Section 3.0 Recommendations

The water quality analyses conducted during the Indian Brook-Croton Gorge Watershed Planning process identified a number of threats to the environmental resources of the watershed and described a number of actions to protect and restore those resources. Five goals were identified, under which specific recommendations were developed. The recommendations include both activities that municipalities can undertake individually or in partnership with other municipalities in the watershed. Intermunicipal efforts have been recognized by state and federal agencies as a preferred method to address watershed-wide problems. Intermunicipal efforts are typically more efficient by sharing resources and effective by working without the constraints of political boundaries.

The five goals of the Indian Brook-Croton Gorge Watershed Plan are:

- Protect and restore natural resources
- Develop and implement stormwater management practices that will improve water quality
- Promote sustainable development through land use and environmental regulations
- Preserve and protect wildlife and significant wildlife habitats
- Educate the public

Figure 3-1. Croton River Gorge, Cortlandt, New York

3.1 Goal: Protect and Restore Natural Resources

The Croton Bay Watershed contains vital natural resources including wetlands, watercourses and waterbodies. All five communities rely on the reservoirs, aquifers and private wells located throughout the watershed for drinking water supplies. It is critical to protect and improve these water resources. The following recommendations relate to the preservation and restoration of natural resources in the watershed. Information found in Section 2.5, *Existing Conditions: Natural Resources* is the foundation for the following recommendations:

Recommendation 1:

Conduct Streamwalks in the Croton Gorge Basin

Streamwalk is a volunteer based stream surveying program developed by the EPA that serves two purposes: natural resource assessment, and community involvement and education. Volunteers are trained to assess a stream's overall health by walking a segment of the

stream and gathering information on existing physical conditions of in-stream and streamside characteristics. This information can be used later to identify resource needs and to plan conservation measures in the basin and is a first step in establishing an understanding of the condition of a watershed. Equally important as the data collected, is the educational role of the Streamwalk. Through a training program, local volunteers receive a basic course in stream ecology, morphology, water quality, non-point source pollution, and the relationship between a community and its river. The training session increases volunteers' awareness and understanding of potential impairments to the health of a river. What volunteers learn in the training session is reinforced when they conduct the survey itself. The survey brings volunteers into direct contact with a river and creates the opportunity for them to understand better the way a river system works and the relationships between their communities and the river.

Watercourses are vital components of a watershed, serving as the arteries that feed larger waterbodies. As such they are important indicators of watershed health, and degraded watercourses can be significant sources of pollution. The communities along the Croton River in the Croton Gorge sub-watershed should undertake a Streamwalk. A Streamwalk was conducted for the Indian Brook sub-watershed in 2001 (See Supplement A: Additional Resources), which can be easily used to de-

Figure 3-2. Water flowing in the Croton Bay Watershed

velop a Streamwalk program for other watercourses in the watershed.

Recommendation 2:

Remediate Identified Problem Areas in the Indian Brook Basin

The Indian Brook Streamwalk (refer to Supplement A: Additional Resources) identified impairment areas in different stream segments. More detailed investigation of acknowledged impairments should be performed to determine the extent of impairment, ownership (public/private) and accessibility issues, and anticipated effectiveness for restoration purposes. Communities should work together in this effort and should prioritize projects, develop plans and seek funding for the remediation of impairments and the restoration of natural resources. The Westchester County Soil and Water Conservation District may be a valuable resource in such an effort.

Recommendation 3:

Protect Indian Brook Reservoir

The Indian Brook Reservoir is a drinking water source for the Town and Village of Ossining. Undeveloped and underdeveloped lands exist near the reservoir, and steps should be taken in the event these lands are developed to ensure that stormwater management practices are constructed to treat the maximum volume of runoff practical and are maintained in accordance with a practical and feasible operation and maintenance plan. Otherwise, the water quality of the reservoir may be degraded from polluted runoff. The Indian Brook Basin municipalities should also seek funding to acquire land surrounding the reservoir that would serve to increase the buffer area surrounding this important drinking water source. Potential partners might include local land trusts and state and county government. Land could be purchased outright or development rights (conservation easement) could be acquired.

