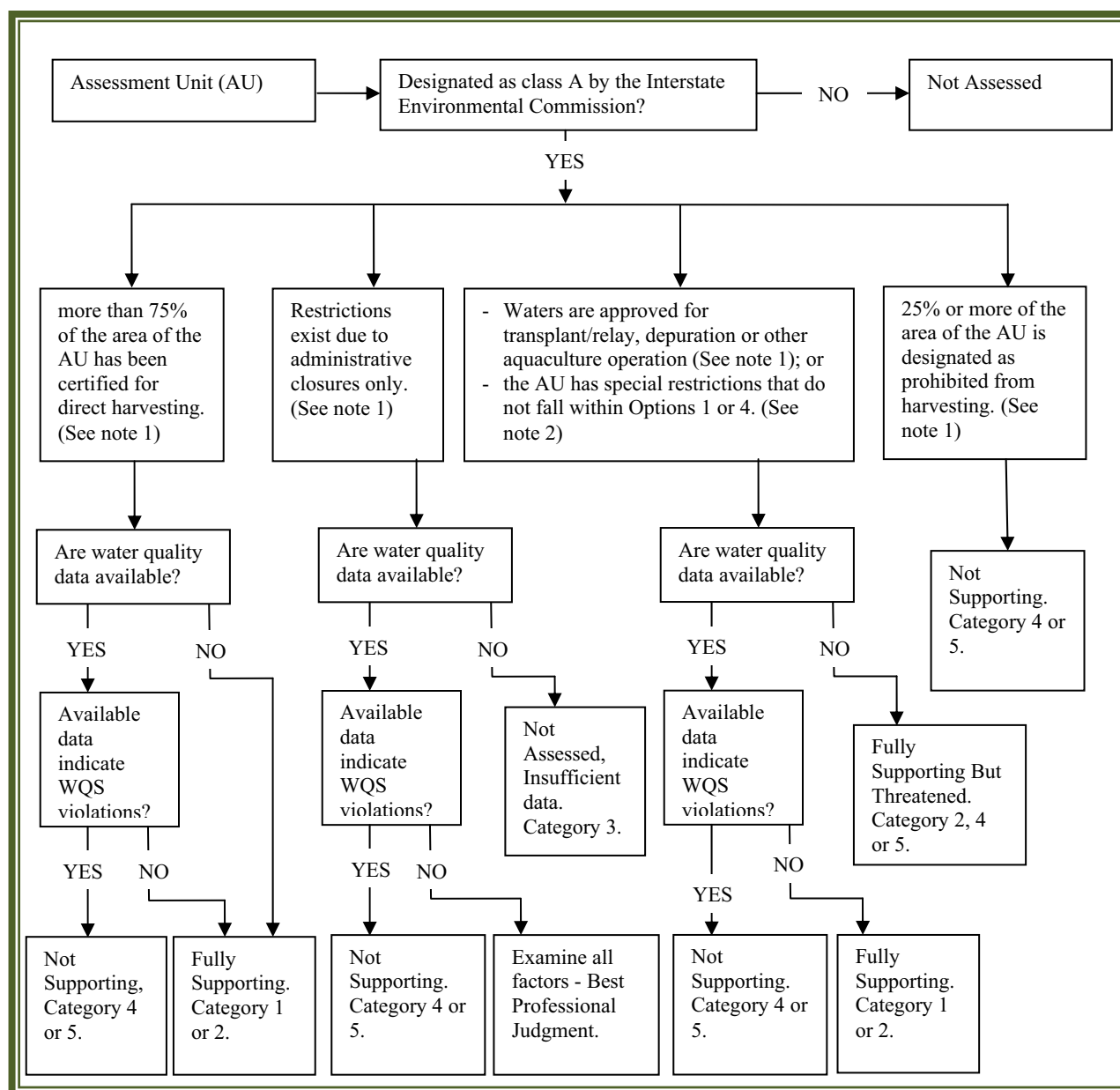
In Connecticut, shellfish growing area classifications are based on ambient water sampling and analyses, shoreline surveys and pollution source evaluations. All Connecticut waters that are part of the Interstate Environmental Commission's District (Long Island Sound west of New Haven Harbor) are classified by the Commission as Class A waters. The Connecticut Department of Agriculture, Bureau of Aquaculture places restrictions on shellfish harvesting in an area extending from the shoreline to the mid-Sound state boundary. Beyond a depth of 50 feet, there is essentially no shellfishing in the Connecticut waters that are part of the Interstate Environmental Commission's District, and these waters are not regularly monitored. These waters were not assessed because of insufficient information.



**Figure 14.** Classifications in a portion of Connecticut's waters that are part of the Interstate Environmental Commission's District. Source: CT DEP.

Data and information used for shellfish consumption use assessments were representative of the conditions over the two-year reporting period and over the entire area of the assessment units that were assessed. Data collection followed field, laboratory and analytical protocols consistent with quality assurance and quality control requirements and objectives. All existing and readily available data and information in New Jersey and Connecticut was considered during the assessment process to better characterize temporal and spatial variability.

## CHART SC1. SHELLFISH CONSUMPTION USE ASSESSMENT CRITERIA



Note 1: As issued by appropriate State and local agencies.

Note 2: Example 1: 20% of the AU's area is designated as Prohibited and 80% as Depuration or Relay only;

Example 2: 100% of the AU's area is designated as Depuration or Relay only.

**TABLE SC2. 2008-2009 SHELLFISH BED CLASSIFICATIONS**

Assessment Unit				% of area certified for direct harvesting	% of area prohibited from harvesting	% of area seasonally restricted or open for relay or depuration	Administrative restrictions?
ID	Name	Size Sq. Mi.	Class				
<i>AU1</i>	Arthur Kill	0.64	B-1	0	100	-----	-----
<i>AU2</i>	Arthur Kill/ Kill Van Kull	7.97	B-2	0	100	-----	-----
<i>AU3</i>	Atlantic Ocean	135	A	85	15	-----	-----
<i>AU4</i>	East River- Upper	0.75	A	0	100	-----	-----
<i>AU5</i>	East River- Lower	12.55	B-1	0	100	-----	-----
<i>AU6</i>	Harlem River	0.56	B-2	0	100	-----	-----
<i>AU7</i>	Hudson River- Upper	52.47	A	0	100	-----	-----
<i>AU8</i>	Hudson River-Lower	11.14	B-1	0	100	-----	-----
<i>AU9</i>	Jamaica Bay	11.32	A	0	100	-----	-----
<i>AU10</i>	Long Island Sound -West	93.74	A	0	100	-----	-----
<i>AU11</i>	Long Island Sound - CT	225	A	29	8	63	-----
<i>AU12</i>	Long Island Sound - East	81.26	A	91.4	6.8	1.8	-----
<i>AU13</i>	Lower NY Bay	46.52	A	0	100	-----	-----
<i>AU14</i>	Gravesend Bay	0.77	B-1	0	100	-----	-----
<i>AU15</i>	Newark Bay	4.28	B-2	0	100	-----	-----
<i>AU16</i>	Newtown Creek	0.24	B-2	0	100	-----	-----
<i>AU17</i>	Raritan Bay - NY	37.78	A	0	89.4	10.6	-----
<i>AU18</i>	Raritan Bay - NJ	27.44	A	0	13.8	86.2	-----
<i>AU19</i>	Sandy Hook Bay	14.78	A	0	0	100	-----
<i>AU20</i>	East Bay Great South Bay	12.42	A	41	27	32	-----
<i>AU21</i>	Upper NY Bay	20.37	B-1	0	100	-----	-----



## TABLE SC3. OVERALL 2008-2009 SHELLFISH CONSUMPTION USE ASSESSMENT

(Based on the criteria of Table SC1 and the data of Table SC2)

Assessment Unit				Assessment	Pollutant(s)	Sources
ID	Name	Size Sq. Mi.	Class			
<i>AU1</i>	Arthur Kill	0.64	B-1	Not Assessed – Use Not Assigned	-----	-----
<i>AU2</i>	Arthur Kill/ Kill Van Kull	7.97	B-2	Not Assessed – Use Not Assigned	-----	-----
<i>AU3</i>	Atlantic Ocean	135	A	Fully Supporting	-----	-----
<i>AU4</i>	East River-Upper	0.75	A	Not Supporting	Bacteria, Toxics	<i>See Note</i>
<i>AU5</i>	East River-Lower	12.55	B-1	Not Assessed – Use Not Assigned	-----	-----
<i>AU6</i>	Harlem River	0.56	B-2	Not Assessed – Use Not Assigned	-----	-----
<i>AU7</i>	Hudson River- Upper	52.47	A	Not Supporting	Bacteria, Toxics	<i>See Note</i>
<i>AU8</i>	Hudson River- Lower	11.14	B-1	Not Assessed – Use Not Assigned	-----	-----
<i>AU9</i>	Jamaica Bay	11.32	A	Not Supporting	Bacteria, Toxics	<i>See Note</i>
<i>AU10</i>	Long Island Sound -West	93.74	A	Not Supporting	Bacteria, Toxics	<i>See Note</i>
<i>AU11</i>	Long Island Sound - CT	225	A	Fully Supporting But Threatened	-----	-----
<i>AU12</i>	Long Island Sound - East	81.26	A	Fully Supporting	-----	-----
<i>AU13</i>	Lower NY Bay	46.52	A	Not Supporting	Bacteria, Toxics	<i>See Note</i>
<i>AU14</i>	Gravesend Bay	0.77	B-1	Not Assessed – Use Not Assigned	-----	-----
<i>AU15</i>	Newark Bay	4.28	B-2	Not Assessed – Use Not Assigned	-----	-----
<i>AU16</i>	Newtown Creek	0.24	B-2	Not Assessed – Use Not Assigned	-----	-----
<i>AU17</i>	Raritan Bay - NY	37.78	A	Not Supporting	Bacteria, Toxics	<i>See Note</i>
<i>AU18</i>	Raritan Bay - NJ	27.44	A	Fully Supporting But Threatened	-----	-----
<i>AU19</i>	Sandy Hook Bay	14.78	A	Fully Supporting But Threatened	-----	-----
<i>AU20</i>	East Bay Great South Bay	12.42	A	Not Supporting	Bacteria, Toxics	<i>See Note</i>
<i>AU21</i>	Upper NY Bay	20.37	B-1	Not Assessed – Use Not Assigned	-----	-----

Note: Sources include CSOs, urban runoff, storm sewers, WWTP bypasses and WWTP treated effluents.

**TABLE SC4. INTERSTATE ENVIRONMENTAL DISTRICT  
2008-2009 AREA SUPPORT SUMMARY FOR  
SHELLFISH CONSUMPTION USE**

	Total Area (Square Miles)	% of Total Area
Fully Supporting	<b>216.26</b>	<b>27.13</b>
Fully Supporting But Threatened	<b>267.22</b>	<b>33.53</b>
Not Supporting	<b>255</b>	<b>31.99</b>
Not Assessed - Use Not Assigned	<b>58.52</b>	<b>7.35</b>
Not Assessed - Insufficient Data	<b>0.00</b>	<b>0.00</b>

# PRIMARY CONTACT RECREATION USE ASSESSMENT: METHODOLOGY-SUPPORTING DATA-RESULTS

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Serious human health concerns are associated with primary contact recreation because humans come into direct contact with waters, which could potentially result in accidental ingestion of pathogens that can cause illness. Primary contact recreation includes, but is not limited to, swimming, water skiing, kayaking, jet skiing, scuba diving and surfing.

Only those waters that are classified by the Interstate Environmental Commission as Class-A waters are assessed for primary contact recreation. Assessment is based on beach closure information as issued by State and local health departments. The Interstate Environmental Commission has established general impairment thresholds based on the number of designated bathing beach facilities within an assessment unit that have been closed during the official bathing season — Memorial Day to Labor Day — and the number of days that those beach facilities have been closed. Table PC1 provides a detailed description of the Commission's primary contact recreation use assessment criteria.

The decision to maintain or alter the status of a bathing area is made by State and local health departments after collecting sufficient water quality data and comparing single measurements and the 30-day log-average (geometric mean) of pathogenic indicator measurements to applicable water quality criteria. The quality of samples is assessed based on conformance or non-conformance to standards. Other beach-specific factors are also considered when assessing the condition of a bathing area. These include weather, verified spills or dischargers of contaminants affecting the bathing area, past criteria exceedances, knowledge of potential sources of contamination, area characteristics, and recent sample results. In addition to exceedances of water quality standards, beach closures can occur when preemptive standards are exceeded. A preemptive standard is the threshold level of precipitation that, when exceeded, can lead to elevated levels of bacteria caused by combined sewer overflows and/or stormwater runoff.

Data and information used in primary contact recreation use assessments was representative of the conditions over the two-year reporting period and over the entire area of the assessment units that was assessed. Data collection followed field, laboratory and analytical protocols consistent with quality assurance and quality control requirements and objectives. All existing and readily available data and information was considered during the assessment process to better characterize the temporal and spatial variability of assessment units. Assessments based on larger sample sets are more likely to indicate the likelihood of water quality criteria exceedances than assessments based on smaller sample sets.

According to the Federal Beaches Environmental Assessment and Coastal Health Act of 2000 (BEACH Act), enterococci should be the indicator organism for evaluating the microbiological quality of saline recreational beach waters. The BEACH Act requires that

enterococci single sample results shall not exceed 104 Colony Forming Units (CFUs) per 100 ml, and enterococci geometric mean shall not exceed 35 CFUs per 100 ml for a series of five or more samples collected during a 30-day period.

In New York, the following bacteriological indicator levels are also used when determining acceptability of water quality for bathing beaches: based on a single sample, the upper value for the density of bacteria cannot exceed 1,000 fecal coliform bacteria per 100 ml and based on the mean of the logarithms of the results of the total number of samples collected in a 30 day period, the upper value for the density of bacteria cannot exceed 2,400 total coliform bacteria per 100 ml or 200 fecal coliform bacteria per 100 ml.

The Interstate Environmental Commission requested and obtained beach closure information for 2008 and 2009 from the:

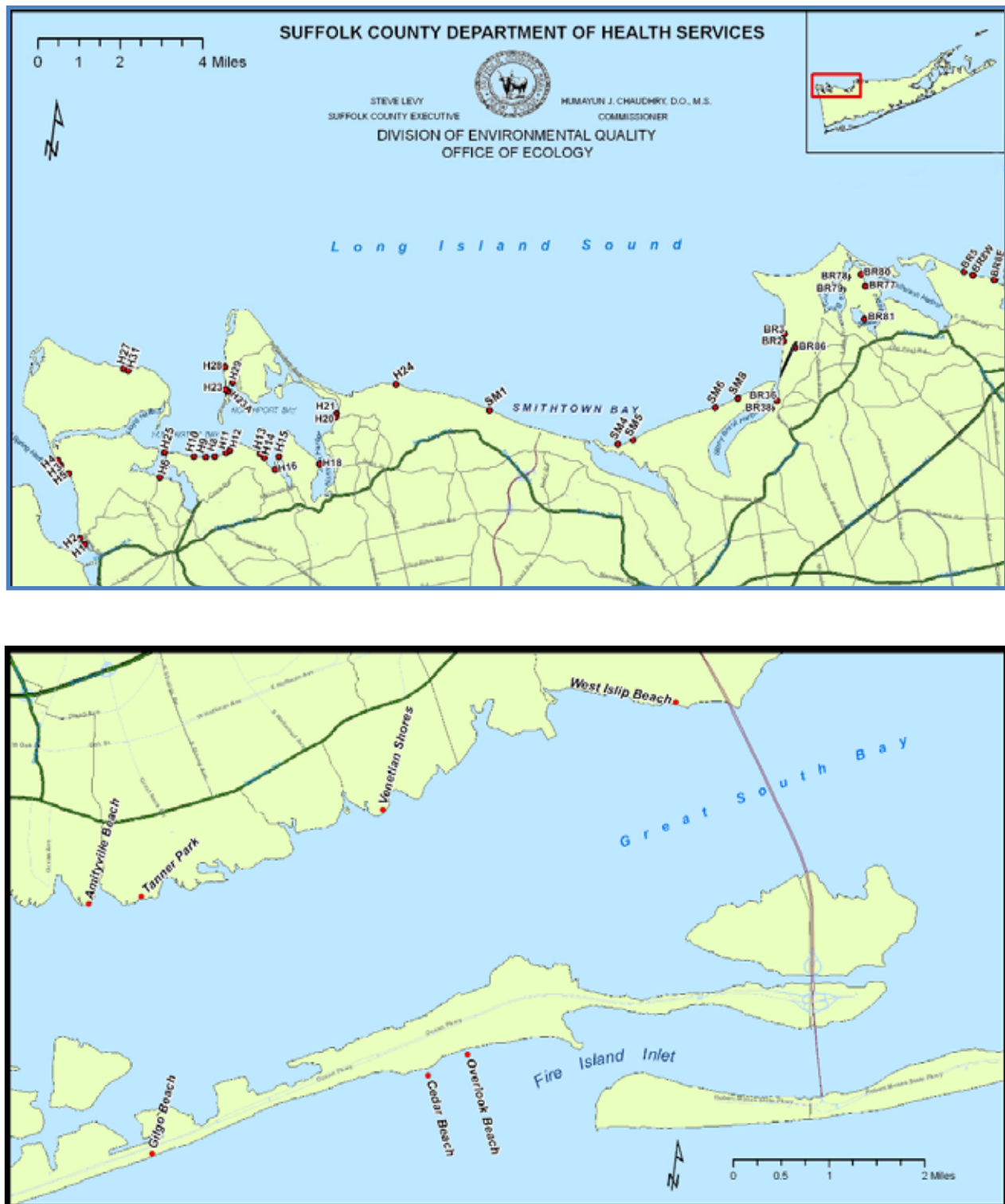
- New York City Department of Health and Mental Hygiene
- Nassau County Department of Health
- Westchester County Department of Health
- Rockland County Department of Health
- Suffolk County Department of Health
- Connecticut Department of Public Health and
- New Jersey Department of Environmental Protection.

