

Navigating Surface Water Policies in New Jersey



2003

Actions That Degrade Stream Quality

1. Deforestation & development
2. Stormwater runoff
3. Wastewater discharges
4. Improper agriculture practices
5. Excessive erosion of soil and stream banks
6. Drought conditions

Actions That Protect Stream Quality

1. Maintaining natural vegetation.
2. Minimizing disturbances of wetlands, forests, and meadows.
3. Maximizing stormwater infiltration.
4. Reducing pollution from fertilizers, pesticides and litter.
5. Encouraging the protection of stream corridors.



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Waterways Are a Valuable Asset in Your Community

Lakes, rivers and streams perform vital functions in our communities. Our waterways provide drinking water to 4 million people; serve as wildlife habitats; provide opportunities for fishing and swimming; convey stormwater drainage; and serve farm irrigation and industry needs. However, these resources are being strained and impaired by the needs of a growing population and development. Over 1 million people have moved to the Raritan Basin region in the last decade.

Studies show that activities we perform on land have significant consequences to surface waters. Therefore, we must be mindful of these connections, and minimize the possible risks of contamination to our water, and work to protect this limited and important resource. National studies document that it is less expensive to preserve clean water supplies to meet future needs than to treat polluted water.

This guide outlines how our waterways can be impaired, and the programs and regulations NJ has instituted to provide clean and plentiful water resources. It also outlines how citizens can become more informed and actively protect these water resources.

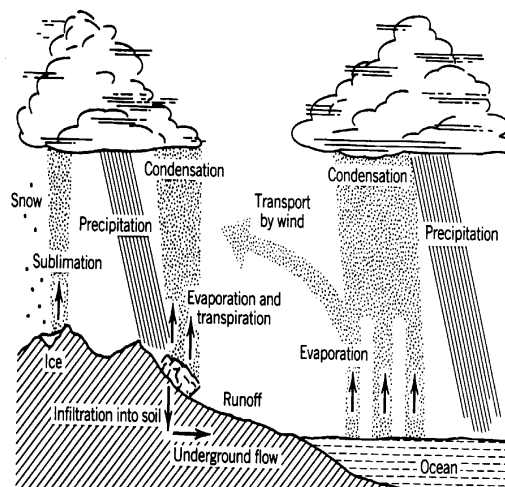
Defining Local Waterways and Watersheds

A watershed is defined as an area of land that drains to a certain body of water, and it includes both the waterway and the land that drains to it. Each watershed is separated topographically by a ridge or hill. When rain or snow falls on the land it can 1) evaporate or be absorbed by plants; 2) infiltrate into the ground to replenish our groundwater supplies; or 3) runoff and flow to local surface water streams, rivers, lakes or bays.

What watershed do you live in?

Find the watershed in your community at www.state.nj.us/dep/watershedmgt/surfjn/index.html

The New Jersey Department of Environmental Protection (NJDEP) has identified 20 distinct watershed areas. The Stony Brook-Millstone River Watershed Management Area, located in central NJ, is identified as WMA10, which drains north to the Raritan River.



This guide provides an informational overview of federal and New Jersey programs and regulations. For more detailed information please refer to the listed resources and websites in the guide.

How Clean Is Our Surface Water ?



What Threatens Our Local Water Resources?

Are you concerned about the impacts to our streams from development, stormwater and wastewater discharges? Did you know that 65% of waterways in New Jersey are biologically impaired from increases in point and nonpoint sources of pollution?

- ***A Point Source of Pollution*** is a direct discharge from a pipe into a waterway, and can include discharges from industry, sewage treatment plants, power plants, and stormwater discharges. These discharges are regulated by permits to protect water quality (see NJPDES program).
- ***Nonpoint Source Pollution (NPS)*** is generated by our everyday habits, but does not have a distinct source. NPS includes stormwater runoff that can be polluted by sediments; litter; pesticides and fertilizers from farms or lawns; waste from septic systems, wildlife and pets; oil and metal compounds from car emissions, fuels, engines, and tire wear; and even atmospheric deposition from airborne pollutants. Degraded stream corridors with limited vegetation cover, poor bank stability, excessive sedimentation, and reduced stream flow can impair water quality and biological diversity.
- ***Impervious Surfaces*** such as roads, rooftops, and parking lots increase as land is developed, replacing the forests and meadows. These hard surfaces can impede the infiltration of rain by 40%; increase stormwater runoff volumes by 65%; and add pollutant loads to our streams. National studies indicate that when impervious surfaces cover more than 10% of an area, water quality is impaired. About one third of the Stony Brook-Millstone Watershed, primarily along the Route 1 corridor, has been developed to levels of 10-20% impervious cover.
- ***Top three pollutants impairing our waterways include:*** 1) *sediments* from farms, construction sites, and eroded stream banks; 2) *bacteria* from combined sewer outfalls, untreated sewage, and runoff from pets, wildlife, and farm animals; and 3) *nutrients* from fertilizers used for agriculture and lawns, animal waste, sewage treatment plants, and failing septic systems. The most common nutrients are nitrogen and phosphorus.



