



# Croton Watershed Clean Water Coalition



Issue 47  
SEPTEMBER  
OCTOBER  
2008

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## An Inexplicable Omission in Drinking Water and Air Quality Protection

Why is it that trees and forests don't receive the same degree of protection as do wetlands at the municipal, state and federal levels since they provide best water quality, best air quality, stabilize erosion, and protect critical habitat for life sustaining wildlife?



Marian Rose  
President Emeritus

For example, here in the East of Hudson Watershed, there is nothing in the local Town Codes to prevent thousands of trees from being destroyed. Examples are the proposed "Patterson Crossing" development in Patterson/Kent where

Ever since wetlands were recognized for providing flood control, the filtration and uptake of pollutants, the recharge of groundwater, valuable wildlife habitat, recreational and scientific research value, among other attributes, they have received protection at the federal level, most state levels and, in many instances, down to the municipal level.

60 out of the 90 acres of thick forest comprising thousands of trees is to be replaced by a shopping mall; 875 trees to be destroyed at Seven Springs in Bedford to make way for seven macmansions and an equestrian facility; 1,827 trees to be cut down and replaced by 65 condominium units at the Salem Hunt development in North Salem. Thousands of trees have also been sacrificed to make way for golf courses that depend on the heavy use of pesticides, fertilizers and herbicides. In both cases, the beneficial qualities of the trees are lost and, adding insult to injury, their land-use replacements are extremely detrimental to water quality.

Wetlands are considered a public benefit. A property owner whose property encompasses, even in part, a federal, state or municipally regulated wetland is constrained from impacting that wetland or its buffer unless a permit is obtained from the regulatory authority.

Forests provide the same "services" as wetlands - and more. Those that are federally or state-owned receive varying degrees of protection. But that protection goes no further. At the municipal level, the regulations, if they do exist, are mostly ineffective in preventing the wholesale destruction of large numbers of local trees.

Another concern is the correlation of the destruction of trees with the increase in global warming. Depending on their size, species and degree of maturity among

(cont'd on page 2)



Stream Monitoring In The Beautiful Croton Watershed  
Photo credit - Carlos Espiritu

other factors, trees can be effective absorbers of carbon dioxide, a principal global warming gas, as well as emitters of oxygen. Both these beneficial qualities are lost when trees are cut down.

wildlife

- \* Forests clean the air
- \* Forests protect our drinking water supplies
- \* Forested watersheds are important to people

### THE "SERVICES" PROVIDED BY FORESTS AND TREES

#### Water Quality

The beneficial functions of trees and forests are well summed up at the US Department of Agriculture (USDA) Forest Service Northeastern Area (NA) website (<http://www.na.fs.fed.us/watershed/index.shtm>):

"Trees and forests are critical to the health and proper function of watersheds. Studies clearly show that the amount of forest in a watershed, especially those forests bordering streams and shorelines, is an important determinant of water quality and the health of aquatic ecosystems."

Clean water is one of our most important and valuable forest products. In urban areas, trees and forests reduce storm water runoff, cool the air, and provide critical refuge for fish and wildlife. Forests also help clean the air we breathe. In rural areas, forests protect municipal water supplies, reduce flooding, replenish groundwater aquifers, provide recreation and critical fish and wildlife habitat, and yield numerous wood products. By filtering pollutants from air and water, storing water and nutrients, protecting soils, flood plains, and streams and providing aesthetic and other human needs, forests bring significant benefits to our lands, waters and communities. People depend on healthy and well-managed forest lands. Over 50 million people depend on northeastern forests, in part, to protect their water supplies. Forests supply a wide range of goods and services we use every day while also making up important "green infrastructure" in our communities, enhancing our health and our quality of life.

#### Forests matter because:

- \* Forests are the best land use for sustaining water quality
- \* Forests maintain the stability of streams and watersheds
- \* Forests provide critical habitat for fish and

**According to the American Forests organization, a healthy tree canopy can tremendously reduce stormwater runoff, saving its host city millions of dollars in infrastructure costs...**

A joint research report by the World Bank and the World Wildlife Fund for Forest Conservation and Sustainable Use, *Running Pure: The Importance of Forest Protected Areas to Drinking Water*, August 2003 states: "The city of New York is famous for its use of protected forests to maintain its high quality water supply..."