Table PC1 details the Commission's primary contact recreation use assessment criteria. The beach closure information received by the Commission from the aforementioned departments is presented separately for each year (2008 and 2009) in Tables PC2 through PC18. Summaries of beach closure days for each 2008 and 2009 and each assessment unit are presented in Tables PC18 and PC19. Based on these summaries, primary contact recreation is assessed separately for 2008 and 2009 for each assessment unit (Tables PC20 and PC21). A combined assessment is presented in Table PC22, along with cause and source information and a summary of the area of waters in each category is presented in Table PC23.

FIGURE 15. Map of NYC Public And Private Beaches (Source: NYC Beach Report)



**FIGURE 16. MAP OF SUFFOLK COUNTY NORTH AND SOUTH SHORE BEACHES**  
 (Source: Suffolk County Department of Health)

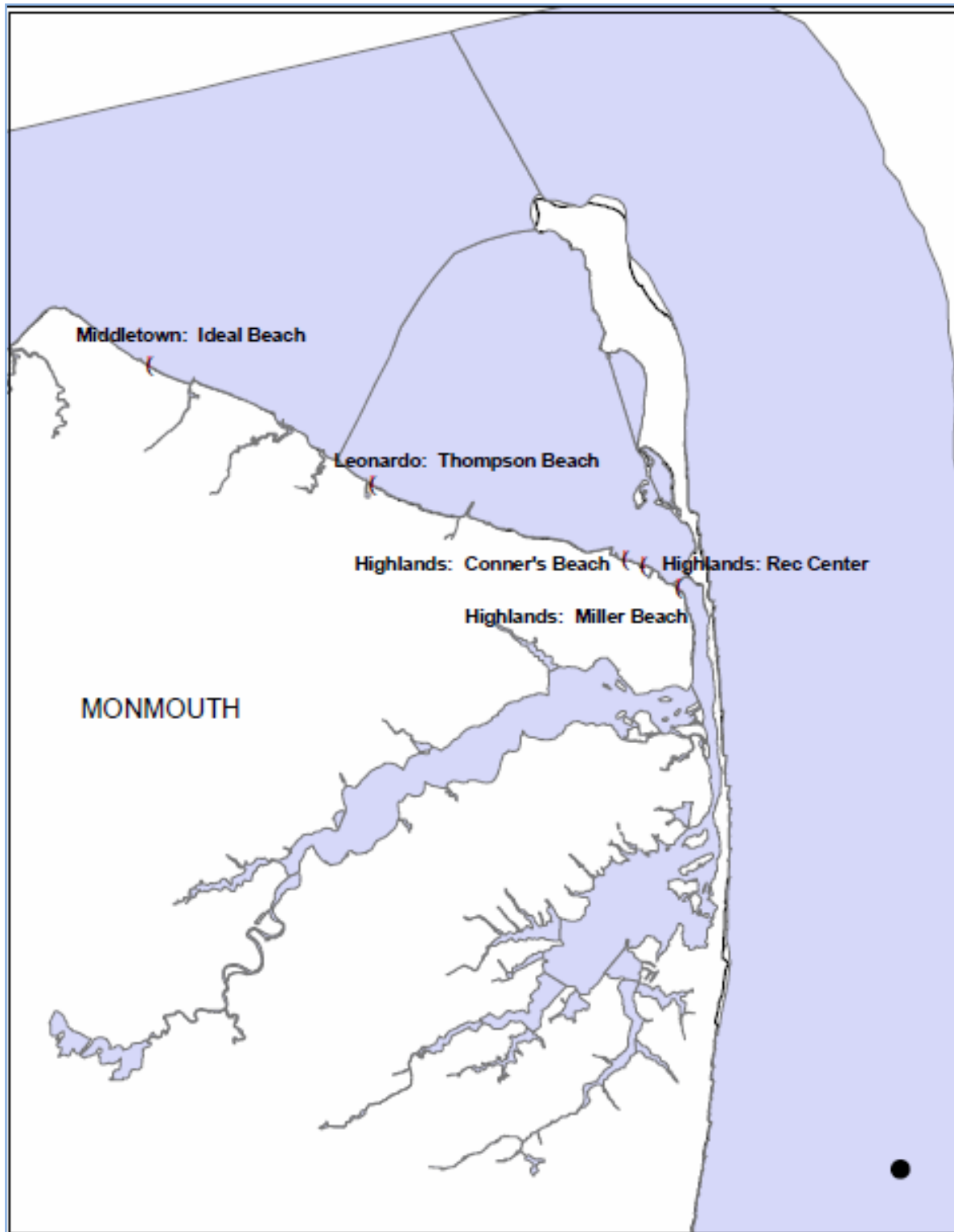




**FIGURE 17. MAP OF NASSAU COUNTY BEACHES**

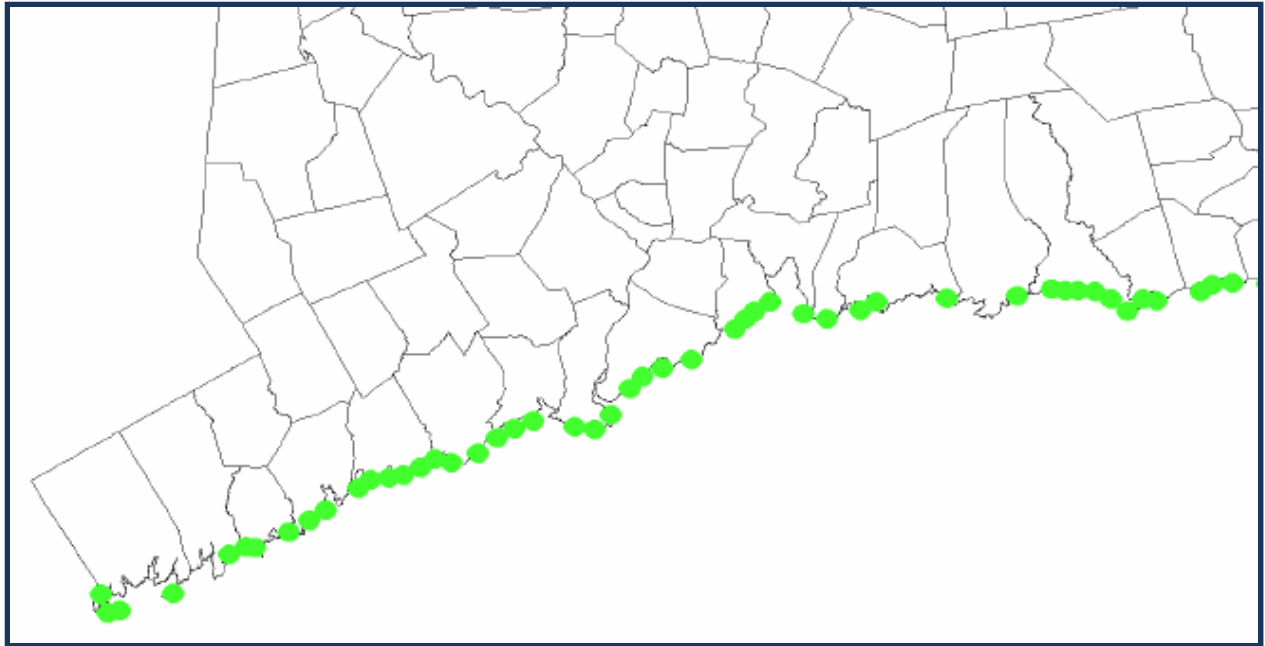


**FIGURE 18. MAP OF RARITAN BAY, NEW JERSEY, RECREATIONAL SHORE BEACHES (Source: NJ DEP)**





**FIGURE 19. CONNECTICUT SHORELINE SAMPLING STATIONS AT REGULATED BATHING AREAS (Source: Connecticut's 2009 Annual Report for the US EPA BEACH Grant)**



**TABLE PC1. PRIMARY CONTACT RECREATION  
ASSESSMENT CRITERIA**

<b>CRITERIA</b>	<b>DESIGNATED USE SUPPORT</b>
<p>An assessment unit is fully supporting primary contact recreation when in less than 20%<sup>(1)</sup> of the bathing areas within the assessment unit:</p> <ul style="list-style-type: none"> <li>- the number of closure days<sup>(2)</sup> due to non-precautionary reasons did not exceed 5% of the days of the official bathing season<sup>(3)</sup>, or</li> <li>- the number of consecutive closure days due to precautionary or non-precautionary reasons did not equal to or exceed 7 days, or</li> <li>- the number of precautionary closures days did not exceed 10% of the days of the official bathing season with no closure lasting more than 7 consecutive days.</li> </ul>	Fully Supporting
<p>An assessment unit is fully supporting primary contact recreation but threatened when:</p> <ul style="list-style-type: none"> <li>- occasional water quality conditions (e.g., reduced clarity, floatable material, periodic algal blooms or other aesthetic factor) discourage swimming, or</li> <li>- when, based on the number of beach closure days, the assessment unit cannot be placed in either the Fully Supporting or the Not Supporting categories.</li> </ul>	Fully Supporting but Threatened
<p>An assessment unit is not supporting primary contact recreation when in equal to or more than 20%<sup>(1)</sup> of the bathing areas within the assessment unit:</p> <ul style="list-style-type: none"> <li>- the number of closure days<sup>(2)</sup> due to non-precautionary reasons exceeded 5% of the days of the official bathing season<sup>(3)</sup>, or</li> <li>- the number of consecutive closure days due to precautionary or non-precautionary reasons exceeded 7 days, or</li> <li>- the number of precautionary closure days exceeded 30% of the days of the bathing season with no closure lasting more than 7 consecutive days.</li> </ul>	Not Supporting
<p>An assessment unit is not assessed for primary contact recreation when:</p> <ul style="list-style-type: none"> <li>- it is classified by the Interstate Environmental Commission as either class B-1 or B-2, or</li> <li>- because of insufficient data.</li> </ul>	Not Assessed

(1) This is a general guideline, which could be surpassed by individual assessment unit examination and best professional judgment. Due to the interstate nature of some assessment units and, in some cases, multiple county health department jurisdictions, beach closure policies vary. At times, less than 20% of the total number of beaches may have significant impact on the assessment unit as a whole.

(2) As issued by State and local health departments.

(3) Memorial Day weekend to Labor Day.

**TABLE PC2. 2009 NEW YORK CITY PUBLIC BEACH  
CLOSURE SUMMARY**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Coney Island 15 <sup>th</sup> to 6 <sup>th</sup> Street	9	6/7/2009	6/7/2009	1	Preemptive Closure <sup>1</sup>
Coney Island 6 <sup>th</sup> Street to Ocean Pkwy	9	6/7/2009	6/7/2009	1	Preemptive Closure <sup>1</sup>
Coney Island Ocean Pkwy to West 8 <sup>th</sup> Street	9	6/7/2009	6/7/2009	1	Preemptive Closure <sup>1</sup>
Coney Island West 8 <sup>th</sup> Street to Pier	9	6/7/2009	6/7/2009	1	Preemptive Closure <sup>1</sup>
Coney Island West 16 <sup>th</sup> to West 27 <sup>th</sup> Street	9	6/7/2009	6/7/2009	1	Preemptive Closure <sup>1</sup>
Coney Island West 28 <sup>th</sup> to West 37 <sup>th</sup> Street	9	6/7/2009	6/7/2009	1	Preemptive Closure <sup>1</sup>
Manhattan Beach	9	6/7/2009	6/7/2009	1	Preemptive Closure <sup>1</sup>

(1) Preemptive closure initiated due to a sewage bypass from the Coney Island Waste Water Treatment Plant.

**TABLE PC3. 2009 NEW YORK CITY PRIVATE BEACH  
CLOSURE SUMMARY**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Douglaston Manor Association	10	5/24/2009	6/23/2009	31	Confirmed Enterococci Levels Above Limit
American Turner	10	6/17/2009	6/18/2009	2	Confirmed Enterococci Exceed ence
American Turner	10	6/27/2009	7/1/2009	5	Confirmed Enterococci Levels Above Limit
Breezy Point 219th Street	9	6/7/2009	6/7/2009	1	Preemptive <sup>1</sup>
Breezy Point Reid Avenue	3	6/7/2009	6/7/2009	1	Preemptive <sup>1</sup>
Danish American	10	6/17/2009	6/18/2009	2	Confirmed Enterococci Levels Above Limit
Danish American	10	6/27/2009	7/1/2009	5	Confirmed Enterococci Exceedence
Kiddy Gerritsen	9	6/7/2009	6/7/2009	1	Preemptive
Kingsborough community College	9	6/7/2009	6/7/2009	1	Preemptive <sup>1</sup>
Kingsborough community College	9	8/14/2009	8/19/2009	6	Confirmed Enterococci Levels Above Limit
Manhem Club	10	6/27/2009	7/1/2009	5	Confirmed Enterococci Levels Above Limit
Morris Yacht and Beach Club	10	8/22/2009	8/27/2009	6	Confirmed Enterococci Levels Above Limit
Trinity Danish	10	6/17/2009	6/18/2009	2	Confirmed Enterococci Levels Above Limit
Trinity Danish	10	6/27/2009	7/1/2009	5	Confirmed Enterococci Levels Above Limit
White Cross Fishing Club	10	6/17/2009	7/1/2009	5	Confirmed Enterococci Levels Above Limit

(1) This preemptive closure was initiated due to sewage by pass from the Coney Island Waste Water Treatment Plant

**TABLE PC4. 2008 NEW YORK CITY PUBLIC BEACH CLOSURE SUMMARY**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
(*)					

\* Zero New York City Public Beach Closures Occurred in 2008

**TABLE PC5. 2008 NEW YORK CITY PRIVATE BEACH CLOSURE SUMMARY**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Douglaston Manor Association	10	6/13/2008	7/18/2008	35	Confirmed Enterococci Levels Above Limit
Gerritsen/Kiddie Beach	9	6/14/2008	6/19/2008	6	Confirmed Enterococci Levels Above Limit

**TABLE PC6. 2009 NASSAU COUNTY BEACH CLOSURE SUMMARY**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Biltmore Beach Club	20	6/6/09	6/7/09	1	Preemptive
Biltmore Beach Club	20	6/21/09	6/22/09	1	Preemptive
Biltmore Beach Club	20	6/27/09	7/4/09	7	Elevated Bacteria
Biltmore Beach Club	20	7/8/09	7/9/09	1	Preemptive
Biltmore Beach Club	20	7/24/09	7/25/09	1	Preemptive
Biltmore Beach Club	20	8/22/09	8/23/09	1	Preemptive
Biltmore Beach Club	20	8/29/09	8/30/09	1	Preemptive
Hewlett Point Beach	20	6/6/09	6/7/09	1	Preemptive
Hewlett Point Beach	20	6/21/09	6/22/09	1	Preemptive
Hewlett Point Beach	20	7/8/09	7/9/09	1	Preemptive
Hewlett Point Beach	20	7/24/09	7/25/09	1	Preemptive
Hewlett Point Beach	20	7/27/09	7/28/09	1	Preemptive
Hewlett Point Beach	20	8/1/09	8/2/09	1	Preemptive
Hewlett Point Beach	20	8/22/09	8/23/09	1	Preemptive
Hewlett Point Beach	20	8/29/09	8/30/09	1	Preemptive
Island Park Beach	20	7/8/09	7/9/09	1	Preemptive

**TABLE PC6. 2009 NASSAU COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Island Park Beach	20	7/24/09	7/25/09	1	Preemptive
Island Park Beach	20	7/27/09	7/28/09	1	Preemptive
Island Park Beach	20	8/1/09	8/2/09	1	Preemptive
Island Park Beach	20	8/22/09	8/23/09	1	Preemptive
Island Park Beach	20	8/29/09	8/30/09	1	Preemptive
Phillip Healey Beach	20	6/6/09	6/7/09	1	Preemptive
Phillip Healey Beach	20	6/19/09	6/20/09	1	Preemptive
Phillip Healey Beach	20	6/21/09	6/22/09	1	Preemptive
Phillip Healey Beach	20	6/22/09	7/3/09	11	Elevated Bacteria
Phillip Healey Beach	20	7/8/09	7/9/09	1	Preemptive
Phillip Healey Beach	20	7/24/09	7/25/09	1	Preemptive
Phillip Healey Beach	20	7/31/09	8/2/09	2	Elevated Bacteria
Phillip Healey Beach	20	8/22/09	8/23/09	1	Preemptive
Phillip Healey Beach	20	8/29/09	8/30/09	1	Preemptive
North Hempstead Beach Park	10?	6/4/09	6/5/09	1	Preemptive
North Hempstead Beach Park	10	6/6/09	6/7/09	1	Preemptive