Are Your Local Waters Impaired?

Waters are considered impaired, when pollutants prevent a waterway from meeting its designated use for drinking water, swimming, fishing or agriculture. The Bureau of Freshwater and Biological Monitoring (BFBM), within the NJDEP, monitors surface water to ensure that the state water quality standards are being met. These monitoring programs include chemical and biological assessments, but most stations are only sampled once every four years. www.state.nj.us/dep/wmm/bfbm/

- ***Chemical assessment*** monitoring includes: temperature, phosphates, nitrates, pH (the acidity of the water), turbidity, and dissolved oxygen levels at 115 stations in NJ. Large variations in any of these conditions can threaten the health of aquatic organisms dependent on these waters. For example, low dissolved oxygen levels can kill fish and reduce the viability of aquatic eggs and young fry.
- ***Biological assessments*** monitor the diversity of macroinvertebrates, which include insect larvae, worms, snails, clams, and crustaceans that live on the bottom of streams and are critical to the ecosystem and food chain. If the water is healthy, a wide variety or diversity of macroinvertebrates can be found in a relatively small area. Impaired waters are dominated by pollutant tolerant species like worms, midges or leeches, and show little species diversity. The *Ambient Biological Monitoring Network (AMNET)* program has monitored all of the major drainage basins twice, and 820 sampling sites have been established.



What Laws, Regulations and Programs Protect Surface Water in NJ ?

Protecting Our Water Supplies - Today and For the Future

Various Laws, regulations and programs at the federal and state level protect our surface water. By learning about these policies, you can better understand how your local waters are being protected.

Clean Water Act (CWA) of 1972—33 U.S.C. Chapter 26

The federal Clean Water Act (CWA) was enacted in 1972 to protect our nations water resources and provide citizens with "reliable and accurate" information about their water. It is the pillar for many laws and regulations that have protected our water resources for 30 years. For more information, order the "*The Clean Water Act: An Owner's Manual*" at www.rivernetwork.org/marketplace/ or view the CWA text at www.epa.gov/water/laws.html



Source Water Assessment Programs (SWAPs)—P.L. 104-182

In 1996, the Federal Safe Drinking Water Act required states to establish a Source Water Assessment Program (SWAP) to evaluate potential risk of contamination to public drinking water, monitor public water providers, and inform the public about water quality. NJDEP has initiated this work and expects to complete Source Water Assessment Plans in 2003. Visit www.state.nj.us/dep/swap

The most important strategy to protect our water supplies is protect the land that may impact those resources, through appropriate Land Use Planning, Watershed Management, Open Space Conservation, and restricting activities along stream corridors.

Water Classifications and Standards - Does Your Water Make the Grade?

NJDEP has established the following surface water quality classifications based on their natural characteristics and environmental settings. *Category 1* waters include major drinking water reservoirs, or provide sensitive habitat to trout or other threatened species, and must be protected from measurable changes in water quality through anti-degradation restrictions. All other water are designated as *Category 2*.

NJDEP also classifies waters as: Freshwater (FW), Coastal Saline waters (SC), Saline waters of Estuaries (SE), Pinelands waters (PL), Trout Production (TP) or Maintenance (TM), and Non-Trout (NT). For more details, go to www.state.nj.us/dep/antisprawl/c1.html

Surface Water Quality Standards (SWQS)—N.J.A.C. 7:9B

Surface Waters are classified by the state with certain *designated uses*, such as drinking water, aquatic life support, fish consumption, shellfish harvesting, swimming, boating, and agriculture. *State Water Quality Standards are established to ensure that these designated uses are protected*. Primary standards protect drinking water from specific contaminants that can affect public health and are identified as Maximum Contaminant Levels (MCLs). Secondary standards are established for color, ph, odor and taste. These standards also outline general policies to ensure that the designated uses are protected. www.state.nj.us/dep/dwq/swqs.htm

What Laws, Regulations, and Programs Protect Surface Water in NJ ?