Recommendation 4:

Protect Wetlands at the Local Level

State and federal agencies regulate certain activities in freshwater and tidal wetlands. However, the NYSDEC does not regulate activities in wetlands less than 12.4 acres in size unless they have been determined by the State to be wetlands of unusual local importance. The US Army Corp of Engineers (USACOE) regulates activities in wetlands that meet broader definitions, though there are exemptions for certain actions. The USACOE has a general permitting process for activities under various thresholds and has no regulation of activities within wetland buffer areas. For these and other reasons, regulations to protect all freshwater and tidal wetlands should be implemented and administered at the local level to ensure adequate protection of these fragile resources. Proposed land disturbance activities within wetlands and their associated buffer areas should be reviewed at the local level, and potential impacts should be avoided, minimized or adequately mitigated to the maximum extent practical. The Westchester County Soil and Water Conservation

District's Model Ordinance for Wetland Protection should be used as a guide from which to evaluate the effectiveness of existing local wetlands ordinances. Minimum area thresholds should not be included in the definition of freshwater or tidal wetlands. Minimum regulated buffer area extending 100 feet from the edge of a wetland should also be included in the ordinance. An ordinance review was conducted for each municipality and recommendations were made to ensure that local ordinances help protect wetlands. The Croton Bay Watershed ordinance review can be found in Supplement A: Additional Resources.

Recommendation 5:

Restore Degraded Wetlands

Many Croton Bay Watershed wetlands have become dominated and degraded by invasive species. Funding should be sought to restore the wetlands, particularly the tidal wetlands located along the Route 9/9-A corridor. Restoration of the wetlands would result in improved water quality and improved wildlife habitat, including vital fish habitat. Municipalities should utilize existing data available from the County and State as well as local data to identify and evaluate degraded wetlands. Municipalities should work in cooperation to identify and prioritize projects and seek funding to restore the wetlands. On-going monitoring should be a part of the restoration effort. The Westchester County Soil and Water Conservation District has an active aquatic habitat restoration program and can provide advice and assis-

Figure 3-3. Tidal wetlands, Croton-on-Hudson, New York

tance in this effort.

Recommendation 6:

Ensure Proper Functioning of Septic Systems

A watershed-wide approach to ensure proper functioning of existing septic systems should be developed. Possible approaches include a requirement for inspection upon the transfer of property or when property owners apply for a building permit. Cortlandt, Croton-on-Hudson, New Castle and the Town of Ossining do not currently track septic system failures and the only septic system programs are those established through Westchester County Department of Health. Other municipalities in New York State have promulgated regulations requiring inspections of septic systems and necessary repairs. See Appendix for a discussion of potential programs and examples of existing programs.

Recommendation 7:

Monitor the Croton River

As described in Section 2.5, *Existing Conditions: Natural Resources*, the surface water of the Croton River and Croton-on-Hudson's drinking water aquifer are potentially connected. The water quality of the Croton River must be protected in order to protect the drinking water aquifer. Monitoring for water quality parameters and other typical stormwater pollutants should be conducted regularly to ensure the good river water quality.

Recommendation 8:

Prevent Illegal Activities that Degrade Water Quality

Croton Bay municipalities should cooperate to monitor and control illegal activities, such as trespassing, littering, loitering and vandalism, that may degrade water quality in the watershed.

3.2 Goal: Develop and Implement Stormwater Management Practices that will Improve Water Quality

Multiple stormwater management practices, all of which could contribute to the improvement of water quality in the watershed, should be implemented in the Croton Bay Watershed.

Recommendation 1:

Develop and Adopt Stormwater Infrastructure Data Management Standards

Stormwater infrastructure data should be standardized throughout the watershed. Data should be collected and maintained in electronic form and geo-coded, enabling the data to be easily shared and incorporated into larger databases. Standards should be established for the data elements, scale of data, unit of measurement, frequency of collection, mapping datum and degree of accuracy. Maintenance activi-

ties, such as daily log information for road sanding and salting activities, schedules for catch basin cleaning, and general maintenance and repair work programs, should be included. A procedure to share appropriate data among towns and involved agencies should be developed so that each agency can make use of all relevant data in analyses.