**TABLE PC6. 2009 NASSAU COUNTY BEACH CLOSURE  
SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
North Hempstead Beach Park	10	6/9/09	6/10/09	1	Preemptive
North Hempstead Beach Park	10	6/12/09	6/13/09	1	Preemptive
North Hempstead Beach Park	10	6/19/09	6/20/09	1	Preemptive
North Hempstead Beach Park	10	6/21/09	6/22/09	1	Preemptive
North Hempstead Beach Park	10	6/24/09	6/25/09	1	Preemptive
North Hempstead Beach Park	10	7/1/09	7/2/09	1	Preemptive
North Hempstead Beach Park	10	7/8/09	7/9/09	1	Preemptive
North Hempstead Beach Park	10	7/24/09	7/25/09	1	Preemptive
North Hempstead Beach Park	10	7/27/09	7/28/09	1	Preemptive
North Hempstead Beach Park	10	8/1/09	8/2/09	1	Preemptive
North Hempstead Beach Park	10	8/9/09	8/11/09	2	Elevated Bacteria
North Hempstead Beach Park	10	8/22/09	8/23/09	1	Preemptive
North Hempstead Beach Park	10	8/29/09	8/30/09	1	Preemptive
Centre Island Bay	12	6/6/09	6/7/09	1	Preemptive
Centre Island Bay	12	6/19/09	6/20/09	1	Preemptive
Centre Island Bay	12	6/21/09	6/22/09	1	Preemptive



**TABLE PC6. 2009 NASSAU COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Centre Island Bay	12	6/24/09	6/25/09	1	Preemptive
Centre Island Bay	12	7/1/09	7/2/09	1	Preemptive
Centre Island Bay	12	7/8/09	7/9/09	1	Preemptive
Centre Island Bay	12	7/24/09	7/25/09	1	Preemptive
Centre Island Bay	12	7/27/09	7/28/09	1	Preemptive
Centre Island Bay	12	8/1/09	8/2/09	1	Preemptive
Centre Island Bay	12	8/22/09	8/23/09	1	Preemptive
Centre Island Bay	12	8/29/09	8/30/09	1	Preemptive
Centre Island Sound	12	6/6/09	6/7/09	1	Preemptive
Centre Island Sound	12	6/19/09	6/20/09	1	Preemptive
Centre Island Sound	12	6/21/09	6/22/09	1	Preemptive
Centre Island Sound	12	6/24/09	6/25/09	1	Preemptive
Centre Island Sound	12	7/1/09	7/2/09	1	Preemptive
Centre Island Sound	12	7/8/09	7/9/09	1	Preemptive
Centre Island Sound	12	7/24/09	7/25/09	1	Preemptive
Centre Island Sound	12	7/27/09	7/28/09	1	Preemptive

**TABLE PC6. 2009 NASSAU COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Centre Island Sound	12	8/1/09	8/2/09	1	Preemptive
Centre Island Sound	12	8/22/09	8/23/09	1	Preemptive
Centre Island Sound	12	8/29/09	8/30/09	1	Preemptive
Creek Club	12	6/4/09	6/5/09	1	Preemptive
Creek Club	12	6/6/09	6/7/09	1	Preemptive
Creek Club	12	6/9/09	6/10/09	1	Preemptive
Creek Club	12	6/12/09	6/13/09	1	Preemptive
Creek Club	12	6/19/09	6/20/09	1	Preemptive
Creek Club	12	6/21/09	6/2/09	1	Preemptive
Creek Club	12	6/24/09	6/25/09	1	Preemptive
Creek Club	12	7/1/09	7/2/09	1	Preemptive
Creek Club	12	7/8/09	7/9/09	1	Preemptive
Creek Club	12	7/24/09	7/25/09	1	Preemptive
Creek Club	12	7/27/09	7/28/09	1	Preemptive
Creek Club	12	8/1/09	8/2/09	1	Preemptive
Creek Club	12	8/22/09	8/23/09	1	Preemptive

**TABLE PC6. 2009 NASSAU COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Creek Club	12	8/29/09	8/30/09	1	Preemptive
Crescent Beach	10	6/6/09	6/7/09	1	Preemptive
Crescent Beach	10	6/13/09	9/8/09	87	Elevated Bacteria
Lattingtown Beach	12	6/6/09	6/7/09	1	Preemptive
Lattingtown Beach	12	6/21/09	6/22/09	1	Preemptive
Lattingtown Beach	12	7/1/09	7/2/09	1	Preemptive
Lattingtown Beach	12	7/8/09	7/9/09	1	Preemptive
Lattingtown Beach	12	7/24/09	7/25/09	1	Preemptive
Lattingtown Beach	12	8/1/09	8/2/09	1	Preemptive
Lattingtown Beach	12	8/20/09	8/23/09	3	Elevated Bacteria
Lattingtown Beach	12	8/29/09	8/30/09	1	Preemptive
Laurel Hollow Beach	12	6/4/09	6/5/09	1	Preemptive
Laurel Hollow Beach	12	6/6/09	6/7/09	1	Preemptive
Laurel Hollow Beach	12	6/9/09	6/10/09	1	Preemptive
Laurel Hollow Beach	12	6/12/09	6/13/09	1	Preemptive
Laurel Hollow Beach	12	6/19/09	6/20/09	1	Preemptive

**TABLE PC6. 2009 NASSAU COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Laurel Hollow Beach	12	6/21/09	6/22/09	1	Preemptive
Laurel Hollow Beach	12	6/24/09	6/25/09	1	Preemptive
Laurel Hollow Beach	12	6/25/09	6/26/09	1	Elevated Bacteria
Laurel Hollow Beach	12	7/1/09	7/2/09	1	Preemptive
Laurel Hollow Beach	12	7/3/09	7/10/09	8	Elevated Bacteria
Laurel Hollow Beach	12	7/24/09	7/25/09	1	Preemptive
Laurel Hollow Beach	12	7/27/09	7/28/09	1	Preemptive
Laurel Hollow Beach	12	8/1/09	8/2/09	1	Preemptive
Laurel Hollow Beach	12	8/22/09	8/23/09	1	Preemptive
Laurel Hollow Beach	12	8/29/09	8/30/09	1	Preemptive
Morgan Sound	12	6/6/09	6/7/09	1	Preemptive
Morgan Sound	12	6/21/09	6/22/09	1	Preemptive
Morgan Sound	12	7/1/09	7/2/09	1	Preemptive
Morgan Sound	12	7/8/09	7/9/09	1	Preemptive
Morgan Sound	12	7/24/09	7/25/09	1	Preemptive
Morgan Sound	12	7/27/09	7/28/09	1	Preemptive

**TABLE PC6. 2009 NASSAU COUNTY BEACH CLOSURE  
SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Morgan Sound	12	8/1/09	8/2/09	1	Preemptive
Morgan Sound	12	8/22/09	8/23/09	1	Preemptive
Morgan Sound	12	8/29/09	8/30/09	1	Preemptive
Piping Rock Beach Club	12	6/6/09	6/7/09	1	Preemptive
Piping Rock Beach Club	12	6/19/09	6/20/09	1	Preemptive
Piping Rock Beach Club	12	6/21/09	6/22/09	1	Preemptive
Piping Rock Beach Club	12	6/24/09	6/25/09	1	Preemptive
Piping Rock Beach Club	12	7/1/09	7/2/09	1	Preemptive
Piping Rock Beach Club	12	7/8/09	7/9/09	1	Preemptive
Piping Rock Beach Club	12	7/24/09	7/25/09	1	Preemptive
Piping Rock Beach Club	12	7/27/09	7/28/09	1	Preemptive
Piping Rock Beach Club	12	8/1/09	8/2/09	1	Preemptive
Piping Rock Beach Club	12	8/9/09	8/11/09	2	Elevated Bacteria
Piping Rock Beach Club	12	8/20/09	8/23/09	3	Elevated Bacteria
Piping Rock Beach Club	12	8/29/09	8/30/09	1	Preemptive
Pyrbil Beach	12	6/6/09	6/7/09	1	Preemptive

**TABLE PC6. 2009 NASSAU COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Pyrbil Beach	12	6/21/09	6/22/09	1	Preemptive
Pyrbil Beach	12	7/1/09	7/2/09	1	Preemptive
Pyrbil Beach	12	7/8/09	7/9/09	1	Preemptive
Pyrbil Beach	12	7/24/09	7/25/09	1	Preemptive
Pyrbil Beach	12	7/27/09	7/28/09	1	Preemptive
Pyrbil Beach	12	8/1/09	8/2/09	1	Preemptive
Pyrbil Beach	12	8/22/09	8/23/09	1	Preemptive
Pyrbil Beach	12	8/29/09	8/30/09	1	Preemptive
Ransom Beach	12	6/6/09	6/7/09	1	Preemptive
Ransom Beach	12	6/19/09	6/20/09	1	Preemptive
Ransom Beach	12	6/21/09	6/22/09	1	Preemptive
Ransom Beach	12	6/24/09	6/25/09	1	Preemptive
Ransom Beach	12	7/1/09	7/2/09	1	Preemptive
Ransom Beach	12	7/8/09	7/9/09	1	Preemptive
Ransom Beach	12	7/24/09	7/25/09	1	Preemptive
Ransom Beach	12	7/27/09	7/28/09	1	Preemptive

**TABLE PC6. 2009 NASSAU COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Ransom Beach	12	8/1/09	8/2/09	1	Preemptive
Ransom Beach	12	8/9/09	8/11/09	2	Elevated Bacteria
Ransom Beach	12	8/22/09	8/23/09	1	Preemptive
Ransom Beach	12	8/29/09	8/30/09	1	Preemptive
Roosevelt Beach	12	6/6/09	6/7/09	1	Preemptive
Roosevelt Beach	12	6/19/09	6/20/09	1	Preemptive
Roosevelt Beach	12	6/21/09	6/22/09	1	Preemptive
Roosevelt Beach	12	6/24/09	6/25/09	1	Preemptive
Roosevelt Beach	12	7/1/09	7/2/09	1	Preemptive
Roosevelt Beach	12	7/8/09	7/9/09	1	Preemptive
Roosevelt Beach	12	7/24/09	7/25/09	1	Preemptive
Roosevelt Beach	12	7/27/09	7/28/09	1	Preemptive
Roosevelt Beach	12	8/1/09	8/2/09	1	Preemptive
Roosevelt Beach	12	8/22/09	8/23/09	1	Preemptive
Roosevelt Beach	12	8/29/09	8/30/09	1	Preemptive
Sea Cliff Village Beach	10	6/6/09	6/7/09	1	Preemptive

**TABLE PC6. 2009 NASSAU COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Sea Cliff Village Beach	10	6/21/09	6/22/09	1	Preemptive
Sea Cliff Village Beach	10	7/1/09	7/2/09	1	Preemptive
Sea Cliff Village Beach	10	7/8/09	7/9/09	1	Preemptive
Sea Cliff Village Beach	10	7/24/09	7/25/09	1	Preemptive
Sea Cliff Village Beach	10	7/27/09	7/28/09	1	Preemptive
Sea Cliff Village Beach	10	8/1/09	8/2/09	1	Preemptive
Sea Cliff Village Beach	10	8/22/09	8/23/09	1	Preemptive
Sea Cliff Village Beach	10	8/29/09	8/30/09	1	Preemptive
Soundside Beach	12	6/6/09	6/7/09	1	Preemptive
Soundside Beach	12	6/21/09	6/22/09	1	Preemptive
Soundside Beach	12	7/1/09	7/2/09	1	Preemptive
Soundside Beach	12	7/8/09	7/9/09	1	Preemptive
Soundside Beach	12	7/24/09	7/25/09	1	Preemptive
Soundside Beach	12	7/27/09	7/28/09	1	Preemptive
Soundside Beach	12	8/1/09	8/2/09	1	Preemptive
Soundside Beach	12	8/9/09	8/11/09	2	Elevated Bacteria



**TABLE PC6. 2009 NASSAU COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Soundside Beach	12	8/20/09	8/23/09	3	Elevated Bacteria
Soundside Beach	12	8/29/09	8/30/09	1	Preemptive
Stehli Beach	12	6/6/09	6/7/09	1	Preemptive
Stehli Beach	12	6/19/09	6/20/09	1	Preemptive
Stehli Beach	12	6/21/09	6/22/09	1	Preemptive
Stehli Beach	12	6/24/09	6/25/09	1	Preemptive
Stehli Beach	12	7/1/09	7/2/09	1	Preemptive
Stehli Beach	12	7/8/09	7/9/09	1	Preemptive
Stehli Beach	12	7/24/09	7/25/09	1	Preemptive
Stehli Beach	12	7/27/09	7/28/09	1	Preemptive
Stehli Beach	12	8/1/09	8/2/09	1	Preemptive
Stehli Beach	12	8/22/09	8/23/09	1	Preemptive
Stehli Beach	12	8/29/09	8/30/09	1	Preemptive
Tappen Beach	10	6/6/09	6/7/09	1	Preemptive
Tappen Beach	10	6/19/09	6/20/09	1	Preemptive
Tappen Beach	10	6/21/09	6/22/09	1	Preemptive

**TABLE PC6. 2009 NASSAU COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Tappen Beach	10	6/24/09	6/25/09	1	Preemptive
Tappen Beach	10	7/1/09	7/2/09	1	Preemptive
Tappen Beach	10	7/8/09	7/9/09	1	Preemptive
Tappen Beach	10	7/24/09	7/25/09	1	Preemptive
Tappen Beach	10	7/27/09	7/28/09	1	Preemptive
Tappen Beach	10	8/1/09	8/2/09	1	Preemptive
Tappen Beach	10	8/22/09	8/23/09	1	Preemptive
Tappen Beach	10	8/29/09	8/30/09	1	Preemptive
West Harbor Beach	12	6/6/09	6/7/09	1	Preemptive
West Harbor Beach	12	6/21/09	6/22/09	1	Preemptive
West Harbor Beach	12	7/1/09	7/2/09	1	Preemptive
West Harbor Beach	12	7/8/09	7/9/09	1	Preemptive
West Harbor Beach	12	7/24/09	7/25/09	1	Preemptive
West Harbor Beach	12	7/27/09	7/28/09	1	Preemptive
West Harbor Beach	12	8/1/09	8/2/09	1	Preemptive
West Harbor Beach	12	8/22/09	8/23/09	1	Preemptive
West Harbor Beach	12	8/29/09	8/30/09	1	Preemptive

**TABLE PC7. 2008 NASSAU COUNTY BEACH CLOSURE SUMMARY**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Biltmore Beach Club	20	6/15/08	6/16/08	1	Preemptive
Biltmore Beach Club	20	7/18/08	8/11/08	24	Elevated Bacteria
Biltmore Beach Club	20	8/14/08	8/22/08	8	Elevated Bacteria
Biltmore Beach Club	20	8/30/08	8/31/08	1	Preemptive
Hewlett Point Beach	20	6/15/08	6/16/08	1	Preemptive
Hewlett Point Beach	20	7/23/08	7/25/08	2	Preemptive
Hewlett Point Beach	20	7/28/08	7/29/08	1	Preemptive
Hewlett Point Beach	20	8/15/08	8/17/08	2	Preemptive
Hewlett Point Beach	20	8/30/08	8/31/08	1	Preemptive
Island Park beach	20	6/15/08	6/16/08	1	Preemptive
Island Park beach	20	7/23/08	7/25/08	2	Preemptive
Island Park beach	20	7/28/08	7/29/08	1	Preemptive
Island Park beach	20	8/15/08	8/17/08	2	Preemptive
Island Park beach	20	8/30/08	8/31/08	1	Preemptive
Phillip Healey Beach	20	5/24/08	6/29/08	37	Elevated Bacteria
Phillip Healey Beach	20	7/23/08	7/25/08	2	Preemptive

**TABLE PC7. 2008 NASSAU COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Phillip Healey Beach	20	7/28/08	7/29/09	1	Preemptive
Phillip Healey Beach	20	8/15/08	8/17/08	2	Preemptive
Phillip Healey Beach	20	8/30/08	8/31/08	1	Preemptive
Bar Beach	10	6/15/08	6/16/08	1	Preemptive
Bar Beach	10	7/24/08	7/25/08	1	Preemptive
Bar Beach	10	7/28/08	7/29/08	1	Preemptive
Bar Beach	10	8/6/08	8/7/08	1	Preemptive
Bar Beach	10	8/12/08	8/13/08	1	Preemptive
Bar Beach	10	8/15/08	8/17/08	2	Preemptive
Bar Beach	10	8/30/08	8/31/08	1	Preemptive
Centre Island Bay	12	6/15/08	6/16/08	1	Preemptive
Centre Island Bay	12	7/24/08	7/25/08	1	Preemptive
Centre Island Bay	12	7/28/08	7/29/08	1	Preemptive
Centre Island Bay	12	8/6/08	8/7/08	1	Preemptive
Centre Island Bay	12	8/8/08	8/9/08	1	Preemptive
Centre Island Bay	12	8/12/08	8/13/08	1	Preemptive