According to David Cassells, a senior environmental specialist at The World Bank: "For many cities, time is running out. Protecting forests around water catchment areas is no longer a luxury but a necessity. When the forests are gone, the costs of providing clean and safe drinking water to urban areas will increase dramatically."

A 1/8/03 article in the NY Times, by Mike Dombeck, chief of the US Forest Service from 1997 to 2001, entitled *The Forgotten Forest Product: Water*, clearly states the argument for forest protection. "...water is perhaps the most important forest product. Forests generate most of the water in the country, providing two thirds of all the precipitation runoff - the water that comes from the sky - in the 48 contiguous states....How do forests produce water? The complex array of trees, shrubs, groundcover and roots slows runoff from rain and snow, and water is purified as it percolates through the soil and into aquifers. By slowing runoff, forests also reduce floods and erosion, minimizing the sediment entering streams and rivers. Mature forests do their work best (emphasis added). They have the best soil and their mixed canopy - a mosaic of open and closed spots among the treetops - allows for snowfall accumulation and eventual runoff. Old trees use less water for growth than young trees do. And as intact forests (emphasis added) better regulate water chemistry and temperatures, they enhance habitat for aquatic species (In many streams this means better recreational opportunities such as trout fishing)...New York City has some of the best water in the world because it maintains healthy forests in its Catskill, Delaware and

Croton watershed system..."

*According to the American Forests organization (www.americanforests.org), a healthy tree canopy can tremendously reduce stormwater runoff, saving its host city millions of dollars in infrastructure costs... The Windows-compatible CITYgreen software offers modeling capabilities that allow users to compare economic benefits of various site plans by analyzing a site's ecosystem and producing data on a number of factors: stormwater runoff, air quality, summer energy savings, carbon storage/-avoidance, and tree growth... The software compares land cover, the soil complex, and ratio of rainfall to determine projected runoff. In general, the thicker the vegetation on a site, the more the water is inhibited (emphasis added)."*

"Finally, it is important to mention that forests, especially well managed forests, are a key element in any state, local, or federal water quality protection program. Forests and forested land, whether in a rural setting, along streams on agricultural land, intermixed with other land uses in suburban settings, or in urban locations, are natural filters for storm water runoff and one of the least expensive and most effective means of protecting water quality. It is the hope of EPA that the management measures and BMPs contained in this guidance, and the suggestions for their implementation, will help all persons involved with forestry activities and forest management to maintain the quality of the Nation's surface and groundwaters" (National Management Measures to Control Nonpoint

Source Pollution from Forestry, <http://www.epa.gov/owow/NPS/forestrygmt>).

#### **Air Quality**

Researchers with the British Medical Journal, in a publication in the Journal of Epidemiology and Community Health found that four- and five-year-olds, living on tree-lined streets in New York City, had lower asthma rates than those who did not. "The benefit of trees was felt regardless of proximity to pollution sources, family income or population density.

Unfortunately, the study found no benefit to older children." (<http://www.thedailygreen.com/environmental-news/latest/asthma-trees-47050102>)

Forests are also effective carbon sinks, critical to diminishing global warming. A large tree, on an annual basis, can provide the following benefits (From the Center for Urban Forest Research, Pacific Southwest Research Station, USDA Forest Service, Davis, California):

- \* Absorb 10 lbs of air pollutants, including
- \* 4 lbs of ozone and 3 lbs of particulates.
- \* Clean 330 lbs of CO2 from the atmosphere.

**According to David Cassells, a senior environmental specialist at The World Bank: "For many cities, time is running out. Protecting forests around water catchment areas is no longer a luxury but a necessity. When the forests are gone, the costs of providing clean and safe drinking water to urban areas will increase dramatically."**

The U.S. Forest Service estimates that all the forests in the United States combined sequestered a net of approximately 309 million tons of carbon per year from 1952 to 1992, offsetting approximately 25% of U.S. human-caused emissions of carbon during that period.