Municipalities should also work to identify existing private infrastructure. Where feasible, mapping of all stormwater infrastructure, public and private, should be undertaken in conjunction with other programs or through routine maintenance of stormwater infrastructure. Cortlandt and Croton-on-Hudson have mapped some of their stormwater infrastructure and are in the process of mapping and identifying all catch basins and outfalls. The Village of Ossining has mapped their stormwater infrastructure.

Recommendation 2:

Establish Illicit Discharge Connection Program

An illicit discharge connection program should be developed to identify illegal connections. In addition, municipalities should develop a watershed-wide monitoring inspection program, including clear protocols for dealing with stormwater conveyance violations. No official illicit discharge program exists in Croton-on-Hudson , but the Village responds to complaints. The Village mailed information to citizens asking them to call in and notify them if they see anything unusual coming from the storm drain pipes.

Recommendation 3:

Develop Stormwater Infrastructure Monitoring and Maintenance Programs

A. Develop Stormwater Infrastructure Monitoring Program

Stormwater infrastructure monitoring programs should be developed to ensure that existing stormwater infrastructure are operating effectively. The infrastructure should not contribute unnecessary pollutants into the watershed due to clogging, erosion or malfunction.

A routing schedule for inspection and maintenance should be established. Routing schedules that begin in the headwater areas of each sub-basin and progress to the discharge point within each sub-basin are most effective because they reduce the likelihood of the maintenance activity producing more work in areas that have already been maintained. Monitoring programs should include a protocol to address violations discovered during monitoring activities.

B. Develop Catch Basin Cleaning Program

A routine catch basin cleaning program should be developed and implemented by each Croton Bay municipality. Development of the program should be coordinated with the stormwater infrastructure monitoring program and stormwater infrastruc-

Figure 3-4. Catchbasin Cleaning Programs

- **List standard watershed-wide maintenance practices and identify those used throughout the municipality.**
- **Include a routine maintenance schedule. The cleaning schedule should coincide with street sweeping and other system maintenance efforts and where subwatershed areas cross municipal boundaries, coordination with the adjacent municipality should occur.**
- **Establish routing for catch basin cleaning, similar to other routing efforts, for water quality purposes.**

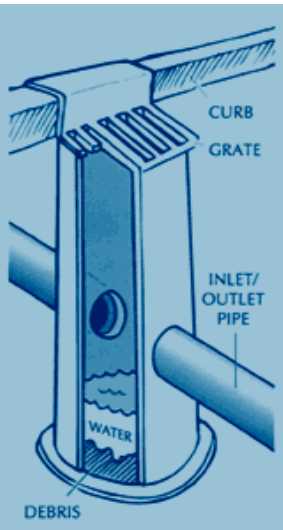


Image from: www.ci.farmington.mi.us

ture mapping. Cortlandt, Croton-on-Hudson, New Castle and the Town of Ossining have existing catch basin cleaning programs. Catch basin cleaning should be increased for water quality protection.

C. Maintenance of Private Stormwater Infrastructure

In many cases, catch basins on private property are not maintained by the municipalities. Owners of private stormwater infrastructure should be contacted and educated as to maintenance requirements of their stormwater infrastructure. Assistance for private stormwater infrastructure owners should be explored. Municipalities could provide private property owners with guidance documents describing how to develop stormwater infrastructure maintenance plans to address catch basin cleaning and parking lot sweeping.

D. Develop Water Quality Street Sweeping Program

Street sweeping is typically based on annual clean-up schedules, performance failures or complaints, not based on protecting water quality. Where sub-basins are divided by municipal boundaries, street sweeping programs should be coordinated among the adjacent municipalities so as to ensure that sweeping efforts achieve the greatest benefits to water quality. The programs should utilize routing schedules as developed under the stormwater infrastructure monitoring program and be coordinated with other municipal maintenance activities such as catch basin cleaning, mowing and leaf collection.

Cortlandt, Croton-on-Hudson, New Castle and the Town and Villages of Ossining currently have street sweeping programs and they should be revised to protect water quality and coordinate with other stormwater control practices.

E. Develop Residential Curbside Leaf Collection Program

Municipal residential curbside leaf collection programs (either single or joint)

should be developed. Leaf collection programs should consider street sweeping schedules and focus on timing beneficial to stormwater quality. Leaf collection programs exist in Cortlandt, the Village of Ossining, Croton-on-Hudson and the Town of Ossining.