**TABLE PC7. 2008 NASSAU COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Centre Island Bay	12	8/15/08	8/17/08	2	Preemptive
Centre Island Bay	12	8/30/08	8/31/08	1	Preemptive
Centre Island Sound	12	6/15/08	6/16/08	1	Preemptive
Centre Island Sound	12	7/24/08	7/25/08	1	Preemptive
Centre Island Sound	12	7/28/08	7/29/08	1	Preemptive
Centre Island Sound	12	8/6/08	8/7/08	1	Preemptive
Centre Island Sound	12	8/8/08	8/9/08	1	Preemptive
Centre Island Sound	12	8/12/08	8/13/08	1	Preemptive
Centre Island Sound	12	8/15/08	8/17/08	2	Preemptive
Centre Island Sound	12	8/30/08	8/31/08	1	Preemptive
Creek Club	12	6/15/08	6/16/08	1	Preemptive
Creek Club	12	7/24/08	7/25/08	1	Preemptive
Creek Club	12	7/28/08	7/29/08	1	Preemptive
Creek Club	12	8/6/08	8/7/08	1	Preemptive
Creek Club	12	8/8/08	8/9/08	1	Preemptive
Creek Club	12	8/12/08	8/13/08	1	Preemptive

**TABLE PC7. 2008 NASSAU COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Creek Club	12	8/15/08	8/17/08	2	Preemptive
Creek Club	12	8/30/08	8/31/08	1	Preemptive
Crescent Beach	10	6/15/08	6/16/08	1	Preemptive
Crescent Beach	10	7/24/08	7/25/08	1	Preemptive
Crescent Beach	10	7/28/08	7/29/08	1	Preemptive
Crescent Beach	10	8/6/08	8/7/08	1	Preemptive
Crescent Beach	10	8/12/08	8/13/08	1	Preemptive
Crescent Beach	10	8/15/08	8/17/08	2	Preemptive
Crescent Beach	10	8/30/08	8/31/08	1	Preemptive
Lattingtown Beach	12	6/15/08	6/16/08	1	Preemptive
Lattingtown Beach	12	7/24/08	7/25/08	1	Preemptive
Lattingtown Beach	12	7/28/08	7/29/08	1	Preemptive
Lattingtown Beach	12	8/6/08	8/7/08	1	Preemptive
Lattingtown Beach	12	8/12/08	8/13/08	1	Preemptive
Lattingtown Beach	12	8/15/08	8/17/08	2	Preemptive
Lattingtown Beach	12	8/30/08	8/31/08	1	Preemptive

**TABLE PC7. 2008 NASSAU COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Laurel Hollow Beach	12	6/15/08	6/16/08	1	Preemptive
Laurel Hollow Beach	12	7/24/08	7/25/08	1	Preemptive
Laurel Hollow Beach	12	7/28/08	7/29/08	1	Preemptive
Laurel Hollow Beach	12	8/6/08	8/7/08	1	Preemptive
Laurel Hollow Beach	12	8/8/08	8/9/08	1	Preemptive
Laurel Hollow Beach	12	8/12/08	8/13/08	1	Preemptive
Laurel Hollow Beach	12	8/15/08	8/17/08	2	Preemptive
Laurel Hollow Beach	12	8/30/08	8/31/08	1	Preemptive
Morgan Sound	12	6/15/08	6/16/08	1	Preemptive
Morgan Sound	12	7/24/08	7/25/08	1	Preemptive
Morgan Sound	12	7/28/08	7/29/08	1	Preemptive
Morgan Sound	12	8/6/08	8/7/08	1	Preemptive
Morgan Sound	12	8/12/08	8/13/08	1	Preemptive
Morgan Sound	12	8/15/08	8/17/08	2	Preemptive
Morgan Sound	12	8/30/08	8/31/08	1	Preemptive
Piping Rock Beach Club	12	6/15/08	6/16/08	1	Preemptive

**TABLE PC7. 2008 NASSAU COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Piping Rock Beach Club	12	7/24/08	7/25/08	1	Preemptive
Piping Rock Beach Club	12	7/28/08	7/29/08	1	Preemptive
Piping Rock Beach Club	12	8/6/08	8/7/08	1	Preemptive
Piping Rock Beach Club	12	8/8/08	8/9/08	1	Preemptive
Piping Rock Beach Club	12	8/12/08	8/13/08	1	Preemptive
Piping Rock Beach Club	12	8/15/08	8/17/08	2	Preemptive
Piping Rock Beach Club	12	8/30/08	8/31/08	1	Preemptive
Pyrbil Beach	12	6/15/08	6/16/08	1	Preemptive
Pyrbil Beach	12	7/24/08	7/25/08	1	Preemptive
Pyrbil Beach	12	7/28/08	7/29/08	1	Preemptive
Pyrbil Beach	12	8/6/08	8/7/08	1	Preemptive
Pyrbil Beach	12	8/12/08	8/13/08	1	Preemptive
Pyrbil Beach	12	8/15/08	8/17/08	2	Preemptive
Pyrbil Beach	12	8/30/08	8/31/08	1	Preemptive
Ransom Beach	12	6/15/08	6/16/08	1	Preemptive
Ransom Beach	12	7/24/08	7/25/08	1	Preemptive



**TABLE PC7. 2008 NASSAU COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Ransom Beach	12	7/28/08	7/29/08	1	Preemptive
Ransom Beach	12	8/6/08	8/7/08	1	Preemptive
Ransom Beach	12	8/8/08	8/9/08	1	Preemptive
Ransom Beach	12	8/12/08	8/13/08	1	Preemptive
Ransom Beach	12	8/15/08	8/17/08	2	Preemptive
Ransom Beach	12	8/30/08	8/31/08	1	Preemptive
Roosevelt Beach	12	6/15/08	6/16/08	1	Preemptive
Roosevelt Beach	12	7/24/08	7/25/08	1	Preemptive
Roosevelt Beach	12	7/28/08	7/29/08	1	Preemptive
Roosevelt Beach	12	8/6/08	8/7/08	1	Preemptive
Roosevelt Beach	12	8/08/08	8/09/08	1	Preemptive
Roosevelt Beach	12	8/12/08	8/13/08	1	Preemptive
Roosevelt Beach	12	8/15/08	8/17/08	2	Preemptive
Roosevelt Beach	12	8/30/08	8/31/08	1	Preemptive
Sea Cliff Village Beach	10	6/15/08	6/16/08	1	Preemptive
Sea Cliff Village Beach	10	7/24/08	7/25/08	1	Preemptive

**TABLE PC7. 2008 NASSAU COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Sea Cliff Village Beach	10	7/28/08	7/29/08	1	Preemptive
Sea Cliff Village Beach	10	8/6/08	8/7/08	1	Preemptive
Sea Cliff Village Beach	10	8/12/08	8/13/08	1	Preemptive
Sea Cliff Village Beach	10	8/15/08	8/17/08	2	Preemptive
Sea Cliff Village Beach	10	8/30/08	8/31/08	1	Preemptive
Soundside Beach	12	6/15/08	6/16/08	1	Preemptive
Soundside Beach	12	7/24/08	7/25/08	1	Preemptive
Soundside Beach	12	7/28/08	7/29/08	1	Preemptive
Soundside Beach	12	8/6/08	8/7/08	1	Preemptive
Soundside Beach	12	8/8/08	8/9/08	1	Preemptive
Soundside Beach	12	8/12/08	8/13/08	1	Preemptive
Soundside Beach	12	8/15/08	8/17/08	2	Preemptive
Soundside Beach	12	8/30/08	8/31/08	1	Preemptive
Stehli Beach	12	6/15/08	6/16/08	1	Preemptive
Stehli Beach	12	7/24/08	7/25/08	1	Preemptive
Stehli Beach	12	7/28/08	7/29/08	1	Preemptive

**TABLE PC7. 2008 NASSAU COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Stehli Beach	12	8/6/08	8/7/08	1	Preemptive
Stehli Beach	12	8/8/08	8/9/08	1	Preemptive
Stehli Beach	12	8/12/08	8/13/08	1	Preemptive
Stehli Beach	12	8/15/08	8/17/08	2	Preemptive
Stehli Beach	12	8/30/08	8/31/08	1	Preemptive
Tappen Beach	10	6/15/08	6/16/08	1	Preemptive
Tappen Beach	10	7/24/08	7/25/08	1	Preemptive
Tappen Beach	10	7/28/08	7/29/08	1	Preemptive
Tappen Beach	10	8/6/08	8/7/08	1	Preemptive
Tappen Beach	10	8/12/08	8/13/08	1	Preemptive
Tappen Beach	10	8/15/08	8/17/08	2	Preemptive
Tappen Beach	10	8/30/08	8/31/08	1	Preemptive
West Harbor Beach	12	6/15/08	6/16/08	1	Preemptive
West Harbor Beach	12	7/24/08	7/25/08	1	Preemptive
West Harbor Beach	12	7/28/08	7/29/08	1	Preemptive
West Harbor Beach	12	8/6/08	8/7/08	1	Preemptive

**TABLE PC7. 2008 NASSAU COUNTY BEACH CLOSURE  
SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
West Harbor Beach	12	8/8/08	8/9/08	1	Preemptive
West Harbor Beach	12	8/12/08	8/13/08	1	Preemptive
West Harbor Beach	12	8/15/08	8/17/08	2	Preemptive
West Harbor Beach	12	8/30/08	8/31/08	1	Preemptive

**TABLE PC8. 2009 SUFFOLK COUNTY BEACH CLOSURE SUMMARY**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Centerport Beach	12	6/18	6/19	1	Precautionary
Centerport Beach	12	7/21	7/22	1	Precautionary
Centerport Beach	12	7/24	7/25	1	Precautionary
Centerport Beach	12	8/28 pm	8/30 am	1	Precautionary
Fleets Cove Beach	12	6/18	6/19	1	Precautionary
Fleets Cove Beach	12	7/21	7/22	1	Precautionary
Fleets Cove Beach	12	7/24	7/25	1	Precautionary
Fleets Cove Beach	12	8/28 pm	8/30 am	1	Precautionary
Huntington Beach Community Association	12	6/18	6/19	1	Precautionary
Huntington Beach Community Association	12	6/27	6/30	3	Precautionary
Huntington Beach Community Association	12	7/21	7/22	1	Precautionary
Huntington Beach Community Association	12	7/24	7/25	1	Precautionary
Huntington Beach Community Association	12	8/28 pm	8/30 am	1	Precautionary
Knollwood Beach	12	6/18	6/19	1	Precautionary
Knollwood Beach	12	7/21	7/22	1	Precautionary
Knollwood Beach	12	7/24	7/25	1	Precautionary

**TABLE PC8. 2009 SUFFOLK COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Knollwood Beach	12	8/28 pm	8/30 am	1	Precautionary
Cold Spring Harbor Beach Club	12	6/18	6/19	1	Precautionary
Cold Spring Harbor Beach Club	12	7/21	7/22	1	Precautionary
Cold Spring Harbor Beach Club	12	7/24	7/25	1	Precautionary
Cold Spring Harbor Beach Club	12	8/28 pm	8/30 am	1	Precautionary
Eagle Dock Community Beach	12	6/18	6/19	1	Precautionary
Eagle Dock Community Beach	12	7/21	7/22	1	Precautionary
Eagle Dock Community Beach	12	7/24	7/25	1	Precautionary
Eagle Dock Community Beach	12	8/28 pm	8/30 am	1	Precautionary
Lloyd Harbor Village Park	12	6/18	6/19	1	Precautionary
Lloyd Harbor Village Park	12	7/21	7/22	1	Precautionary
Lloyd Harbor Village Park	12	7/24	7/25	1	Precautionary
Lloyd Harbor Village Park	12	8/28 pm	8/30 am	1	Precautionary
Tanner Park Beach	20	6/18	6/19	1	Precautionary
Tanner Park Beach	20	6/26	7/2	6	Enterococcus Criteria Exceedance
Tanner Park Beach	20	7/7	9/11	66	Enterococcus Criteria Exceedance

**TABLE PC8. 2009 SUFFOLK COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Venetian Shores	20	6/18	6/19	1	Precautionary
Venetian Shores	20	7/21	7/22	1	Precautionary
Venetian Shores	20	7/24	7/25	1	Precautionary
Venetian Shores	20	8/28 pm	8/30 am	1	Precautionary
Amityville Beach	20	6/18	6/19	1	Precautionary
Amityville Beach	20	7/20	7/22	2	Enterococcus Criteria Exceedance
Amityville Beach	20	7/24	7/25	1	Precautionary
Amityville Beach	20	8/8	8/11	3	Enterococcus Criteria Exceedance
Amityville Beach	20	8/28 pm	8/30 am	1	Precautionary
Bay Hills POA Beach	12	6/18	6/19	1	Precautionary
Bay Hills POA Beach	12	7/21	7/22	1	Precautionary
Bay Hills POA Beach	12	7/24	7/25	1	Precautionary
Bay Hills POA Beach	12	8/28 pm	8/30 am	1	Precautionary
Baycrest Beach	12	6/18	6/19	1	Precautionary
Baycrest Beach	12	7/21	7/22	1	Precautionary
Baycrest Beach	12	7/24	7/25	1	Precautionary

**TABLE PC8. 2009 SUFFOLK COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Baycrest Beach	12	8/28 pm	8/30 am	1	Precautionary
Crescent Beach	12	6/18	6/19	1	Precautionary
Crescent Beach	12	7/21	7/22	1	Precautionary
Crescent Beach	12	7/24	7/25	1	Precautionary
Crescent Beach	12	8/22	8/23	1	Enterococcus Criteria Exceedance
Crescent Beach	12	8/28 pm	8/30 am	1	Precautionary
Head of the Bay Club Beach	12	6/18	6/19	1	Precautionary
Head of the Bay Club Beach	12	7/21	7/22	1	Precautionary
Head of the Bay Club Beach	12	7/24	7/25	1	Precautionary
Head of the Bay Club Beach	12	8/28 pm	8/30 am	1	Precautionary
Nathan Hale Beach Club	12	6/18	6/19	1	Precautionary
Nathan Hale Beach Club	12	7/21	7/22	1	Precautionary
Nathan Hale Beach Club	12	7/24	7/25	1	Precautionary
Nathan Hale Beach Club	12	8/28 pm	8/30 am	1	Precautionary
Wincoma Beach	12	6/18	6/19	1	Precautionary
Wincoma Beach	12	7/21	7/22	1	Precautionary



**TABLE PC8. 2009 SUFFOLK COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Wincoma Beach	12	7/24	7/25	1	Precautionary
Wincoma Beach	12	8/28 pm	8/30 am	1	Precautionary
Gold Star Battalion	12	6/18	6/19	1	Precautionary
Gold Star Battalion	12	7/21	7/22	1	Precautionary
Gold Star Battalion	12	7/24	7/25	1	Precautionary
Gold Star Battalion	12	8/28 pm	8/30 am	1	Precautionary
Crab Meadow Beach	12	6/18	6/19	1	Precautionary
Crab Meadow Beach	12	7/21	7/22	1	Precautionary
Crab Meadow Beach	12	7/24	7/25	1	Precautionary
Crab Meadow Beach	12	8/28 pm	8/30 am	1	Precautionary
Asharoken Beach	12	6/18	6/19	1	Precautionary
Asharoken Beach	12	7/21	7/22	1	Precautionary
Asharoken Beach	12	7/24	7/25	1	Precautionary
Asharoken Beach	12	8/28 pm	8/30 am	1	Precautionary
Hobart Beach (Bay)	12	6/18	6/19	1	Precautionary
Hobart Beach (Bay)	12	7/21	7/22	1	Precautionary

**TABLE PC8. 2009 SUFFOLK COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Hobart Beach (Bay)	12	7/24	7/25	1	Precautionary
Hobart Beach (Bay)	12	8/28 pm	8/30 am	1	Precautionary
Hobart Beach (Inlet)	12	6/18	6/19	1	Precautionary
Hobart Beach (Inlet)	12	7/21	7/22	1	Precautionary
Hobart Beach (Inlet)	12	7/24	7/25	1	Precautionary
Hobart Beach (Inlet)	12	8/28 pm	8/30 am	1	Precautionary
Prices Bend Beach	12	6/18	6/19	1	Precautionary
Prices Bend Beach	12	7/21	7/22	1	Precautionary
Prices Bend Beach	12	7/24	7/25	1	Precautionary
Prices Bend Beach	12	8/28 pm	8/30 am	1	Precautionary
Steers Beach	12	6/18	6/19	1	Precautionary
Steers Beach	12	7/21	7/22	1	Precautionary
Steers Beach	12	7/24	7/25	1	Precautionary
Steers Beach	12	8/28 pm	8/30 am	1	Precautionary
Valley Grove Beach	12	6/15	6/25	10	Enterococcus Criteria Exceedance
Valley Grove Beach	12	7/3	7/7	4	Enterococcus Criteria Exceedance

**TABLE PC8. 2009 SUFFOLK COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Valley Grove Beach	12	7/21	7/22	1	Precautionary
Valley Grove Beach	12	7/24	7/25	1	Precautionary
Valley Grove Beach	12	8/28 pm	8/30 am	1	Precautionary
Centerport Yacht Club	12	5/25/09	9/7/09	104	Findings Of Positive Bactericides
Bayberry Cove Beach	12	6/18	6/19	1	Precautionary
Bayberry Cove Beach	12	7/21	7/22	1	Precautionary
Bayberry Cove Beach	12	7/24	7/25	1	Precautionary
Bayberry Cove Beach	12	8/28 pm	8/30 am	1	Precautionary
Bayview Beach	12	6/18	6/19	1	Precautionary
Bayview Beach	12	7/21	7/22	1	Precautionary
Bayview Beach	12	7/24	7/25	1	Precautionary
Bayview Beach	12	8/28 pm	8/30 am	1	Precautionary
Grantland Beach	12	6/18	6/19	1	Precautionary
Grantland Beach	12	7/21	7/22	1	Precautionary
Grantland Beach	12	7/24	7/25	1	Precautionary
Grantland Beach	12	8/28 pm	8/30 am	1	Precautionary