Drinking Water Standards—N.J.S.A. 59:12A

The Water Supply Administration oversees NJ drinking water standards and ensures that the demand for water does not exceed a sustainable water yield, through the water allocation permitting process. Primary standards are set to protect drinking water from specific contaminants that can affect public health and are identified as Maximum Contaminant Levels (MCLs). Secondary standards are established for color, pH, odor and taste. For the current standards, visit www.state.nj.us/dep/watersupply/standard.htm. The majority or 88% of NJ residents obtain water from a public water system, and receive annual Purveyor's Consumer Confidence Reports, which explain how these public water supplies meet State Standards. EPA also posts information about water quality in NJ, visit www.epa.gov/safewater/dwinfo/nj.htm

Permitting Discharges - How Does this Process Work? Compliance and Enforcement - Where to go for answers!

New Jersey Pollution Discharge Elimination System (NJPDES) N.J.S.A. 58:10A-1

NJPDES is NJ's primary program to oversee discharges to our waterways from varied operations such as industrial facilities, sewage treatment plants and even storm sewers. The program relies on monthly Discharge Monitoring Reports (DMRs) to evaluate compliance. These NJPDES permits are renewed approximately every five years, at which time the public can provide comments and concerns. To review permit data visit the NJDEP searchable database of enforcement reports online at www.nj.gov/dep/enforcement/reports-list.html

Total Maximum Daily Loads (TMDLs) 33 U.S.C. Chapter 26 (CWA), Section 303(d)

Under the Clean Water Act, the TMDL program involves a comprehensive stream evaluation of the cumulative effects of pollutant loads, in order to establish threshold pollutant loadings that a stream can tolerate without impairing its designated use. The TMDL program requires states to identify pollution sources, to develop best management practices, and to prioritize strategies to improve impaired waters. This program works in conjunction with other monitoring and permitting programs. NJDEP has begun to establish TMDL calculations for 25 eutrophic lakes impacted by excessive nutrients and phosphorus, and 100 streams impaired by fecal coliform. Details and schedules are posted at www.state.nj.us/dep/watershedmgt/tmdl.htm.

Stormwater Rules N.J.A.C. 7:14A and N.J.A.C. 7:8

Stormwater regulations were enacted in 1983 to minimize flooding and erosion, and to protect water quality. In 2003, NJDEP proposed new rules to increase stormwater infiltration, reduce runoff volumes, and improve water quality by removing 80% of the total suspended solids in runoff. A Stormwater Best Management Practice Manual (BMP Manual) is available on the NJDEP website. Other stormwater control practices are outlined in the rules for flood plain management, stream encroachment, and Residential Site Improvement Standards (RSIS), www.njstormwater.org



Phase I Stormwater Permits are required for 20,000 industrial sites in New Jersey. Phase II permits require towns, highways and public facilities to obtain permits and submit plans to reduce NPS pollution in runoff.

What is Being Done to Protect Local Streams?

How to Find Water Quality Data for NJ Waterways?

In December 2002, the NJDEP-Division of Science, Research and Technology, published the "*Integrated Water Quality Monitoring and Assessment Report*," which characterizes water quality conditions throughout each of the 20 watershed areas in the State. The report is called the "*Integrated List*," because it combines information that was reported separately under the Clean Water Action Sections 303(d), which identified impaired waters, and 305(b) for an inventory of statewide water quality.

This *Integrated List* report is voluminous, but you can quickly assess your local water quality by reviewing data for your watershed within the Sublist Tables. Sublist 1 identifies streams attaining their designated uses for drinking, swimming and fishing. *Sublist 5 identifies specific stream segments that are impaired, and the reason for the impairment.* www.state.nj.us/dep/dsr/watershed/integratedlist/

Current Water Conditions of the Millstone River

Impairments in the Millstone Watershed have increased in comparison to data from 1994, with 95% of the streams sampled, exhibiting biological impairments. NJDEP has identified forty-seven stream segments within the Millstone Watershed (WMA10) as impaired. This includes 26 streams impaired for aquatic macroinvertebrates. The chemical monitoring identified fecal coliform, metals, phosphorous, and pH as the most significant impairment parameters. Unhealthy levels of mercury were also detected in sediments and fish from Carnegie Lake.

Who Monitors Our Local Streams?

With 7,840 miles of streams in New Jersey, the NJDEP stations are sampled only once in four years; therefore, assistance from volunteer monitoring programs is beneficial. Many opportunities are available for citizens and municipal leaders to learn more about the health of local streams, to monitor, and protect local waterways. The Stony Brook-Millstone Watershed Association sponsors a volunteer StreamWatch program, and recent sampling results and volunteer information are available at www.thewatershed.org. To find a Watershed Association near you and join one of the 50 local volunteer monitoring programs, visit the Watershed Institute at www.watershedinstitute.org.