F. Create Storm Water Utility Districts

A stormwater utility district could be created to generate funding specifically for stormwater management. Currently under NYS law a stormwater utility district can be formed as a drainage district where property owners within the district pay a stormwater fee, and the revenue thus generated directly supports construction, maintenance and upgrade of storm drain systems.

Recommendation 4:

Develop Snow and Ice Operational Plan

Snow and ice operational plans should be developed for each municipality. Plans should specify the type of highway deicing equipment used, the source and storage of materials and the application and calibration methods used for deicing materials. Cortlandt and Croton-on-Hudson have road salt management programs.

Recommendation 5:

Participate in Household Hazardous Waste Collection

All municipalities should continue to participate and inform residents of the Westchester County Household Hazardous Waste Collection Days. The Westchester County Department of Environmental Facilities runs the program and collections occur four times a year.

Recommendation 6:

Pretreat Stormwater Outfall Discharges and Identify Retrofit Opportunities

Currently untreated stormwater outfalls flow directly into streams and waterbodies

Figure 3-5. Hazardous Waste Collection

Images from www.epa.gov

of the watershed. Funding should be sought by municipalities to pre-treat the stormwater prior to discharging it into the streams and waterbodies. The following problem areas have been identified for stormwater retrofits:

- **Route 9/9A:** Currently, all stormwater runoff from Route 9/9A drains directly from the roadways into the Croton Bay. Route 9/9A is a four-lane heavily traveled highway and is the only north-south truck route along the Hudson River in

Figure 3-6. Snow and Operational Plans

Snow and Ice Operational Plans should include:

- Make all material storage facilities permanent structures and fully enclose them.
- Mix handle and load all winter materials in covered areas.
- Install drainage and stormwater collection systems around the perimeter of storage areas to prevent salt and sediment loss to groundwater aquifers or nearby waterways.
- Wash salt trucks in designated areas designed to collect all resulting runoff.
- Remove spilled salts and excess materials remaining in trucks, yards or on roads after every storm.
- Routine calibration of spreading equipment should be conducted throughout the winter season.
- Coordination of snow and ice removal with maintenance of the stormwater conveyance system (i.e. street sweeping and stormwater/catch basin cleaning).
- Explore new technologies as made available.
- Plans should include specific procedures for handling and storing road sand and salt. Proper containment of road sand and salt is imperative for water quality protection.

Current Salt Storage Facility for the Town of Ossining, NY

Figure 3-7. Outfall on Quaker Bridge Road, Town of Cortlandt, New York

Westchester County. Untreated stormwater from this road obviously contributes to pollutants in the Croton Bay.

- **Outfalls to Croton Bay:** Located in the Town and Village of Ossining are outfalls that discharge directly into the Croton Bay. The stormwater is not pretreated and a majority of the time it is discharged onto steep slopes causing erosion. The high rate of erosion creates both structural instability of the slopes and increased sedimentation of the bay. Major areas of concern are St. Augustine's cemetery and the Mystic Point development.
- **Outfalls to Croton River:** Several outfalls discharge directly into the Croton River and upon investigation the stormwater did not appear to be pretreated. Often times the stormwater outfalls discharged onto steeply sloped areas, causing the slopes to erode. The high rates of erosion from the stormwater discharges lead to structural instability of the slopes and increased sedimentation of the River.
- **Croton-Harmon Metro-North Railroad Station:** The Croton-Harmon Metro-North railroad station and maintenance yard contains a very large parking lot with over 2,000 parking spaces that floods during heavy rains. Presently, stormwater runoff from the southern half of the rail yard discharges into the Croton Bay through an outfall pipe located at the southern end of the site. A retrofit project is currently underway that will replace the existing 54 inch storm drain pipes with 60 inch diameter pipes and install an oil/water separator to treat the runoff prior to discharge. Only the mid to southern portions of the rail yard will benefit from the oil/water separator. All runoff from the entire area of the Croton-Harmon parking lot should be treated.
- **Stormwater Sheet Flow:** Some residential districts in the watershed do no have stormwater infrastructure. Instead, sheet flow is the primary method of stormwater conveyance. Adequate pervious surfaces must be maintained in areas of sheet flow for stormwater to properly infiltrate. Inspections should be conducted to assure that

Figure 3-8. Croton-Harmon Metro-North Railroad Station Parking Lot

erosion is not occurring in areas where stormwater is directed with sheet flow, especially on existing roads. If upon inspection, erosion problems are discovered, action should be taken to rectify the situation with proper stormwater best management practices. Sheet flow towards the Croton River is an area of primary concern.