**TABLE PC8. 2009 SUFFOLK COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Indian Field Association Beach	12	6/18	6/19	1	Precautionary
Indian Field Association Beach	12	7/21	7/22	1	Precautionary
Indian Field Association Beach	12	7/24	7/25	1	Precautionary
Indian Field Association Beach	12	8/28 pm	8/30 am	1	Precautionary
Little Bay Beach	12	6/18	6/19	1	Precautionary
Little Bay Beach	12	7/21	7/22	1	Precautionary
Little Bay Beach	12	7/24	7/25	1	Precautionary
Little Bay Beach	12	8/28 pm	8/30 am	1	Precautionary
Long Beach	12	6/18	6/19	1	Precautionary
Long Beach	12	7/21	7/22	1	Precautionary
Long Beach	12	7/24	7/25	1	Precautionary
Long Beach	12	8/28 pm	8/30 am	1	Precautionary
Nissequogue Point Beach Club	12	6/18	6/19	1	Precautionary
Nissequogue Point Beach Club	12	7/21	7/22	1	Precautionary
Nissequogue Point Beach Club	12	7/24	7/25	1	Precautionary
Nissequogue Point Beach Club	12	8/28 pm	8/30 am	1	Precautionary

**TABLE PC8. 2009 SUFFOLK COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Schubert Beach	12	6/18	6/19	1	Precautionary
Schubert Beach	12	7/21	7/22	1	Precautionary
Schubert Beach	12	7/24	7/25	1	Precautionary
Schubert Beach	12	8/28 pm	8/30 am	1	Precautionary
Short Beach	12	6/18	6/19	1	Precautionary
Short Beach	12	7/21	7/22	1	Precautionary
Short Beach	12	7/24	7/25	1	Precautionary
Short Beach	12	8/28 pm	8/30 am	1	Precautionary
West Meadow Beach	12	8/6	8/7	1	Precautionary fecal release
Stony Brook Beach	12	6/18	6/19	1	Precautionary
Stony Brook Beach	12	7/21	7/22	1	Precautionary
Stony Brook Beach	12	7/24	7/25	1	Precautionary
Stony Brook Beach	12	8/28 pm	8/30 am	1	Precautionary
Stony Brook Yacht Club	12	6/18	6/19	1	Precautionary
Stony Brook Yacht Club	12	7/21	7/22	1	Precautionary
Stony Brook Yacht Club	12	7/24	7/25	1	Precautionary

**TABLE PC8. 2009 SUFFOLK COUNTY BEACH CLOSURE  
SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Stony Brook Yacht Club	12	8/28 pm	8/30 am	1	Precautionary
Soundview Beach Association	12	6/18	6/19	1	Precautionary
Soundview Beach Association	12	7/21	7/22	1	Precautionary
Soundview Beach Association	12	7/24	7/25	1	Precautionary
Soundview Beach Association	12	8/28 pm	8/30 am	1	Precautionary

**TABLE PC9. 2008 SUFFOLK COUNTY BEACH CLOSURE SUMMARY**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Centerport Beach	12	7/24/2008	7/25/2008	1	Precautionary
Centerport Beach	12	7/28/2008	7/28/2008	1	Precautionary
Centerport Beach	12	8/6/2008	8/7/2008	1	Precautionary
Centerport Beach	12	8/8/2008	8/9/2008	1	Precautionary
Fleets Cove Beach	12	7/24/2008	7/25/2008	1	Precautionary
Fleets Cove Beach	12	7/28/2008	7/28/2008	1	Precautionary
Fleets Cove Beach	12	8/6/2008	8/7/2008	1	Precautionary
Fleets Cove Beach	12	8/8/2008	8/9/2008	1	Precautionary
Huntington Beach Community Association	12	7/24/2008	7/25/2008	1	Precautionary
Huntington Beach Community Association	12	7/28/2008	7/28/2008	1	Precautionary
Huntington Beach Community Association	12	8/6/2008	8/7/2008	1	Precautionary
Huntington Beach Community Association	12	8/8/2008	8/9/2008	1	Precautionary
Knollwood Beach	12	7/24/2008	7/25/2008	1	Precautionary
Knollwood Beach	12	7/28/2008	7/28/2008	1	Precautionary
Knollwood Beach	12	8/6/2008	8/7/2008	1	Precautionary
Knollwood Beach	12	8/8/2008	8/9/2008	1	Precautionary

**TABLE PC9. 2008 SUFFOLK COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Cold Spring Harbor Beach Club	12	7/24/2008	7/25/2008	1	Precautionary
Cold Spring Harbor Beach Club	12	7/28/2008	7/28/2008	1	Precautionary
Cold Spring Harbor Beach Club	12	8/6/2008	8/7/2008	1	Precautionary
Cold Spring Harbor Beach Club	12	8/8/2008	8/9/2008	1	Precautionary
Cold Spring Harbor Beach Club	12	8/12/2008	8/14/2008	2	Enterococcus Criteria Exceedance
Eagle Dock Community Beach	12	7/24/2008	7/25/2008	1	Precautionary
Eagle Dock Community Beach	12	7/28/2008	7/28/2008	1	Precautionary
Eagle Dock Community Beach	12	8/6/2008	8/7/2008	1	Precautionary
Eagle Dock Community Beach	12	8/8/2008	8/9/2008	1	Precautionary
Eagle Dock Community Beach	12	8/12/2008	8/22/2008	10	Enterococcus Criteria Exceedance
Lloyd Harbor Village Park	12	7/24/2008	7/25/2008	1	Precautionary
Lloyd Harbor Village Park	12	7/28/2008	7/28/2008	1	Precautionary
Lloyd Harbor Village Park	12	8/6/2008	8/7/2008	1	Precautionary
Lloyd Harbor Village Park	12	8/8/2008	8/9/2008	1	Precautionary
Tanner Park Beach	20	7/3/2008	9/1/2008	60	Enterococcus Criteria Exceedance
Venetian Shores	20	7/6/2008	7/8/2008	2	Enterococcus Criteria Exceedance



**TABLE PC9. 2008 SUFFOLK COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Venetian Shores	20	7/24/2008	7/25/2008	1	Precautionary
Venetian Shores	20	7/28/2008	7/28/2008	1	Precautionary
Venetian Shores	20	8/6/2008	8/7/2008	1	Precautionary
Amityville Beach	20	7/24/2008	7/25/2008	1	Precautionary
Amityville Beach	20	7/28/2008	7/28/2008	1	Precautionary
Amityville Beach	20	8/6/2008	8/7/2008	1	Precautionary
Bay Hills POA Beach	12	7/24/2008	7/25/2008	1	Precautionary
Bay Hills POA Beach	12	7/28/2008	7/28/2008	1	Precautionary
Bay Hills POA Beach	12	8/6/2008	8/7/2008	1	Precautionary
Bay Hills POA Beach	12	8/8/2008	8/9/2008	1	Precautionary
Baycrest Beach	12	7/24/2008	7/25/2008	1	Precautionary
Baycrest Beach	12	7/28/2008	7/28/2008	1	Precautionary
Baycrest Beach	12	8/6/2008	8/7/2008	1	Precautionary
Baycrest Beach	12	8/8/2008	8/9/2008	1	Precautionary
Crescent Beach	12	7/24/2008	7/25/2008	1	Precautionary
Crescent Beach	12	7/28/2008	7/28/2008	1	Precautionary

**TABLE PC9. 2008 SUFFOLK COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Crescent Beach	12	8/6/2008	8/7/2008	1	Precautionary
Crescent Beach	12	8/8/2008	8/9/2008	1	Precautionary
Head of the Bay Club Beach	12	7/24/2008	7/25/2008	1	Precautionary
Head of the Bay Club Beach	12	7/28/2008	7/28/2008	1	Precautionary
Head of the Bay Club Beach	12	8/6/2008	8/7/2008	1	Precautionary
Head of the Bay Club Beach	12	8/8/2008	8/9/2008	1	Precautionary
Nathan Hale Beach Club	12	7/24/2008	7/25/2008	1	Precautionary
Nathan Hale Beach Club	12	7/28/2008	7/28/2008	1	Precautionary
Nathan Hale Beach Club	12	8/6/2008	8/7/2008	1	Precautionary
Nathan Hale Beach Club	12	8/8/2008	8/9/2008	1	Precautionary
Wincoma Beach	12	7/24/2008	7/25/2008	1	Precautionary
Wincoma Beach	12	7/28/2008	7/28/2008	1	Precautionary
Wincoma Beach	12	8/6/2008	8/7/2008	1	Precautionary
Wincoma Beach	12	8/8/2008	8/9/2008	1	Precautionary
Gold Star Battalion	12	7/24/2008	7/25/2008	1	Precautionary
Gold Star Battalion	12	7/28/2008	7/28/2008	1	Precautionary

**TABLE PC9. 2008 SUFFOLK COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Gold Star Battalion	12	8/6/2008	8/7/2008	1	Precautionary
Gold Star Battalion	12	8/8/2008	8/9/2008	1	Precautionary
Crab Meadow Beach	12	7/24/2008	7/25/2008	1	Precautionary
Crab Meadow Beach	12	7/28/2008	7/28/2008	1	Precautionary
Crab Meadow Beach	12	8/6/2008	8/7/2008	1	Precautionary
Crab Meadow Beach	12	8/8/2008	8/9/2008	1	Precautionary
Asharoken Beach	12	7/24/2008	7/25/2008	1	Precautionary
Asharoken Beach	12	7/28/2008	7/28/2008	1	Precautionary
Asharoken Beach	12	8/6/2008	8/7/2008	1	Precautionary
Asharoken Beach	12	8/8/2008	8/9/2008	1	Precautionary
Hobart Beach (Bay)	12	7/24/2008	7/25/2008	1	Precautionary
Hobart Beach (Bay)	12	7/28/2008	7/28/2008	1	Precautionary
Hobart Beach (Bay)	12	8/6/2008	8/7/2008	1	Precautionary
Hobart Beach (Bay)	12	8/8/2008	8/9/2008	1	Precautionary
Hobart Beach (Inlet)	12	7/24/2008	7/25/2008	1	Precautionary
Hobart Beach (Inlet)	12	7/28/2008	7/28/2008	1	Precautionary

**TABLE PC9. 2008 SUFFOLK COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Hobart Beach (Inlet)	12	8/6/2008	8/7/2008	1	Precautionary
Hobart Beach (Inlet)	12	8/8/2008	8/9/2008	1	Precautionary
Prices Bend Beach	12	7/24/2008	7/25/2008	1	Precautionary
Prices Bend Beach	12	7/28/2008	7/28/2008	1	Precautionary
Prices Bend Beach	12	8/6/2008	8/7/2008	1	Precautionary
Prices Bend Beach	12	8/8/2008	8/9/2008	1	Precautionary
Steers Beach	12	7/24/2008	7/25/2008	1	Precautionary
Steers Beach	12	7/28/2008	7/28/2008	1	Precautionary
Steers Beach	12	8/6/2008	8/7/2008	1	Precautionary
Steers Beach	12	8/8/2008	8/9/2008	1	Precautionary
Valley Grove Beach	12	7/24/2008	7/25/2008	1	Precautionary
Valley Grove Beach	12	7/25/2008	7/26/2008	1	Enterococcus Criteria Exceedance
Valley Grove Beach	12	7/28/2008	7/28/2008	1	Precautionary
Valley Grove Beach	12	8/6/2008	8/7/2008	1	Precautionary
Valley Grove Beach	12	8/8/2008	8/9/2008	1	Precautionary
Centerport Yacht Club	12	7/24/2008	7/25/2008	1	Precautionary

**TABLE PC9. 2008 SUFFOLK COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Centerport Yacht Club	12	7/25/2008	7/26/2008	1	Enterococcus Criteria Exceedance
Centerport Yacht Club	12	7/28/2008	7/28/2008	1	Precautionary
Centerport Yacht Club	12	7/31/2008	8/1/2008	1	Enterococcus Criteria Exceedance
Centerport Yacht Club	12	8/6/2008	8/7/2008	1	Precautionary
Centerport Yacht Club	12	8/8/2008	8/9/2008	1	Precautionary
Centerport Yacht Club	12	8/17/2008	8/18/2008	1	Enterococcus Criteria Exceedance
Minnesseroke Beach	12	6/30/2008	9/1/2008	63	Enterococcus Criteria Exceedance
Bayberry Cove Beach	12	7/7/2008	7/8/2008	1	Enterococcus Criteria Exceedance
Bayberry Cove Beach	12	7/24/2008	7/25/2008	1	Precautionary
Bayberry Cove Beach	12	7/28/2008	7/28/2008	1	Precautionary
Bayberry Cove Beach	12	8/6/2008	8/7/2008	1	Precautionary
Bayberry Cove Beach	12	8/8/2008	8/9/2008	1	Precautionary
Bayberry Cove Beach	12	8/15/2008	8/25/2008	10	Enterococcus Criteria Exceedance
Bayview Beach	12	7/24/2008	7/25/2008	1	Precautionary
Bayview Beach	12	7/28/2008	7/28/2008	1	Precautionary
Bayview Beach	12	8/6/2008	8/7/2008	1	Precautionary

**TABLE PC9. 2008 SUFFOLK COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Bayview Beach	12	8/8/2008	8/9/2008	1	Precautionary
Grantland Beach	12	7/24/2008	7/25/2008	1	Precautionary
Grantland Beach	12	7/28/2008	7/28/2008	1	Precautionary
Grantland Beach	12	8/6/2008	8/7/2008	1	Precautionary
Grantland Beach	12	8/8/2008	8/9/2008	1	Precautionary
Indian Field Association Beach	12	7/24/2008	7/25/2008	1	Precautionary
Indian Field Association Beach	12	7/28/2008	7/28/2008	1	Precautionary
Indian Field Association Beach	12	8/6/2008	8/7/2008	1	Precautionary
Indian Field Association Beach	12	8/8/2008	8/9/2008	1	Precautionary
Little Bay Beach	12	7/24/2008	7/25/2008	1	Precautionary
Little Bay Beach	12	7/28/2008	7/28/2008	1	Precautionary
Little Bay Beach	12	8/6/2008	8/7/2008	1	Precautionary
Little Bay Beach	12	8/8/2008	8/9/2008	1	Precautionary
Little Bay Beach	12	8/15/2008	8/26/2008	11	Enterococcus Criteria Exceedance
Long Beach	12	7/24/2008	7/25/2008	1	Precautionary
Long Beach	12	7/28/2008	7/28/2008	1	Precautionary

**TABLE PC9. 2008 SUFFOLK COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Long Beach	12	8/6/2008	8/7/2008	1	Precautionary
Long Beach	12	8/8/2008	8/9/2008	1	Precautionary
Nissequogue Point Beach Club	12	7/24/2008	7/25/2008	1	Precautionary
Nissequogue Point Beach Club	12	7/28/2008	7/28/2008	1	Precautionary
Nissequogue Point Beach Club	12	8/6/2008	8/7/2008	1	Precautionary
Nissequogue Point Beach Club	12	8/8/2008	8/9/2008	1	Precautionary
Schubert Beach	12	7/24/2008	7/25/2008	1	Precautionary
Schubert Beach	12	7/28/2008	7/28/2008	1	Precautionary
Schubert Beach	12	8/6/2008	8/7/2008	1	Precautionary
Schubert Beach	12	8/8/2008	8/9/2008	1	Precautionary
Short Beach	12	7/24/2008	7/25/2008	1	Precautionary
Short Beach	12	7/28/2008	7/28/2008	1	Precautionary
Short Beach	12	8/6/2008	8/7/2008	1	Precautionary
Short Beach	12	8/8/2008	8/9/2008	1	Precautionary
Stony Brook Beach	12	7/24/2008	7/25/2008	1	Precautionary
Stony Brook Beach	12	7/28/2008	7/28/2008	1	Precautionary

**TABLE PC9. 2008 SUFFOLK COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Stony Brook Beach	12	8/6/2008	8/7/2008	1	Precautionary
Stony Brook Beach	12	8/8/2008	8/9/2008	1	Precautionary
Stony Brook Yacht Club	12	7/24/2008	7/25/2008	1	Precautionary
Stony Brook Yacht Club	12	7/28/2008	7/28/2008	1	Precautionary
Stony Brook Yacht Club	12	8/6/2008	8/7/2008	1	Precautionary
Stony Brook Yacht Club	12	8/8/2008	8/9/2008	1	Precautionary
Soundview Beach Association	12	7/24/2008	7/25/2008	1	Precautionary
Soundview Beach Association	12	7/28/2008	7/28/2008	1	Precautionary
Soundview Beach Association	12	8/6/2008	8/7/2008	1	Precautionary
Soundview Beach Association	12	8/8/2008	8/9/2008	1	Precautionary