**Sierra Club, Lower Hudson Group is unified with CWCWC that there is need for legislation to protect trees and has generously given a second contribution to us toward our efforts to enact such legislation. We thank them enormously not only for their support but for their environmental astuteness in recognizing, advocating and initiating important action for saving trees.**



According to the US Department of Agriculture (USDA): "Two mature trees can provide enough oxygen for a family of four. A mature tree produces nearly 260 pounds of oxygen each year."

Another study by the USDA showed that trees in NYC alone removed 1,800 metric tons per year, in addition to providing shade and decreasing the need for energy use in air conditioning.

Scientists and environmental advocates for years have urged that nations be held accountable for the irresponsible destruction of forests.

In a paper published in December 2001 by the National Academy of Sciences of the USA, an international team of scientists mapped, via satellite images, vast areas of forests anywhere in the world. In particular, the images for the northernmost forests taken by the U.S. National Oceanic and Atmospheric Administration (NOAA) showed that the United States, Europe and Russia, between 1981 and 1999 "stored about 700 million tons of carbon, taken in by trees as carbon dioxide, each year during that period. That means they absorbed about 12 percent of all carbon dioxide created annually by the burning of fossil fuels and other industrial activities. American forests stored 140 million tons of carbon, representing 11 percent of the nation's carbon dioxide emissions." (quote from a 2001 article by the State University of New York's College of Environmental Science and Forestry entitled "The Right Mix of Trees Fights Global Warming")

### **FUTURE ACTION**

Federal and State regulations that enable local municipalities to protect their trees and forests are long overdue. Like wetlands, trees and forests are essential for the common good. And, like wetlands, they should be protected.

Legislation to reflect local conditions such as the types of trees, their size and maturity, the local soils and slopes, the size of the forested area, the location of the forest relative to streams and reservoirs, etc. should be introduced at the state level without further delay.

CWCWC is presently consulting with experts in order to create a solid scientific basis for future legislation.

We are looking for partners to help us pass this long overdue legislation.

Please be an important part of the solution by calling CWCWC at 914 234-6470, or 914 234-3179.



Stream Monitoring In The Beautiful Croton Watershed  
Photo credit – Carlos Espiritu

**Croton Watershed Clean Water Coalition, Inc.**

Hosts a

**General Membership meeting  
with refreshments**

**6:00 PM on Tuesday, September 23, 2008**

**601 West 136th Street, Main floor of HDFC**

7:00 pm Guest Speaker Elizabeth Royte,

Author of "Bottlemania"

**Commodification and Plastic vs Clean and  
Affordable Water followed by Open  
discussion of Croton Watershed Issues**

Directions: #1 subway to 137th Station, M4, M5

or

M11 bus on Broadway to West 135th or West 137th Street,  
or M101, M102 on Amsterdam to West 135th or West 137th Street.

***ALL ARE WELCOME!***

Please RSVP to (914) 234-6470 or [CrotonWshed@aol.com](mailto:CrotonWshed@aol.com)

# Westchester County Taking Lead On Septic Management

Hon. Peter Harcckham, 2nd LD  
Chair, Septic Sub Committee,  
Committee on Environment and Energy  
Committee on Environment and Energy

With an estimated 40,000 - 45,000 septic systems in Westchester County (approximately 30,000 of them in the Croton Watershed) and an estimated 80,000 Westchester County residents who get their drinking water from ground water sources, both the Westchester County Board of Legislators and the Administration of Westchester County Executive Andy Spano take the issue of septic management very seriously and are moving aggressively on several fronts to address this issue.

Nothing better highlights this commitment than the formation this year of the Board of Legislators Septic Sub Committee, which I Chair, of the Committee on Environment and Energy. It represents an innovative leap forward in public policy formulation in that for the first time, all of the key stakeholders in the septic management discussion are represented on the committee in order to build consensus from the ground up. Our primary focus is the formulation of comprehensive septic management policy.