- **Shop Rite Shopping Center:** The Shop Rite Shopping Center located on Riverside Avenue in Croton-on-Hudson has a large parking lot that drains into catch basins during each rainstorm. Currently, onsite stormwater is not being treated in the privately owned parking lot. The existing storm drains from this shopping center run underneath Route 9/9A and discharge into the Croton Bay.

Recommendation 7:

Restore Eroded Streambanks

Tremendous erosion occurs along the streambanks of the Croton River, depositing soil and other pollutants into the Croton River and the Croton Bay. The erosion often results from unstable outfalls which discharge directly onto the steep slopes. Further studies should be conducted to find the areas of severe erosion and funding should be sought to restore these areas. Municipal highway staff should be trained in proper methods of repair that minimize erosion of drainage swales located adjacent to roads.

Figure 3-9. Eroded streambank on Quaker Bridge Road, Cortlandt

Road runoff in Cortlandt, especially along Quaker Bridge Road, commonly discharges into roadside swales. When roadside swales are poorly designed or maintained they can cause structural instability of the sides of roads and an increase in sedimentation of the receiving waterbody. Roadside swales, however, can be an effective method to control stormwater runoff flow if properly constructed and protected by vegetation or riprap.

3.3 Goal: Promote Sustainable Development Through Land Use and Environmental Regulations

Each land use in the Croton Bay Watershed, in one way or another, contributes nonpoint source pollution to the watershed through activities occurring on the land and through the amount of impervious surfaces that exist. Over 50% of the watershed is currently residential. Many existing residential areas are considered underdeveloped according to local zoning. Eleven percent of the watershed is undeveloped land. The following section provides recommendations aimed at reducing the impact of existing and future land uses on water quality. Municipalities should review land development regulations and identify sections that may need amending to incorporate low-impact development standards but continue to address concerns of public health and safety.

Recommendation 1:

Institute Stormwater Controls for Development

Stormwater best management practices and specific site plan requirements should

be developed and applied to land development applications for the purpose of protecting water quality in each of the Croton Bay municipalities.

Recommendation 2:

Establish Impervious Surface Limits and Alternatives

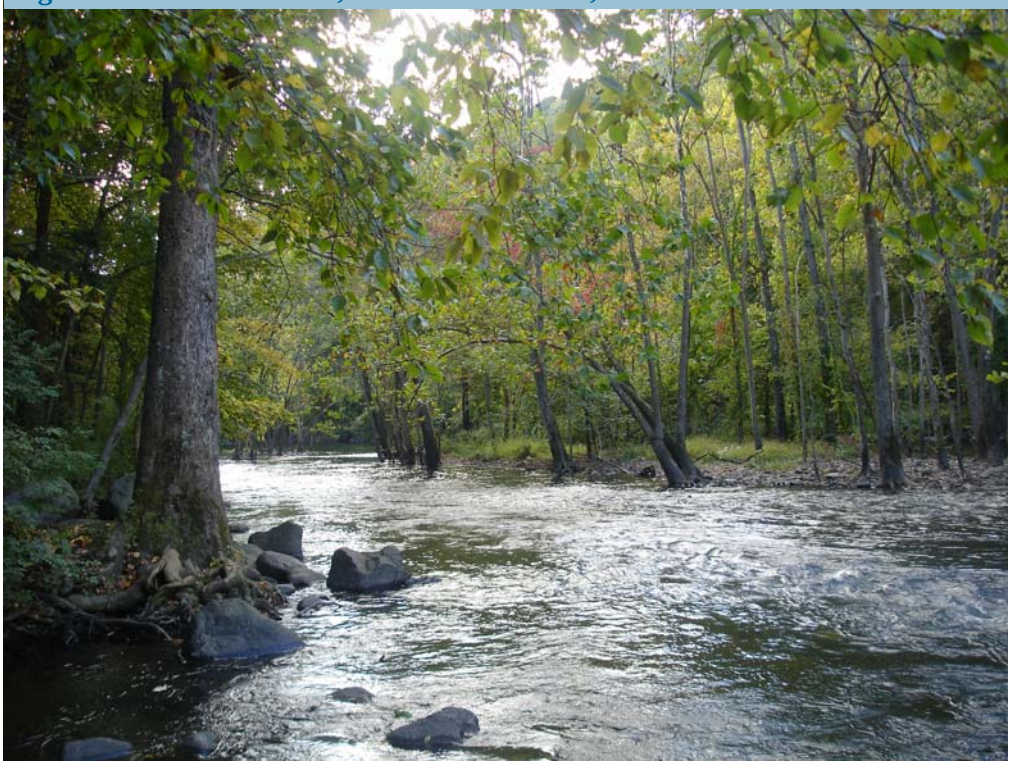
Land use regulations should be modified to set maximum limits on the amount of impervious lot coverage including all impervious surfaces such as driveways, patios and pools. Regulations should encourage alternatives to impervious surfaces such as pervious pavement, open pavers and gravel.