**TABLE PC10. 2009 WESTCHESTER COUNTY BEACH CLOSURE SUMMARY**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Beachpoint	10	5/29/09	5/29/09	1	Precautionary Rain
Beachpoint	10	6/3/09	6/5/09	3	Sewage
Beachpoint	10	6/6/09	6/7/09	2	Precautionary Rain
Beachpoint	10	6/9/09	6/10/09	2	Precautionary Rain
Beachpoint	10	6/12/09	6/13/09	2	Precautionary Rain
Beachpoint	10	6/16/09	6/16/09	1	Precautionary Rain
Beachpoint	10	6/19/09	6/21/09	3	Precautionary Rain
Beachpoint	10	6/22/09	6/22/09	1	Precautionary Rain
Beachpoint	10	7/22/09	7/24/09	3	Precautionary Rain
Beachpoint	10	7/30/09	7/30/09	1	Precautionary Rain
Beachpoint	10	8/1/09	8/2/09	2	Precautionary Rain
Beachpoint	10	8/3/09	8/3/09	1	Precautionary Rain
Beachpoint	10	8/22/09	8/23/09	2	Precautionary Rain
Beachpoint	10	8/24/09	8/25/09	2	Precautionary Rain
Coveleigh Club	10	5/29/09	5/29/09	1	Precautionary Rain
Coveleigh Club	10	6/3/09	6/5/09	3	Sewage

**TABLE PC10. 2009 WESTCHESTER COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Coveleigh Club	10	6/6/09	6/7/09	2	Precautionary Rain
Coveleigh Club	10	6/9/09	6/10/09	2	Precautionary Rain
Coveleigh Club	10	6/12/09	6/13/09	2	Precautionary Rain
Coveleigh Club	10	6/16/09	6/16/09	1	Precautionary Rain
Coveleigh Club	10	6/19/09	6/21/09	3	Precautionary Rain
Coveleigh Club	10	6/22/09	6/22/09	1	Precautionary Rain
Coveleigh Club	10	7/22/09	7/24/09	3	Precautionary Rain
Coveleigh Club	10	7/30/09	7/30/09	1	Precautionary Rain
Coveleigh Club	10	8/1/09	8/2/09	2	Precautionary Rain
Coveleigh Club	10	8/3/09	8/3/09	1	Precautionary Rain
Coveleigh Club	10	8/22/09	8/23/09	2	Precautionary Rain
Coveleigh Club	10	8/24/09	8/25/09	2	Precautionary Rain
American Yacht Club	10	6/3/09	6/5/09	3	Sewage
Davenport Club	10	5/29/09	5/29/09	1	Precautionary Rain
Davenport Club	10	6/3/09	6/5/09	3	Sewage
Davenport Club	10	6/4/09	6/4/09	1	Precautionary Rain

**TABLE PC10. 2009 WESTCHESTER COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Davenport Club	10	6/6/09	6/7/09	2	Precautionary Rain
Davenport Club	10	6/9/09	6/10/09	2	Precautionary Rain
Davenport Club	10	6/12/09	6/13/09	2	Precautionary Rain
Davenport Club	10	6/16/09	6/16/09	1	Precautionary Rain
Davenport Club	10	6/19/09	6/21/09	3	Precautionary Rain
Davenport Club	10	6/22/09	6/22/09	1	Precautionary Rain
Davenport Club	10	7/22/09	7/24/09	3	Precautionary Rain
Davenport Club	10	7/30/09	7/30/09	1	Precautionary Rain
Davenport Club	10	8/1/09	8/2/09	2	Precautionary Rain
Davenport Club	10	8/3/09	8/3/09	1	Precautionary Rain
Davenport Club	10	8/22/09	8/23/09	2	Precautionary Rain
Davenport Club	10	8/24/09	8/25/09	2	Precautionary Rain
Echo Bay Club	10	5/29/09	5/29/09	1	Precautionary Rain
Echo Bay Club	10	6/3/09	6/5/09	3	Sewage
Echo Bay Club	10	6/4/09	6/4/09	1	Precautionary Rain
Echo Bay Club	10	6/6/09	6/7/09	2	Precautionary Rain

**TABLE PC10. 2009 WESTCHESTER COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Echo Bay Club	10	6/9/09	6/10/09	2	Precautionary Rain
Echo Bay Club	10	6/12/09	6/13/09	2	Precautionary Rain
Echo Bay Club	10	6/16/09	6/16/09	1	Precautionary Rain
Echo Bay Club	10	6/19/09	6/21/09	3	Precautionary Rain
Echo Bay Club	10	6/22/09	6/22/09	1	Precautionary Rain
Echo Bay Club	10	7/22/09	7/24/09	3	Precautionary Rain
Echo Bay Club	10	7/30/09	7/30/09	1	Precautionary Rain
Echo Bay Club	10	8/1/09	8/2/09	2	Precautionary Rain
Echo Bay Club	10	8/3/09	8/3/09	1	Precautionary Rain
Echo Bay Club	10	8/22/09	8/23/09	2	Precautionary Rain
Echo Bay Club	10	8/24/09	8/25/09	2	Precautionary Rain
Greentree Club	10	5/29/09	5/29/09	1	Precautionary Rain
Greentree Club	10	6/3/09	6/5/09	3	Sewage
Greentree Club	10	6/4/09	6/4/09	1	Precautionary Rain
Greentree Club	10	6/6/09	6/7/09	2	Precautionary Rain
Greentree Club	10	6/9/09	6/10/09	2	Precautionary Rain

**TABLE PC10. 2009 WESTCHESTER COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Greentree Club	10	6/12/09	6/13/09	2	Precautionary Rain
Greentree Club	10	6/16/09	6/16/09	1	Precautionary Rain
Greentree Club	10	6/19/09	6/21/09	3	Precautionary Rain
Greentree Club	10	6/22/09	6/22/09	1	Precautionary Rain
Greentree Club	10	7/22/09	7/24/09	3	Precautionary Rain
Greentree Club	10	7/30/09	7/30/09	1	Precautionary Rain
Greentree Club	10	8/1/09	8/2/09	2	Precautionary Rain
Greentree Club	10	8/3/09	8/3/09	1	Precautionary Rain
Greentree Club	10	8/22/09	8/23/09	2	Precautionary Rain
Greentree Club	10	8/24/09	8/25/09	2	Precautionary Rain
Harbor Island	10	5/29/09	5/29/09	1	Precautionary Rain
Harbor Island	10	6/3/09	6/5/09	3	Sewage
Harbor Island	10	6/6/09	6/7/09	2	Precautionary Rain
Harbor Island	10	6/9/09	6/10/09	2	Precautionary Rain
Harbor Island	10	6/12/09	6/13/09	2	Precautionary Rain
Harbor Island	10	6/16/09	6/16/09	1	Precautionary Rain

**TABLE PC10. 2009 WESTCHESTER COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Harbor Island	10	6/19/09	6/21/09	3	Precautionary Rain
Harbor Island	10	6/22/09	6/22/09	1	Precautionary Rain
Harbor Island	10	7/22/09	7/24/09	3	Precautionary Rain
Harbor Island	10	7/30/09	7/30/09	1	Precautionary Rain
Harbor Island	10	8/1/09	8/2/09	2	Precautionary Rain
Harbor Island	10	8/3/09	8/3/09	1	Precautionary Rain
Harbor Island	10	8/22/09	8/23/09	2	Precautionary Rain
Harbor Island	10	8/24/09	8/25/09	2	Precautionary Rain
Hudson Park	10	8/24/09	8/25/09	2	Precautionary Rain
Hudson Park	10	5/29/09	5/29/09	1	Precautionary Rain
Hudson Park	10	6/3/09	6/5/09	3	Sewage
Hudson Park	10	6/4/09	6/4/09	1	Precautionary Rain
Hudson Park	10	6/9/09	6/10/09	2	Precautionary Rain
Hudson Park	10	6/12/09	6/13/09	2	Precautionary Rain
Hudson Park	10	6/16/09	6/16/09	1	Precautionary Rain
Hudson Park	10	6/19/09	6/21/09	3	Precautionary Rain

**TABLE PC10. 2009 WESTCHESTER COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Hudson Park	10	6/22/09	6/22/09	1	Precautionary Rain
Hudson Park	10	7/22/09	7/24/09	3	Precautionary Rain
Hudson Park	10	7/30/09	7/30/09	1	Precautionary Rain
Hudson Park	10	8/1/09	8/2/09	2	Precautionary Rain
Hudson Park	10	8/3/09	8/3/09	1	Precautionary Rain
Hudson Park	10	8/22/09	8/23/09	2	Precautionary Rain
Hudson Park	10	8/24/09	8/25/09	2	Precautionary Rain
Mamaroneck Beach and Yacht	10	5/29/09	5/29/09	1	Precautionary Rain
Mamaroneck Beach and Yacht	10	6/3/09	6/5/09	3	Sewage
Mamaroneck Beach and Yacht	10	6/6/09	6/7/09	2	Precautionary Rain
Mamaroneck Beach and Yacht	10	6/9/09	6/10/09	2	Precautionary Rain
Mamaroneck Beach and Yacht	10	6/12/09	6/13/09	2	Precautionary Rain
Mamaroneck Beach and Yacht	10	6/16/09	6/16/09	1	Precautionary Rain
Mamaroneck Beach and Yacht	10	6/19/09	6/21/09	3	Precautionary Rain
Mamaroneck Beach and Yacht	10	6/22/09	6/22/09	1	Precautionary Rain
Mamaroneck Beach and Yacht	10	7/22/09	7/24/09	3	Precautionary Rain

**TABLE PC10. 2009 WESTCHESTER COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Mamaroneck Beach and Yacht	10	7/30/09	7/30/09	1	Precautionary Rain
Mamaroneck Beach and Yacht	10	8/1/09	8/2/09	2	Precautionary Rain
Mamaroneck Beach and Yacht	10	8/3/09	8/3/09	1	Precautionary Rain
Mamaroneck Beach and Yacht	10	8/22/09	8/23/09	2	Precautionary Rain
Mamaroneck Beach and Yacht	10	8/24/09	8/25/09	2	Precautionary Rain
Shore Acres	10	5/29/09	5/29/09	1	Precautionary Rain
Shore Acres	10	6/3/09	6/5/09	3	Sewage
Shore Acres	10	6/6/09	6/7/09	2	Precautionary Rain
Shore Acres	10	6/9/09	6/10/09	2	Precautionary Rain
Shore Acres	10	6/12/09	6/13/09	2	Precautionary Rain
Shore Acres	10	6/16/09	6/16/09	1	Precautionary Rain
Shore Acres	10	6/19/09	6/21/09	3	Precautionary Rain
Shore Acres	10	6/22/09	6/22/09	1	Precautionary Rain
Shore Acres	10	7/22/09	7/24/09	3	Precautionary Rain
Shore Acres	10	7/30/09	7/30/09	1	Precautionary Rain
Shore Acres	10	8/1/09	8/2/09	2	Precautionary Rain
Shore Acres	10	8/3/09	8/3/09	1	Precautionary Rain



**TABLE PC10. 2009 WESTCHESTER COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Shore Acres	10	8/22/09	8/23/09	2	Precautionary Rain
Shore Acres	10	8/24/09	8/25/09	2	Precautionary Rain
Shore Club	10	6/3/09	6/5/09	3	Sewage
Shenorock Shore Club	10	6/3/09	6/5/09	3	Sewage
Orienta Club	10	5/29/09	5/29/09	1	Precautionary Rain
Orienta Club	10	6/3/09	6/5/09	3	Sewage
Orienta Club	10	6/6/09	6/7/09	2	Precautionary Rain
Orienta Club	10	6/9/09	6/10/09	2	Precautionary Rain
Orienta Club	10	6/12/09	6/13/09	2	Precautionary Rain
Orienta Club	10	6/16/09	6/16/09	1	Precautionary Rain
Orienta Club	10	6/19/09	6/21/09	3	Precautionary Rain
Orienta Club	10	6/22/09	6/22/09	1	Precautionary Rain
Orienta Club	10	7/22/09	7/24/09	3	Precautionary Rain
Orienta Club	10	7/30/09	7/30/09	1	Precautionary Rain
Orienta Club	10	8/1/09	8/2/09	2	Precautionary Rain
Orienta Club	10	8/3/09	8/3/09	1	Precautionary Rain
Orienta Club	10	8/22/09	8/23/09	2	Precautionary Rain
Orienta Club	10	8/24/09	8/25/09	2	Precautionary Rain

**TABLE PC11. 2008 WESTCHESTER COUNTY BEACH CLOSURE SUMMARY**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Beach Point	10	6/4/08	6/4/08	1	Precautionary Rain
Beach Point	10	6/15/08	6/16/08	2	Precautionary Rain
Beach Point	10	7/24/08	7/25/08	2	Precautionary Rain
Beach Point	10	8/3/08	8/3/08	1	Precautionary Rain
Beach Point	10	8/6/08	8/6/08	1	Precautionary Rain
Beach Point	10	8/15/08	8/15/08	1	Precautionary Rain
Coveleigh Club	10	6/4/08	6/4/08	1	Precautionary Rain
Coveleigh Club	10	6/15/08	6/16/08	2	Precautionary Rain
Coveleigh Club	10	7/24/08	7/25/08	2	Precautionary Rain
Coveleigh Club	10	8/3/08	8/3/08	1	Precautionary Rain
Coveleigh Club	10	8/6/08	8/6/08	1	Precautionary Rain
Coveleigh Club	10	8/15/08	8/15/08	1	Precautionary Rain
Davenport Club	10	6/4/08	6/4/08	1	Precautionary Rain
Davenport Club	10	6/15/08	6/16/08	2	Precautionary Rain
Davenport Club	10	7/24/08	7/25/08	2	Precautionary Rain
Davenport Club	10	8/3/08	8/3/08	1	Precautionary Rain
Davenport Club	10	8/6/08	8/6/08	1	Precautionary Rain

**TABLE PC11. 2008 WESTCHESTER COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Davenport Club	10	8/15/08	8/15/08	1	Precautionary Rain
Echo Bay Club	10	6/4/08	6/4/08	1	Precautionary Rain
Echo Bay Club	10	6/15/08	6/16/08	2	Precautionary Rain
Echo Bay Club	10	7/24/08	7/25/08	2	Precautionary Rain
Echo Bay Club	10	8/3/08	8/3/08	1	Precautionary Rain
Echo Bay Club	10	8/6/08	8/6/08	1	Precautionary Rain
Echo Bay Club	10	8/15/08	8/15/08	1	Precautionary Rain
Greentree Club	10	6/4/08	6/4/08	1	Precautionary Rain
Greentree Club	10	6/15/08	6/16/08	2	Precautionary Rain
Greentree Club	10	7/24/08	7/25/08	2	Precautionary Rain
Greentree Club	10	8/3/08	8/3/08	1	Precautionary Rain
Greentree Club	10	8/6/08	8/6/08	1	Precautionary Rain
Greentree Club	10	8/15/08	8/15/08	1	Precautionary Rain
Harbor Island	10	6/4/08	6/4/08	1	Precautionary Rain
Harbor Island	10	6/15/08	6/16/08	2	Precautionary Rain
Harbor Island	10	7/24/08	7/25/08	2	Precautionary Rain
Harbor Island	10	8/3/08	8/3/08	1	Precautionary Rain

**TABLE PC11. 2008 WESTCHESTER COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Harbor Island	10	8/6/08	8/6/08	1	Precautionary Rain
Harbor Island	10	8/15/08	8/15/08	1	Precautionary Rain
Hudson Park	10	6/4/08	6/4/08	1	Precautionary Rain
Hudson Park	10	6/15/08	6/16/08	2	Precautionary Rain
Hudson Park	10	7/24/08	7/25/08	2	Precautionary Rain
Hudson Park (East Beach)	10	7/24/08	7/24/08	1	High Bacteria
Hudson Park	10	8/3/08	8/3/08	1	Precautionary Rain
Hudson Park	10	8/6/08	8/6/08	1	Precautionary Rain
Hudson Park	10	8/15/08	8/15/08	1	Precautionary Rain
Mamaroneck Beach and Yacht	10	6/4/08	6/4/08	1	Precautionary Rain
Mamaroneck Beach and Yacht	10	6/15/08	6/16/08	2	Precautionary Rain
Mamaroneck Beach and Yacht	10	7/24/08	7/25/08	2	Precautionary Rain
Mamaroneck Beach and Yacht	10	8/3/08	8/3/08	1	Precautionary Rain
Mamaroneck Beach and Yacht	10	8/6/08	8/6/08	1	Precautionary Rain
Mamaroneck Beach and Yacht	10	8/15/08	8/15/08	1	Precautionary Rain
Orienta Club	10	6/4/08	6/4/08	1	Precautionary Rain
Orienta Club	10	6/15/08	6/16/08	2	Precautionary Rain

**TABLE PC11. 2008 WESTCHESTER COUNTY BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Orienta Club	10	7/24/08	7/25/08	2	Precautionary Rain
Orienta Club	10	8/3/08	8/3/08	1	Precautionary Rain
Orienta Club	10	8/6/08	8/6/08	1	Precautionary Rain
Orienta Club	10	8/15/08	8/15/08	1	Precautionary Rain
Shore Acres	10	6/4/08	6/4/08	1	Precautionary Rain
Shore Acres	10	6/15/08	6/16/08	2	Precautionary Rain
Shore Acres	10	7/24/08	7/25/08	2	Precautionary Rain
Shore Acres	10	8/3/08	8/3/08	1	Precautionary Rain
Shore Acres	10	8/6/08	8/6/08	1	Precautionary Rain
Shore Acres	10	8/15/08	8/15/08	1	Precautionary Rain
Shrub Oak Lake	10	7/11/08	7/11/08	1	High Bacteria

**TABLE PC12. 2009 ROCKLAND COUNTY BEACH CLOSURE SUMMARY**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
(*)					

- Rockland County does not have any open public beaches on the Hudson River, but according to the Interstate Environmental Commission, there once were beaches in Rockland County on the Hudson River in the 1940s or 1950s, but those beaches have not been open since then. The Commission conducted surveys in 1988 and 1990 to determine the feasibility of opening beaches at these historic sites.