In addition to my Board colleagues Mike Kaplowitz and John Nonna, members of the Septic Sub Committee include senior staff of the Spano Administration, the County Health Department, the County Planning Department, Town Board members, the Chair of the Northern Westchester Watershed Committee, representatives of the construction industry as well as the Environment Committee of the League of Women Voters. NYC DEP, NYS DOC and DOS, as well as our colleagues in

Putnam County, have also joined forces with us.

Formulating comprehensive septic policy is complex because it encompasses many government entities including individual Towns, the County, New York State and New York City.

Other issues involve individual property rights and balancing the cost to tax payers. Additionally, the new NYS DEC MS4 requirements, just issued this spring - not in 2006 as was reported in your last issue - present challenges and opportunities to achieving this goal. The new MS4's do stipulate mandatory septic pump out and inspection for towns in Westchester that lie in the watershed, but the requirements do not specify compliance. Our Sub Committee is taking the lead in the negotiations with our partners at DEC and the local Towns to formulate comprehensive septic policy that satisfies the new requirements and balances both the cost to tax payers as well as the responsibilities of the Towns and County governments.

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This year Westchester County implemented a law requiring septic pumpers to report data to a centralized reporting system detailing conditions of the pump out. If the conditions of the report warrant, the County Health Department will then dispatch trained sanitarians for a further inspection and steps for remediation will be taken if needed. The County also recently passed legislation that will reimburse septic owners who reside in sewer districts, and have

**Impact Fees in NY - Their time has come.**

**Visit [www.newyorkwater.org](http://www.newyorkwater.org), Issues**

[http://www.newyorkwater.org/?Page=ISSUES&homePage=issues\\_home](http://www.newyorkwater.org/?Page=ISSUES&homePage=issues_home)



paid sewer taxes, for two pump outs and one comprehensive inspection over a six-year period. In 2007, the County adopted a law specifying time-of-sale well testing to ensure the safety of localized groundwater sources.

Further, this year the Board of Legislators appropriated funds for countywide septic education. In order to implement this program, a centralized database of all septic properties needs to be developed from County and Town records. Currently, the Administration, in conjunction with the Department of Health and the Department of GIS Mapping, is developing an exciting proposal for a centralized, online database that will plot all septic systems by both mailing address and tax lot ID number. This data will be plotted on GIS maps and will also include pump out report data, historical as-built schematics and can also be cross-referenced to well test data to identify possible threats to groundwater sources. Once implemented, this database will enable countywide septic education, empower and assist local municipalities in MS4 compliance and will drastically cut the research time for local

building inspectors and contractors on viewing as-built schematics.

Currently, the County Board of Health, in conjunction with the Department of Health, is working to amend the Sanitary Code to clarify and strengthen septic regulations in the code. To their credit, the Board of Health held three public hearings, two in northern Westchester, and has incorporated the concerns of the real estate community into revised language to both address environmental concerns and to ease ambiguity in the code.

Finally, we are working with our partners in the septic pumping industry to help them to better address septic management issues. In addition to the new reporting law mentioned above, Westchester has extended weekend summer hours at the Hawthorne manhole. Working with the Administration, the Department of Environmental Facilities and the Board of Legislators Committee on Government Operations, the County is developing an online payment system as well as examining a flow monitoring system at the manhole so haulers would only have to pay for an exact load, not a full truck as is currently the practice.

While there is still more work to be done to achieve our objective of comprehensive septic management, Westchester County, along with our strategic partners, is working energetically towards this goal. If any of your readers wish to receive updates from the BOL Septic Sub Committee, please contact Wendy Wild at [wendyw@westchesterlegislators.com](mailto:wendyw@westchesterlegislators.com) and ask to be added to the distribution list.