Recommendation 3:

Establish an Indian Brook Reservoir Overlay Zone

A majority of the land surrounding the Indian Brook Reservoir and the tributaries flowing into the reservoir is currently underdeveloped. If fully developed, the Indian Brook Reservoir could become increasingly threatened by nonpoint source pollution. Additional development could have an adverse effect on the water quality of Indian Brook Reservoir, especially if certain stormwater management practices are not instituted. In an effort to protect water quality in the Reservoir, an overlay zone should be implemented to limit impervious coverage, establish buffers, prevent steep slope development and protect environmentally sensitive areas surrounding the Reservoir. Currently, New Castle has established an overlay zone for this area to protect resources, but the restrictions are limited, pertaining mostly to wetland buffers.

Figure 3-10. Croton River, Croton-on-Hudson, NY



Recommendation 4:

Develop a Croton Aquifer Overlay Zone

The Village of Croton-on-Hudson relies on an aquifer to supply its drinking water and has a drinking water ordinance to protect this aquifer. The recharge areas for the aquifer go beyond the Village's political boundaries and management of the total aquifer recharge area is necessary. An overlay zone that follows the aquifer boundaries would further protect the recharge area of the Croton aquifer. The overlay zone should include provisions regarding impervious surface limitations and contaminants. Cortlandt and New Castle have attempted to provide some groundwater quality protection in the watershed through an overlay zone, but the current provisions do not provide adequate protection.

Recommendation 5:

Update Comprehensive Plans

Croton Bay Watershed municipalities should review and update their existing comprehensive plan to be consistent with the Indian Brook-Croton Gorge Watershed Plan.

Recommendation 6:

Protect Open Space

Each municipality should work to protect open space in the watershed for protection of water quality and biodiversity. Open space can be protected through acquisition, establishment of conservation easements and new zoning designations such as park and recreation zoning districts and protective overlay zones.

Open space protection plans should be prepared by each municipality in the watershed. The plans should establish criteria for evaluating the value of parcels for open space protection in terms of potential water quality impacts and preservation of community character. Environmentally sensitive areas and areas that will connect with other open space parcels should be a high priority for open space preservation to better protect the environment and biodiversity corridors. Properties should be identified for protection as permanent open space.

Preservation of undeveloped land as open space should be considered, particularly in areas with environmentally sensitive resources. Consideration should be given to purchasing land through land trusts, dedicated revenue sources and purchasing development rights.

Federal, State and local sources of funding for open space protection exist. Municipalities should seek partnerships with NYCDEP, Westchester County, New York State, land trusts and others to assist in securing grants and funding for the preservation of open space.

Recommendation 7:

Adopt New or Amend Current Ordinances to Reflect Model Environmental Ordinances

Water quality regulations may be the single most important tool available to a community to protect its natural resources and wildlife. As part of the Indian Brook-Croton Gorge Watershed Plan, an ordinance review was conducted for each municipality and recommendations were made to ensure that local ordinances help protect water quality. The Croton Bay Watershed ordinance review can be found in Supplement A: Additional Resources.