**TABLE PC13. 2008 ROCKLAND COUNTY BEACH CLOSURE SUMMARY**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
(*)					

- Rockland County does not have any open public beaches on Hudson River, but according to the Interstate Environmental Commission, there once were beaches in Rockland County on the Hudson River in the 1940s or 1950s, but those beaches have not been open since then. The Commission conducted surveys in 1988 and 1990 to determine the feasibility of opening beaches at these historic sites.

**TABLE PC14. 2009 NEW JERSEY BEACH CLOSURE SUMMARY**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Leonardo, Thompson Ave.	19	07/27/2009	07/28/2009	2	Heavy Seaweed on the Beach

**TABLE PC15. 2008 NEW JERSEY BEACH CLOSURE SUMMARY**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Raritan Bay Beach	18	6/23/2008	6/23/2008	1	Precautionary (fuel spill)

**TABLE PC16. 2009 CONNECTICUT BEACH CLOSURE SUMMARY**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Bell Island Beach	11	6/18/2009	6/20/2009	2	Preemptive - Rainfall
Byram Beach	11	6/18/2009	6/20/2009	2	Preemptive - Rainfall
Byram Beach	11	6/4/2009	6/5/2009	1	Preemptive - Rainfall
Byram Beach	11	6/6/2009	6/7/2009	1	Preemptive - Rainfall
Byram Beach	11	6/9/2009	6/11/2009	2	Preemptive - Rainfall
Byram Beach	11	6/15/2009	6/16/2009	1	Preemptive - Rainfall
Byram Beach	11	6/18/2009	6/22/2009	4	Preemptive - Rainfall
Byram Beach	11	6/27/2009	6/28/2009	1	Preemptive - Rainfall
Byram Beach	11	7/8/2009	7/9/2009	1	Preemptive - Rainfall
Byram Beach	11	7/21/2009	7/23/2009	2	Preemptive - Rainfall
Byram Beach	11	7/24/2009	7/25/2009	1	Preemptive - Rainfall
Byram Beach	11	7/31/2009	8/1/2009	1	Preemptive - Rainfall
Byram Beach	11	8/3/2009	8/4/2009	1	Preemptive - Rainfall
Byram Beach	11	8/11/2009	8/12/2009	1	Preemptive - Rainfall
Byram Beach	11	8/22/2009	8/23/2009	1	Preemptive - Rainfall
Byram Beach	11	8/24/2009	8/25/2009	1	Preemptive - Rainfall



**TABLE PC16. 2009 CONNECTICUT BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Calf Pasture Beach	11	5/29/2009	6/3/2009	5	Monitoring revealed elevated bacteria levels
Calf Pasture Beach	11	6/18/2009	6/20/2009	2	Preemptive - Rainfall
Cummings Beach	11	6/9/2009	6/10/2009	1	Preemptive - Rainfall
Cummings Beach	11	6/19/2009	6/20/2009	1	Preemptive - Rainfall
Cummings Beach	11	6/27/2009	6/28/2009	1	Preemptive - Rainfall
Cummings Beach	11	8/22/2009	8/23/2009	1	Preemptive - Rainfall
Cummings Beach	11	8/24/2009	8/25/2009	1	Preemptive - Rainfall
East (Cove Island ) Beach	11	6/9/2009	6/10/2009	1	Preemptive - Rainfall
East (Cove Island ) Beach	11	6/19/2009	6/20/2009	1	Preemptive - Rainfall
East (Cove Island ) Beach	11	6/27/2009	6/28/2009	1	Preemptive - Rainfall
East (Cove Island ) Beach	11	8/22/2009	8/23/2009	1	Preemptive - Rainfall
East (Cove Island ) Beach	11	8/24/2009	8/25/2009	1	Preemptive - Rainfall
Great Captain's Island Beach	11	6/19/2009	6/20/2009	1	Preemptive - Rainfall
Greenwich Point Beach	11	6/19/2009	6/20/2009	1	Preemptive - Rainfall
Greenwich Point Beach	11	8/11/2009	8/12/2009	1	Preemptive - Rainfall
Greenwich Point Beach	11	8/22/2009	8/23/2009	1	Preemptive - Rainfall

**TABLE PC16. 2009 CONNECTICUT BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Greenwich Point Beach	11	8/24/2009	8/25/2009	1	Preemptive - Rainfall
Hickory Bluff Beach	11	6/18/2009	6/20/2009	2	Preemptive - Rainfall
Island Beach	11	6/19/2009	6/20/2009	1	Preemptive - Rainfall
Jennings Beach	11	6/19/2009	6/20/2009	1	Preemptive - Rainfall
Long Beach (Marnick's)	11	6/10/2009	6/11/2009	1	Preemptive - Rainfall
Long Beach (Marnick's)	11	6/19/2009	6/20/2009	1	Preemptive - Rainfall
Long Beach (Proper)	11	6/10/2009	6/11/2009	1	Preemptive - Rainfall
Long Beach (Proper)	11	6/19/2009	6/20/2009	1	Preemptive - Rainfall
Marvin Beach	11	6/18/2009	6/20/2009	2	Preemptive - Rainfall
Pear Tree Point Beach	11	6/19/2009	6/20/2009	1	Preemptive - Rainfall
Pear Tree Point Beach	11	7/31/2009	8/1/2009	1	Preemptive - Rainfall
Pear Tree Point Beach	11	8/24/2009	8/25/2009	1	Preemptive - Rainfall
Penfield Beach	11	6/19/2009	6/20/2009	1	Preemptive - Rainfall
Quigley Beach	11	6/9/2009	6/10/2009	1	Preemptive - Rainfall
Quigley Beach	11	6/19/2009	6/20/2009	1	Preemptive - Rainfall
Quigley Beach	11	6/27/2009	6/28/2009	1	Preemptive - Rainfall

**TABLE PC16. 2009 CONNECTICUT BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Quigley Beach	11	8/22/2009	8/23/2009	1	Preemptive - Rainfall
Quigley Beach	11	8/24/2009	8/25/2009	1	Preemptive - Rainfall
Rowaytown Beach	11	6/18/2009	6/20/2009	2	Preemptive - Rainfall
Sasco Beach	11	6/19/2009	6/20/2009	1	Preemptive - Rainfall
Shady Beach	11	5/29/2009	6/3/2009	5	Monitoring revealed elevated bacteria levels
Shady Beach	11	6/18/2009	6/20/2009	2	Preemptive - Rainfall
Short Beach	11	6/10/2009	6/11/2009	1	Preemptive - Rainfall
Short Beach	11	6/19/2009	6/20/2009	1	Preemptive - Rainfall
Silver Sands State Park Beach	11	8/25/2009	8/27/2009	2	Monitoring revealed elevated bacteria levels
South Pine Creek Beach	11	6/19/2009	6/20/2009	1	Preemptive - Rainfall
Southport Beach	11	6/19/2009	6/20/2009	1	Preemptive - Rainfall
Weed Beach	11	6/19/2009	6/20/2009	1	Preemptive - Rainfall
Weed Beach	11	7/31/2009	8/1/2009	1	Preemptive - Rainfall
Weed Beach	11	8/24/2009	8/25/2009	1	Preemptive - Rainfall
West Beach	11	6/9/2009	6/10/2009	1	Preemptive - Rainfall
West Beach	11	6/19/2009	6/20/2009	1	Preemptive - Rainfall

**TABLE PC16. 2009 CONNECTICUT BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
West Beach	11	6/27/2009	6/28/2009	1	Preemptive - Rainfall
West Beach	11	8/22/2009	8/23/2009	1	Preemptive - Rainfall
West Beach	11	8/24/2009	8/25/2009	1	Preemptive - Rainfall

**TABLE PC17. 2008 CONNECTICUT BEACH CLOSURE SUMMARY**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Anchor Breach (Merwin Point) #1	11	8/8/2008	8/10/2008	2	Preemptive - Rainfall
Anchor Breach (Merwin Point) #2	11	8/8/2008	8/10/2008	2	Preemptive - Rainfall
Byram Beach	11	5/28/2008	5/29/2008	1	Preemptive - Rainfall
Byram Beach	11	6/4/2008	6/5/2008	1	Preemptive - Rainfall
Byram Beach	11	6/5/2008	6/6/2008	1	Monitoring revealed elevated bacteria levels
Byram Beach	11	6/9/2008	6/10/2008	1	Preemptive - Rainfall
Byram Beach	11	6/15/2008	6/16/2008	1	Preemptive - Rainfall
Byram Beach	11	6/17/2008	6/18/2008	1	Preemptive - Rainfall
Byram Beach	11	6/19/2008	6/20/2008	1	Preemptive - Rainfall
Byram Beach	11	7/14/2008	7/15/2008	1	Preemptive - Rainfall
Byram Beach	11	7/24/2008	7/25/2008	1	Preemptive - Rainfall
Byram Beach	11	8/3/2008	8/4/2008	1	Preemptive - Rainfall
Byram Beach	11	8/6/2008	8/7/2008	1	Preemptive - Rainfall
Byram Beach	11	8/16/2008	8/17/2008	1	Preemptive - Rainfall
Cummings Beach	11	6/4/2008	6/5/2008	1	Preemptive - Rainfall
Cummings Beach	11	6/15/2008	6/16/2008	1	Preemptive - Rainfall

**TABLE PC17. 2008 CONNECTICUT BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Cummings Beach	11	7/24/2008	7/25/2008	1	Preemptive - Rainfall
Cummings Beach	11	8/2/2008	8/3/2008	1	Preemptive - Rainfall
Cummings Beach	11	8/6/2008	8/7/2008	1	Preemptive - Rainfall
East (Cove Island Beach)	11	6/4/2008	6/5/2008	1	Preemptive - Rainfall
East (Cove Island Beach)	11	6/15/2008	6/16/2008	1	Preemptive - Rainfall
East (Cove Island Beach)	11	7/24/2008	7/25/2008	1	Preemptive - Rainfall
East (Cove Island Beach)	11	8/2/2008	8/3/2008	1	Preemptive - Rainfall
East (Cove Island Beach)	11	8/6/2008	8/7/2008	1	Preemptive - Rainfall
Great Captain's Island Beach	11	9/7/2008	9/8/2008	1	Preemptive - Rainfall
Greenwich Point Beach	11	7/24/2008	7/25/2008	1	Preemptive - Rainfall
Greenwich Point Beach	11	8/1/2008	8/2/2008	1	Monitoring revealed elevated bacteria levels
Greenwich Point Beach	11	8/3/2008	8/4/2008	1	Preemptive - Rainfall
Greenwich Point Beach	11	8/6/2008	8/7/2008	1	Preemptive - Rainfall
Gulf Beach	11	8/8/2008	8/10/2008	2	Preemptive - Rainfall
Island Beach	11	9/7/2008	9/8/2008	1	Preemptive - Rainfall
Long Beach (Marnick's)	11	7/24/2008	7/25/2008	1	Preemptive - Rainfall

**TABLE PC17. 2008 CONNECTICUT BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Long Beach (Marnick's)	11	8/9/2008	8/10/2008	1	Preemptive - Rainfall
Long Beach (Proper)	11	7/24/2008	7/25/2008	1	Preemptive - Rainfall
Long Beach (Proper)	11	8/9/2008	8/10/2008	1	Preemptive - Rainfall
Long Beach (Proper)	11	8/26/2008	8/28/2008	2	Monitoring revealed elevated bacteria levels
Pear Tree Point Beach	11	6/16/2008	6/20/2008	4	Preemptive - Rainfall
Pear Tree Point Beach	11	7/3/2008	7/11/2008	8	Monitoring revealed elevated bacteria levels
Pear Tree Point Beach	11	7/17/2008	7/21/2008	4	Monitoring revealed elevated bacteria levels
Pear Tree Point Beach	11	7/24/2008	7/26/2008	2	Preemptive - Rainfall
Quigley Beach	11	6/4/2008	6/5/2008	1	Preemptive - Rainfall
Quigley Beach	11	6/15/2008	6/16/2008	1	Preemptive - Rainfall
Quigley Beach	11	7/24/2008	7/25/2008	1	Preemptive - Rainfall
Quigley Beach	11	8/2/2008	8/3/2008	1	Preemptive - Rainfall
Quigley Beach	11	8/6/2008	8/7/2008	1	Preemptive - Rainfall
Short Beach	11	6/5/2008	6/6/2008	1	Monitoring revealed elevated bacteria levels
Short Beach	11	6/17/2008	6/18/2008	1	Monitoring revealed elevated bacteria levels
Short Beach	11	7/24/2008	7/25/2008	1	Preemptive - Rainfall

**TABLE PC17. 2008 CONNECTICUT BEACH CLOSURE SUMMARY (Continued)**

<b>Beach</b>	<b>AU #</b>	<b>Start Date</b>	<b>End Date</b>	<b># of Days</b>	<b>Reason</b>
Short Beach	11	8/9/2008	8/10/2008	1	Preemptive - Rainfall
Short Beach	11	8/26/2008	8/28/2008	2	Preemptive - Rainfall
Silver Sands State Park Beach	11	8/9/2008	8/10/2008	1	Preemptive - Rainfall
Walnut Beach	11	8/8/2008	8/10/2008	2	Preemptive - Rainfall
Weed Beach	11	6/16/2008	6/20/2008	4	Preemptive - Rainfall
Weed Beach	11	7/3/2008	7/8/2008	5	Monitoring revealed elevated bacteria levels
Weed Beach	11	7/24/2008	7/26/2008	2	Preemptive - Rainfall
West Beach	11	6/4/2008	6/5/2008	1	Preemptive - Rainfall
West Beach	11	6/15/2008	6/16/2008	1	Preemptive - Rainfall
West Beach	11	7/24/2008	7/25/2008	1	Preemptive - Rainfall
West Beach	11	8/2/2008	8/3/2008	1	Preemptive - Rainfall
West Beach	11	8/6/2008	8/7/2008	1	Preemptive - Rainfall
Woodmont Beach	11	8/8/2008	8/10/2008	2	Preemptive - Rainfall



## TABLE PC18. SUMMARY OF 2009 PRIMARY CONTACT RECREATION DATA

X, Y, Z = 5%, 10% and 30%, respectively, of the number of days between Memorial Day and Labor Day.

AU	Total # of beaches	20% of the beaches (round up)	non-precautionary closures				precautionary closures				
			# of beaches affected	total closure days	# of beaches with closure days that exceed X	# of beaches with 7 or more consecutive closure days	# of beaches affected	total closure days	# of beaches with closure days that exceed Y	# of beaches with closure days > Z	# of beaches with 7 or more consecutive closure days
AU1	---	---	---	---	---	---	---	---	---	---	---
AU2	---	---	---	---	---	---	---	---	---	---	---
AU3	33	7	0	0	0	0	0	0	0	0	0
AU4	2	1	0	0	0	0	0	0	0	0	0
AU5	---	---	---	---	---	---	---	---	---	---	---
AU6	---	---	---	---	---	---	---	---	---	---	---
AU7	2	1	0	0	0	0	0	0	0	0	0
AU8	---	---	---	---	---	---	---	---	---	---	---
AU9	6	1	1	6	1	0	0	0	0	0	0
AU10	49	10	2	38	1	1	15	112	0	0	0
AU11	38	8	6	23	1	1	19	67	1	0	0
AU12	51	11	6	43	4	4	46	314	0	0	0
AU13	2	1	0	0	0	0	0	0	0	0	0
AU14	---	---	---	---	---	---	---	---	---	---	---
AU15	---	---	---	---	---	---	---	---	---	---	---
AU16	---	---	---	---	---	---	---	---	---	---	---
AU17	1	1	0	0	0	0	0	0	0	0	0
AU18	1	1	0	0	0	0	1	1	0	0	0
AU19	4	1	0	0	0	0	0	0	0	0	0
AU20	10	2	4	131	3	3	7	28	0	0	0
AU21	---	---	---	---	---	---	---	---	---	---	---

## TABLE PC19: SUMMARY OF 2008 PRIMARY CONTACT RECREATION DATA

X, Y, Z = 5%, 10% and 30%, respectively, of the number of days between Memorial Day and Labor Day.