# OUT AND ABOUT IN THE BEAUTIFUL CROTON WATERSHED

*Fay Muir, President*



After much thoughtful planning, CWCWC took a group of teens on an introductory tour of the Croton Watershed. These participants were a very special delegation representing The Greening Project, a joint effort of The City of White Plains and Cornell University Extension. CWCWC was represented by president Fay Muir and president emeritus Marian Rose. We met the group at Ward Pound Ridge Reservation and our first stop was at its museum. There was much enthusiasm for the exhibits of native wildlife and local open space. CWCWC explained the watershed history of the region, the importance of the amazing variety of flora and fauna – especially trees – and how vital their preservation was to good water quality. This was followed by a short visit to the stream close by and the wigwam built by volunteers in 2002. We were then met by Paul Theising of the NYC Department of Environmental Protection (DEP) who led us through the watershed to the Croton Dam, passing over the Cross River reservoirs, Diverting and New Croton. He gave us a brief talk and some seeds after which some of the more intrepid of the group climbed down from the New Croton Dam itself to the Croton Dam Plaza below. Paul captured a mature damselfly with which we were all fascinated by its beauty and function as a harbinger of the purity of the Croton River.

This tour was enjoyed immensely by all and CWCWC made arrangements to meet again with the group. This second trip was to show one of the ways CWCWC operates to ensure the watershed remains viable for future generations. We came prepared with lots of equipment to measure stream quality and our plan was to test the Beaver Dam Brook above and below the waste water treatment plant (WWTP) of the Bedford Correctional facility. On this trip Marian Rose and I had the assistance of Susan Leifer of the Lower Hudson Group of Sierra Club and Carlos Espiritu of the Bronx.

Our rambunctious group quickly donned waders and were into the stream before we could explain proper scientific procedures. But before long all were distributed into two teams (one for upstream of the WWTP and the other below) properly instructed to survey the surrounding area, test the temperature, dissolved oxygen, and benthic macroinvertebrates (bottom dwellers). In addition, we profiled the width, depth and riparian areas as well as measure stream velocity. After we had collected our benthic samples it was obvious that the upstream water contained more bottom dwellers (indicators of purity) and the downstream sample had more and larger crayfish (indicators more tolerant of pollutants). We all learned much from each other and had a wonderful time.



Many thanks to The Greening Project for the terrific work they do in restoration of watershed lands and for their interest in our organization and the work we do. CWCWC looks forward to more joint efforts in watershed protection with you.

If readers have a group that would like to join us in similar activities, contact us to make arrangements.



# Peach Lake Stormwater Report

By Suzannah Glidden

A Peach Lake Stormwater Pollution Study funded by USEPA and begun in 2003 was completed this year by Hahn Engineering. The first part of the study analyzed the drainage characteristics and land use within the watershed, divided the land into many sub-basins, and presented a preliminary hydrological analysis of the drainage sub-basins. The second part identified areas of potential pollution loading to the lake from various stormwater sources. The third part presents alternative stormwater management plans to reduce the input of phosphorus pollution, the contaminant of greatest concern. Nitrogen and suspended solids were also examined.



Hahn recommends that an additional study be conducted of the hydraulics of Peach Lake's northern egress, Peach Brook, to make sure that the slight downward grade of the brook through Cedar Swamp to East Branch Reservoir will accommodate the proposed sewage treatment plant flows and that they won't adversely impact the lake.

Amongst the worst concentration of phosphorus, the nitrogen and phosphorus loading from low-lying and faulty septic systems and holding tanks will be resolved when sewered next year.

Additionally, east of Route 121 are 2 large horse farms and an equestrian hospital which are causing high manure load to the lake through Peitsch Canal. For several years, a fertilizer business was allowed to operate that took manure from the stalls of one of the horse farms, added saw dust to absorb liquid, and stacked it in 15-foot high piles in the wetland that flows to the Canal. Instead of removing the piles, it appears they were merely spread by bulldozer over the acre of wetland.

Not mentioned in the report is an issue Hands Across the Border has raised for several years: the silt-and-lily-pod-clogged northern end of Peach Lake. This build-up has caused elevated lake levels for the past several years as well as flooded Peach Brook yet the problem remains unaddressed. The northern flow in the lake carries silt to the exiting north end in addition to what flows down from roads and hills at north end. An analysis was expected of dredging, whether the material is toxic or not, where it would be dumped, which permits needed, and what costs are entailed.