All municipalities should seek to adopt or amend the recommendations found within the ordinance review which include recommendations for the following environmental areas:

- Drinking Water
- Wetlands and Watercourses
- Erosion and Sediment Control (including Steep Slopes)
- Stormwater
- Trees and Vegetation
- Refuse Management
- Site Design

3.4 Goal: Preserve and Protect Wildlife and Significant Wildlife Habitats

Steps must be taken on a watershed level to help preserve and restore the existing habitats thus preserving plant and animal diversity in the watershed. The following recommendations concern the preservation and restoration of biodiversity in relation to information found in Section 2.6 *Existing Conditions: Wildlife and Significant Wildlife Habitats*.

Figure 3-11. Woods in Croton

Recommendation 1:

Prepare a Biodiversity Plan for the Watershed

The study area included in the *Croton to Highlands Biodiversity Plan* includes sections of the Croton Bay Watershed in Cortlandt and New Castle. A similar biodiversity plan inventory and study should be conducted to expand the *Croton to Highlands Biodiversity Plan* study area to include the entire Croton Bay Watershed. Sources of funding should be sought to support this expanded study. In addition, the Croton Bay Watershed municipalities should seek funding sources and support

for implementation of recommendations in the *Croton to Highlands Biodiversity Plan* and future recommendations that would result from other biodiversity studies in the watershed.

Recommendation 2:

Investigate Croton River Flow Fluctuations

The Croton River's complex system of flow is influenced by sheet flow, storm drain outfalls and releases from the New Croton Dam. Further investigation should be conducted to determine how the current flow affects wildlife in the river corridor and if changes could occur to help protect biodiversity in the watershed.

3.5 Goal: Educate the Public

Education and outreach is a very important component of any watershed plan. Without the support of local government, organizations and residents, the goals of any watershed plan would be difficult to accomplish. Watershed citizen education includes illustrating the connection between everyday activities and its impact on water quality. The education of local officials who create and administer regulations, permits and policies is also important. The following recommendations relate to education, outreach and public involvement programs that the watershed municipalities should undertake to protect water quality.

Recommendation 1:

Require Board/Committee Member Training

Legislation should be adopted at the local level to set minimum annual stormwater training/education requirements for planning, zoning and conservation boards.

Recommendation 2:

Develop an Education and Training Program for Highway Personnel

An education and training program should be developed on a watershed-wide basis for highway personnel providing up-to-date information on stormwater management functions including roadside swale maintenance, winter material calibration, material handling and facility cleaning.

Recommendation 3:

Develop and Participate in Community Natural Resource Education

A. Develop Regional Outreach and Education, Public Participation and Involvement Plan

Many residents are not familiar with the natural resources found in the Croton Bay Watershed. Individual homeowners should be educated to understand the connection between the resources and the residents living in the local communities. Homeowners should also be educated about techniques that reduce the adverse impact of house maintenance activities on water quality. House maintenance activi-

ties include snow removal and deicing, fertilizer and pesticides application, lawn mowing and fall leaf cleanup.

Croton Bay Watershed municipalities should continue to actively participate in Westchester County's EPA Phase II Stormwater Regulations Public Education and Outreach Program. Twenty-eight other Westchester County municipalities are participating in this program.

B. Participate in the Westchester County Citizens' Volunteer Monitoring Program

The Westchester County Citizens' Volunteer Monitoring Program (CVMP) involves gathering and sharing information on the health of streams and waterbodies. Volunteers attend a training session where they: 1) learn about the physical (general appearance), chemical (pH, conductivity, etc.) and biological (critters) characteristics of streams and waterbodies, 2) form a monitoring team and 3) receive equipment to begin monitoring a specific stream area. All data is entered into a centralized database. The data, along with the tools to create charts, graphs and run statistical analysis, is accessible to anyone with internet access. Each Croton Bay municipality should have a team monitoring at least one location in their municipality.

3.6 Implementation of Watershed Plan Through Intermunicipal Cooperation

1. Create an Intermunicipal Agreement for Plan Implementation

Water flows across tax parcels, zoning districts and political boundaries. Municipalities should coordinate decisions and activities that affect water resources as much as possible. For projects that impact one or more communities, both upstream and downstream within a shared sub-basin, a coordinated review should be required among impacted communities. Project review should be applicable to new projects and to retrofit and maintenance projects as well. Project review may require joint planning or town board meetings to discuss development projects in neighboring communities.