AU	Total # of beaches	20% of the beaches (round up)	non-precautionary closures				precautionary closures				
			# of beaches affected	total closure days	# of beaches with closure days that exceed X	# of beaches with 7 or more consecutive closure days	# of beaches affected	total closure days	# of beaches with closure days that exceed Y	# of beaches with closure days > Z	# of beaches with 7 or more consecutive closure days
AU1	---	---	---	---	---	---	---	---	---	---	---
AU2	---	---	---	---	---	---	---	---	---	---	---
AU3	33	7	0	0	0	0	0	0	0	0	0
AU4	2	1	0	0	0	0	0	0	0	0	0
AU5	---	---	---	---	---	---	---	---	---	---	---
AU6	---	---	---	---	---	---	---	---	---	---	---
AU7	2	1	0	0	0	0	0	0	0	0	0
AU8	---	---	---	---	---	---	---	---	---	---	---
AU9	6	1	1	6	1	0	0	0	0	0	0
AU10	49	10	2	38	1	1	15	112	0	0	0
AU11	38	8	6	23	1	1	19	67	1	0	0
AU12	51	11	6	43	4	4	46	314	0	0	0
AU13	2	1	0	0	0	0	0	0	0	0	0
AU14	---	---	---	---	---	---	---	---	---	---	---
AU15	---	---	---	---	---	---	---	---	---	---	---
AU16	---	---	---	---	---	---	---	---	---	---	---
AU17	1	1	0	0	0	0	0	0	0	0	0
AU18	1	1	0	0	0	0	1	1	0	0	0
AU19	4	1	0	0	0	0	0	0	0	0	0
AU20	10	2	4	131	3	3	7	28	0	0	0
AU21	---	---	---	---	---	---	---	---	---	---	---

## TABLE PC20. 2009 PRIMARY CONTACT RECREATION USE ASSESSMENT

(Based on the criteria of Table PC1 and the data of Tables PC2 through PC19)

Assessment Unit				Assessment	Pollutant(s)	Sources
ID	Name	Size Sq. Mi.	Class			
<i>AU1</i>	Arthur Kill	0.64	B-1	Not Assessed – Use Not Assigned	-----	-----
<i>AU2</i>	Arthur Kill/ Kill Van Kull	7.97	B-2	Not Assessed – Use Not Assigned	-----	-----
<i>AU3</i>	Atlantic Ocean	135	A	Fully Supporting	-----	-----
<i>AU4</i>	East River-Upper	0.75	A	Fully Supporting	-----	-----
<i>AU5</i>	East River-Lower	12.55	B-1	Not Assessed – Use Not Assigned	-----	-----
<i>AU6</i>	Harlem River	0.56	B-2	Not Assessed– Use Not Assigned	-----	-----
<i>AU7</i>	Hudson River- Upper	52.47	A	Fully Supporting	-----	-----
<i>AU8</i>	Hudson River- Lower	11.14	B-1	Not Assessed – Use Not Assigned	-----	-----
<i>AU9</i>	Jamaica Bay	11.32	A	Not Supporting	Elevated Bacteria	See Note 1
<i>AU10</i>	Long Island Sound -West	93.74	A	Not Supporting	Excessive Precautionary Closures	See Note 1
<i>AU11</i>	Long Island Sound - CT	225	A	Fully Supporting	-----	-----
<i>AU12</i>	Long Island Sound - East	81.26	A	Fully Supporting	-----	-----
<i>AU13</i>	Lower NY Bay	46.52	A	Fully Supporting	-----	-----
<i>AU14</i>	Gravesend Bay	0.77	B-1	Not Assessed – Use Not Assigned	-----	-----
<i>AU15</i>	Newark Bay	4.28	B-2	Not Assessed – Use Not Assigned	-----	-----
<i>AU16</i>	Newtown Creek	0.24	B-2	Not Assessed – Use Not Assigned	-----	-----
<i>AU17</i>	Raritan Bay - NY	37.78	A	Fully Supporting	-----	-----
<i>AU18</i>	Raritan Bay - NJ	27.44	A	Fully Supporting	-----	-----
<i>AU19</i>	Sandy Hook Bay	14.78	A	Fully Supporting	-----	-----
<i>AU20</i>	East Bay Great South Bay	12.42	A	Not Supporting	Elevated Bacteria	See Note 1
<i>AU21</i>	Upper NY Bay	20.37	B-1	Not Assessed – Use Not Assigned	-----	-----

Note 1: Storm Sewer Outfalls, Combined Sewer Overflows, Wastewater Treatment Plant Bypasses and/or Equipment Failures.

## TABLE PC21. 2008 PRIMARY CONTACT RECREATION USE ASSESSMENT

(Based on the criteria of Table PC1 and the data of Tables PC2 through PC19)

Assessment Unit				Assessment	Pollutant(s)	Sources
ID	Name	Size Sq. Mi.	Class			
<i>AU1</i>	Arthur Kill	0.64	B-1	Not Assessed – Use Not Assigned	-----	-----
<i>AU2</i>	Arthur Kill/ Kill Van Kull	7.97	B-2	Not Assessed – Use Not Assigned	-----	-----
<i>AU3</i>	Atlantic Ocean	135	A	Fully Supporting	-----	-----
<i>AU4</i>	East River-Upper	0.75	A	Fully Supporting	-----	-----
<i>AU5</i>	East River-Lower	12.55	B-1	Not Assessed – Use Not Assigned	-----	-----
<i>AU6</i>	Harlem River	0.56	B-2	Not Assessed– Use Not Assigned	-----	-----
<i>AU7</i>	Hudson River- Upper	52.47	A	Fully Supporting	-----	-----
<i>AU8</i>	Hudson River- Lower	11.14	B-1	Not Assessed – Use Not Assigned	-----	-----
<i>AU9</i>	Jamaica Bay	11.32	A	Not Supporting	Elevated Bacteria	See Note 1
<i>AU10</i>	Long Island Sound -West	93.74	A	Fully Supporting	-----	-----
<i>AU11</i>	Long Island Sound - CT	225	A	Fully Supporting	-----	-----
<i>AU12</i>	Long Island Sound - East	81.26	A	Fully Supporting	-----	-----
<i>AU13</i>	Lower NY Bay	46.52	A	Fully Supporting	-----	-----
<i>AU14</i>	Gravesend Bay	0.77	B-1	Not Assessed – Use Not Assigned	-----	-----
<i>AU15</i>	Newark Bay	4.28	B-2	Not Assessed – Use Not Assigned	-----	-----
<i>AU16</i>	Newtown Creek	0.24	B-2	Not Assessed – Use Not Assigned	-----	-----
<i>AU17</i>	Raritan Bay - NY	37.78	A	Fully Supporting	-----	-----
<i>AU18</i>	Raritan Bay - NJ	27.44	A	Fully Supporting	-----	-----
<i>AU19</i>	Sandy Hook Bay	14.78	A	Fully Supporting	-----	-----
<i>AU20</i>	East Bay Great South Bay	12.42	A	Not Supporting	Elevated Bacteria	See Note 1
<i>AU21</i>	Upper NY Bay	20.37	B-1	Not Assessed – Use Not Assigned	-----	-----

Note 1: Storm Sewer Outfalls, Combined Sewer Overflows, Wastewater Treatment Plant Bypasses and/or Equipment Failures.

## TABLE PC22. OVERALL 2008-2009 PRIMARY CONTACT RECREATION USE ASSESSMENT

(Based on the criteria of Table PC1 and the data of Tables PC2 through PC21)

Assessment Unit				Assessment	Pollutant(s)	Sources
ID	Name	Size Sq. Mi.	Class			
<i>AU1</i>	Arthur Kill	0.64	B-1	Not Assessed – Use Not Assigned	-----	-----
<i>AU2</i>	Arthur Kill/ Kill Van Kull	7.97	B-2	Not Assessed – Use Not Assigned	-----	-----
<i>AU3</i>	Atlantic Ocean	135	A	Fully Supporting	-----	-----
<i>AU4</i>	East River-Upper	0.75	A	Fully Supporting	-----	-----
<i>AU5</i>	East River-Lower	12.55	B-1	Not Assessed – Use Not Assigned	-----	-----
<i>AU6</i>	Harlem River	0.56	B-2	Not Assessed– Use Not Assigned	-----	-----
<i>AU7</i>	Hudson River- Upper	52.47	A	Fully Supporting	-----	-----
<i>AU8</i>	Hudson River- Lower	11.14	B-1	Not Assessed – Use Not Assigned	-----	-----
<i>AU9</i>	Jamaica Bay	11.32	A	Not Supporting	Elevated Bacteria	See Note 1
<i>AU10</i>	Long Island Sound -West	93.74	A	Not Supporting	Excessive Precautionary Closures	See Note 1
<i>AU11</i>	Long Island Sound - CT	225	A	Fully Supporting	-----	-----
<i>AU12</i>	Long Island Sound - East	81.26	A	Fully Supporting	-----	-----
<i>AU13</i>	Lower NY Bay	46.52	A	Fully Supporting	-----	-----
<i>AU14</i>	Gravesend Bay	0.77	B-1	Not Assessed – Use Not Assigned	-----	-----
<i>AU15</i>	Newark Bay	4.28	B-2	Not Assessed – Use Not Assigned	-----	-----
<i>AU16</i>	Newtown Creek	0.24	B-2	Not Assessed – Use Not Assigned	-----	-----
<i>AU17</i>	Raritan Bay - NY	37.78	A	Fully Supporting	-----	-----
<i>AU18</i>	Raritan Bay - NJ	27.44	A	Fully Supporting	-----	-----
<i>AU19</i>	Sandy Hook Bay	14.78	A	Fully Supporting	-----	-----
<i>AU20</i>	East Bay Great South Bay	12.42	A	Not Supporting	Elevated Bacteria	See Note 1
<i>AU21</i>	Upper NY Bay	20.37	B-1	Not Assessed – Use Not Assigned	-----	-----

Note 1: Storm Sewer Outfalls, Combined Sewer Overflows, Wastewater Treatment Plant Bypasses and/or Equipment Failures.

**TABLE PC23. INTERSTATE ENVIRONMENTAL DISTRICT  
2008-2009 AREA SUPPORT SUMMARY FOR  
PRIMARY CONTACT RECREATION**

	Total Area (Square Miles)	% of Total Area
Fully Supporting	<b>621.00</b>	<b>77.92</b>
Fully Supporting But Threatened	<b>0</b>	<b>0</b>
Not Supporting	<b>117.48</b>	<b>14.74</b>
Not Assessed - Use Not Assigned	<b>58.52</b>	<b>7.34</b>
Not Assessed - Insufficient Data	<b>0</b>	<b>0</b>

# SECONDARY CONTACT RECREATION USE ASSESSMENT

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Secondary contact recreation is defined as recreational activities where the probability of water ingestion is minimal and includes, but is not limited to, boating and fishing.

**TABLE SCR1. SECONDARY CONTACT RECREATION ASSESSMENT CRITERIA**

CRITERIA	DESIGNATED USE SUPPORT
Water quantity and/or quality or access to the shoreline do not restrict or discourage secondary contact recreation (fishing, boating, aesthetic enjoyment).	Fully Supporting
Occasional water quality (such as aquatic vegetation, sedimentation) or quantity (low flow or low water level) discourage the use of the water for secondary contact recreation or restricted navigation due to sedimentation and/or awaiting dredging/disposal permits.	Fully Supporting but Threatened
There is not sufficient stream flow or the water level is not high enough to support secondary contact recreational uses. No public access ramps.	Not Supporting

**TABLE SCR2. OVERALL 2008-2009 SECONDARY  
CONTACT RECREATION USE ASSESSMENT**

Assessment Unit				Assessment	Pollutant(s)	Sources
ID	Name	Size Sq. Mi.	Class			
<i>AU1</i>	Arthur Kill	0.64	B-1	Fully Supporting	-----	-----
<i>AU2</i>	Arthur Kill/ Kill Van Kull	7.97	B-2	Fully Supporting	-----	-----
<i>AU3</i>	Atlantic Ocean	135	A	Fully Supporting	-----	-----
<i>AU4</i>	East River-Upper	0.75	A	Fully Supporting	-----	-----
<i>AU5</i>	East River-Lower	12.55	B-1	Fully Supporting	-----	-----
<i>AU6</i>	Harlem River	0.56	B-2	Fully Supporting	-----	-----
<i>AU7</i>	Hudson River- Upper	52.47	A	Fully Supporting	-----	-----
<i>AU8</i>	Hudson River- Lower	11.14	B-1	Fully Supporting	-----	-----
<i>AU9</i>	Jamaica Bay	11.32	A	Fully Supporting	-----	-----
<i>AU10</i>	Long Island Sound -West	93.74	A	Fully Supporting	-----	-----
<i>AU11</i>	Long Island Sound - CT	225	A	Fully Supporting	-----	-----
<i>AU12</i>	Long Island Sound - East	81.26	A	Fully Supporting	-----	-----
<i>AU13</i>	Lower NY Bay	46.52	A	Fully Supporting	-----	-----
<i>AU14</i>	Gravesend Bay	0.77	B-1	Fully Supporting	-----	-----
<i>AU15</i>	Newark Bay	4.28	B-2	Fully Supporting	-----	-----
<i>AU16</i>	Newtown Creek	0.24	B-2	Fully Supporting	-----	-----
<i>AU17</i>	Raritan Bay - NY	37.78	A	Fully Supporting	-----	-----
<i>AU18</i>	Raritan Bay - NJ	27.44	A	Fully Supporting	-----	-----
<i>AU19</i>	Sandy Hook Bay	14.78	A	Fully Supporting	-----	-----
<i>AU20</i>	East Bay Great South Bay	12.42	A	Fully Supporting	-----	-----
<i>AU21</i>	Upper NY Bay	20.37	B-1	Fully Supporting	-----	-----



**TABLE SCR3. INTERSTATE ENVIRONMENTAL DISTRICT  
2008-2009 AREA SUPPORT SUMMARY FOR  
SECONDARY CONTACT RECREATION**

	Total Area (Square Miles)	% of Total Area
Fully Supporting	<b>797</b>	<b>100</b>
Fully Supporting But Threatened	<b>0</b>	<b>0</b>
Not Supporting	<b>0</b>	<b>0</b>
Not Assessed - Use Not Assigned	<b>0</b>	<b>0</b>
Not Assessed - Insufficient Data	<b>0</b>	<b>0</b>

**TABLE 5. ASSESSMENT SUMMARY IN THE INTERSTATE ENVIRONMENTAL DISTRICT AND CATEGORY LISTING**

<b>AUs</b>	<b><i>Aquatic Life Use Support Assessment</i></b>	<b><i>Fish Consumption Use Support Assessment</i></b>	<b><i>Shellfish Consumption Use Support Assessment</i></b>	<b><i>Primary Contact Recreation Use Support Assessment</i></b>	<b><i>Secondary Contact Recreation Use Support Assessment</i></b>	<b><i>Category Listing</i></b>
<i>AU1</i>	Not Assessed-Insufficient Data	Not Supporting	Not Assessed – Use Not Assigned	Not Assessed – Use Not Assigned	Fully Supporting	2, 3
<i>AU2</i>	Not Assessed-Insufficient Data	Not Supporting	Not Assessed – Use Not Assigned	Not Assessed – Use Not Assigned	Fully Supporting	2, 3
<i>AU3</i>	Fully Supporting	Fully Supporting	Fully Supporting	Fully Supporting	Fully Supporting	1
<i>AU4</i>	Not Supporting	Not Supporting	Not Supporting	Fully Supporting	Fully Supporting	2
<i>AU5</i>	Not Supporting	Not Supporting	Not Assessed – Use Not Assigned	Not Assessed – Use Not Assigned	Fully Supporting	2, 3
<i>AU6</i>	Not Assessed-Insufficient Data	Not Supporting	Not Assessed – Use Not Assigned	Not Assessed– Use Not Assigned	Fully Supporting	2, 3
<i>AU7</i>	Not Assessed-Insufficient Data	Not Supporting	Not Supporting	Fully Supporting	Fully Supporting	2, 3
<i>AU8</i>	Not Assessed-Insufficient Data	Not Supporting	Not Assessed – Use Not Assigned	Not Assessed – Use Not Assigned	Fully Supporting	2, 3
<i>AU9</i>	Not Supporting	Not Supporting	Not Supporting	Not Supporting	Fully Supporting	2
<i>AU10</i>	Not Supporting	Not Supporting	Not Supporting	Not Supporting	Fully Supporting	2
<i>AU11</i>	Not Supporting	Not Supporting	Fully Supporting But Threatened	Fully Supporting	Fully Supporting	2
<i>AU12</i>	Not Supporting	Not Supporting	Fully Supporting	Fully Supporting	Fully Supporting	2
<i>AU13</i>	Not Assessed-Insufficient Data	Not Supporting	Not Supporting	Fully Supporting	Fully Supporting	2, 3
<i>AU14</i>	Not Assessed-Insufficient Data	Not Supporting	Not Assessed – Use Not Assigned	Not Assessed – Use Not Assigned	Fully Supporting	2, 3
<i>AU15</i>	Not Assessed-Insufficient Data	Not Supporting	Not Assessed – Use Not Assigned	Not Assessed – Use Not Assigned	Fully Supporting	2, 3
<i>AU16</i>	Not Supporting	Not Supporting	Not Assessed – Use Not Assigned	Not Assessed – Use Not Assigned	Fully Supporting	2
<i>AU17</i>	Not Assessed-Insufficient Data	Not Supporting	Not Supporting	Fully Supporting	Fully Supporting	2, 3
<i>AU18</i>	Not Supporting	Not Supporting	Fully Supporting But Threatened	Fully Supporting	Fully Supporting	2
<i>AU19</i>	Not Supporting	Not Supporting	Fully Supporting But Threatened	Fully Supporting	Fully Supporting	2
<i>AU20</i>	Not Assessed-Insufficient Data	Not Supporting	Not Supporting	Not Supporting	Fully Supporting	2, 3
<i>AU21</i>	Not Supporting	Not Supporting	Not Assessed – Use Not Assigned	Not Assessed – Use Not Assigned	Fully Supporting	2

# GROUND WATER MONITORING AND ASSESSMENT

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All the waters of the Interstate Environmental Commission's District are estuarine.