A number of stormwater management devices were proposed in Hahn's study that include the inexpensive solution of lakefront owners restoring the all-important

aquatic buffer zone between lawn and water's edge by letting the grasses, wildflowers and sedges grow high with a narrow cut passageway to the lake. Presently, lakefront lawns are mowed to the lake's edge. A vegetated buffer also deters Canadian Geese from loitering on the lawn. Emergent vegetation like bulrushes and cattails reduce shoreline erosion caused by wind and boat traffic. Buffers help prevent lawn fertilizers and herbicides from reaching the lake. They purify the lake water by removing contaminants

and by calming the water which allows suspended soil particles to settle to the lake's bottom. An incentive of a property tax break could be offered to buffer friendly landowners.

Other alternatives Hahn presented were stormwater ponds, stormwater wetlands, infiltration systems, filtration systems and underground structural treatment systems such as high-end, expensive, engineered Vortech systems. Most of these treatments require careful maintenance. Hahn also recommends education for lake and sub-basin residents including the three surrounding golf courses that have high nutrient concentrations. Raising awareness of water quality issues including the use of detergents as well as fertilizers, changing

residential behaviors and practicing better stewardship are the aims. CWCWC recommends a fertilizer ban in watersheds which is impossible to impose on golf courses.

The stormwater pollution management plan presented by Hahn includes a combination of treatment systems. The identified areas can be retrofitted with Hahn's recommendations that are also considered best management practices (BMPs). Some may require wetland permits, property takings or easements. In addition to retrofitted BMPs, the quality of stormwater entering the lake will be improved by the new DEC MS4 stormwater regulations.

North Salem Supervisor Paul Greenwood explains that grant monies have been secured to cover a good deal of MS4 stormwater remediation in town. Peach Lake residents hope that their stormwater corrections will be funded by those grant monies rather than having to bear additional financial cost on top of new-to-come sewer costs of \$1200 a year per residence. It is also hoped that if dredging is addressed in the future, new grant money may be secured to study and pay for it.

***“...the inexpensive solution of lakefront owners restoring the all-important aquatic buffer zone between lawn and water's edge by letting the grasses, wildflowers and sedges grow high with a narrow cut passageway to the lake.”***

The Croton Watershed Clean Water Coalition strives to protect and improve the waters of New York City's Croton Watershed, a critical component of the water supply for over half the population of New York State. We are an alliance of individuals and groups who believe that safe, clean and affordable drinking water is a basic human right.

Send in your membership and receive membership mailings and a subscription to CWCWC newsletter "Our Water, Our Future." Most importantly, your membership will help you get involved with the preservation of one of our most precious resources, our water.

### Croton Watershed Clean Water Coalition Membership Application

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Email: \_\_\_\_\_

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|---|-----------|--|-----------|
| <input type="checkbox"/> Group/Coalition Membership | \$50/year | <input type="checkbox"/> Students/Seniors        | \$10/year |
| <input type="checkbox"/> Family Membership          | \$25/year | <input type="checkbox"/> Other                   | \$ _____  |
| <input type="checkbox"/> Individual Membership      | \$20/year | <input type="checkbox"/> Additional Contribution | \$ _____  |
| <input type="checkbox"/> Renewal                    |           | <input type="checkbox"/> New Membership          |           |

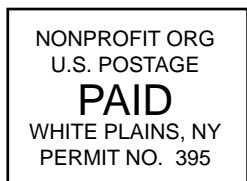
CWCWC, Inc. is a tax exempt, charitable organization under section 501 (c)(3) of the Internal Revenue Code. Your membership contribution is fully tax deductible.

Make checks payable to Croton Watershed Clean Water Coalition, Inc. and mail along with your membership form to:

Treasurer, CWCWC, Inc., PO Box 484, Bedford NY 10506



**Our Water, Our Future**  
Croton Watershed Clean  
Water Coalition, Inc.  
9 Old Corner Road  
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