Figure 3-12 on the following page outlines the recommendations that each individual municipality should focus on. The implementation of the recommendations when taken together creates a coordinated, comprehensive approach to protect natural resources within the Croton Bay Watershed.

Each community supported the grant application that was awarded to create an intermunicipal agreement (IMA) to coordinate the implementation of select recommendations found within the Indian Brook-Croton Gorge Watershed Conservation Action Plan. Creation of the IMA will begin in Spring 2007.

Figure 3-12. Table of Croton Bay Watershed Recommendations

	Cortlandt	Croton-on-Hudson	New Castle	Ossining (T)	Ossining (V)
3.1 Goal: Protect and Restore Natural Resources					
Recommendation 1: Conduct Stream-walks in the Croton Gorge Basin	◆	◆	◆	◆	
Recommendation 2: Remediate Identi-fied Problem Areas in the Indian Brook Basin	◆		◆	◆	◆
Recommendation 3: Protect Indian Brook Reservoir	◆	◆	◆	◆	◆
Recommendation 4: Protect Wetlands at the Local Level	◆	◆	◆	◆	◆
Recommendation 5: Restore Degraded Wetlands	◆	◆	◆	◆	◆
Recommendation 6: Ensure Proper Functioning of Septic Systems	◆	◆	◆	◆	
Recommendation 7: Monitor the Cro-ton River	◆	◆			
Recommendation 8: Prevent Illegal Activities that Degrade Water Quality	◆	◆	◆	◆	◆
3.2 Goal: Develop and Implement Stormwater Management Practices that will Improve Water Quality					
Recommendation 1: Develop and Adopt Stormwater Infrastructure Data Man-agement Standards	◆	◆	◆	◆	◆
Recommendation 2: Establish Illicit Discharge Connection Program	◆	◆	◆	◆	◆
Recommendation 3: Develop Stormwa-ter Infrastructure Monitoring and Maintenance Programs	◆	◆	◆	◆	◆
Recommendation 4: Develop Snow and Ice Operational Plan	◆	◆	◆	◆	◆
Recommendation 5: Participate in Household Hazardous waste Collection	◆	◆	◆	◆	◆
Recommendation 6: Pretreat Stormwa-ter Outfall Discharges and Identify Ret-rofit Opportunities	◆	◆	◆	◆	◆
Recommendation 7: Restore Eroded Streambanks	◆	◆		◆	◆

Figure 3-12. Table of Croton Bay Watershed Recommendations, cont.

	Cortlandt	Croton-on-Hudson	New Castle	Ossining (T)	Ossining (V)
3.3 Goal: Promote Sustainable Development Through Land Use and Environmental Regulations					
Recommendation 1: Institute Stormwater Controls for Development	◆	◆	◆	◆	◆
Recommendation 2: Establish Impervious Surface Limits and Alternatives	◆	◆	◆	◆	
Recommendation 3: Establish Indian Brook Reservoir Overlay Zone	◆		◆	◆	◆
Recommendation 4: Develop a Croton Aquifer Overlay Zone	◆	◆			
Recommendation 5: Update Comprehensive Plans	◆	◆	◆	◆	◆
Recommendation 6: Protect Open Space	◆	◆	◆	◆	◆
Recommendation 7: Adopt New or Amend Current Ordinances to Reflect Model Environmental Ordinances	◆	◆	◆	◆	◆
3.4 Goal: Preserve and Protect Wildlife and Significant Wildlife Habitats					
Recommendation 1: Prepare a Biodiversity Plan for the Watershed	◆	◆	◆	◆	◆
Recommendation 2: Investigate Croton River Flow Fluctuations	◆	◆	◆	◆	
3.5 Goal: Educate the Public					
Recommendation 1: Require Board/ Committee Member Training	◆	◆	◆	◆	◆
Recommendation 2: Develop an Education and Training Program for Highway Personnel	◆	◆	◆	◆	◆
Recommendation 3: Develop and Participate in Community Natural Resource Education Programs	◆	◆	◆	◆	◆