How can citizens and municipalities use this data to protect surface water?

- Incorporate water quality data into municipal and county planning efforts, and implement local or regional studies to better understand impacts to your water resources.
- Amend plans and work to identify sources of impairments and initiate strategies to reduce these impacts.
- Plant trees along stream corridors, because forests can absorb much water, filter pollutants in the air and water, reduce runoff and erosion, and improve wildlife habitat.
- Implement ordinances to reduce developments on steep slopes, minimize erosion, reduce nonpoint source pollution, control litter, reduce stormwater impacts, and protect stream corridor areas.
- Evaluate the direct and cumulative impacts to local water resources and wetlands during the review process for new development projects.
- Renovate existing stormwater detention facilities, to maximize infiltration, reduce runoff quantity, and enhance the quality of stormwater flows.
- Evaluate Wastewater Quality Management Plans (WQMP) regarding capacity and stream impairments to ensure that local streams will not be impaired by current or future discharges.

How Can You Protect Local Surface Water?



FOR MORE INFORMATION ON:

WATER MONITORING

Stony Brook Millstone Watershed Association

www.thewatershed.org

The Watershed Institute

www.thewatershedinstitute.org

New Jersey Bureau of Freshwater and Biological Monitoring

www.state.nj.us/dep/watershedmgt/bfbm/

NJDEP Water Assessment Team

www.state.nj.us/dep/dsr/watershed/waterteam.htm

Delaware River Basin Commission

www.state.nj.us/drbc/drbc.htm

NJ Water Supply Authority, Raritan River Basin Watershed Management Project

www.raritanbasin.org/

Center for Watershed Protection

www.cwp.org

Working on Watersheds

www.rci.rutgers.edu/cecomm/

FEDERAL PROGRAMS

Environmental Protection Agency

www.epa.gov/water

EPA NPS Solution Toolbox

www.epa.gov/water/owow/npsolutiontoolbox

US Geological Survey (USGS)

www.usgs.gov

NJ STATE PROGRAMS

NJDEP Division of Watershed Management

www.state.nj.us/dep/watershedmgt/index.htm

www.state.nj.us/dep/watershedmgt/surfjn/index.html

www.state.nj.us/dep/swap/

www.njstormwater.org

www.njstormwater.org

New Jersey Geological Survey

www.state.nj.us/dep/njgs/

How Can Citizens Protect Local Surface Water Resources?

Get Involved!

- Join Watershed Associations, like the Stony Brook Millstone Watershed Association (SBMWA), and their Volunteer Monitoring Programs.
- Take a hike to learn about the local waterways.
- Participate in stream cleanup programs, reforestation along streams, or stenciling storm drains to deter any dumping.
- Participate in local planning meetings on water supply, wastewater discharge and stormwater issues.
- Support the conservation of open space to protect waterways.
- Contact NJDEP to review the compliance status of facilities that are significant discharges to local streams.
- Report unsightly discharges, fish kills, and significant erosion problems to your municipality, Watershed Association, and NJDEP. The NJDEP Hotline for reporting is **1-877-WARNDEP (1-877-927-6337)**.

Employ Good Habits!

- Minimize use of fertilizers, pesticide, on your property to reduce impacts to water quality.
- Maximize recycling and use trash receptacles to prevent litter from degrading your streams.
- Pick up pet waste, and do not feed geese. Their waste is a significant source of bacteria and nutrients.
- Properly dispose of hazardous materials, such as oil at recycling centers, do not dispose down street sewers.
- Conserve water by using low-flow toilets and showers.
- Abide by NJDEP fish and shell fish advisories in areas of contamination.
- For more information visit www.state.nj.us/dep/dep/citizen.html



Join our StreamWatch volunteer water monitoring program, operating for over 10 years. Volunteers perform visual, biological, and chemical assessments of local waterways. For more information, contact Steve Yergeau, Watershed Assessment Specialist, at syergeau@thewatershed.org

Be River Friendly!

Participate in our three River-Friendly programs that help residents, businesses, or golf courses adopt practices that reduce the amount of pollution that comes off their properties. Such efforts help protect drinking water, improve water quality for aquatic life, and ensure a clean and sustained water supply for future generations. For more information, contact Amy Weaver, Watershed Stewardship Specialist, at aweaver@thewatershed.org