



# THE HABITAT

Vol. XIX No. 2

Spring 2007

Editor: Tom Odell

## WITH SPRING COMES SPRAWL POLLUTION TO RIVERS

by Eric Hammerling

The pejorative term “sprawl” conjures up an image of cookie-cutter subdivisions marching inexorably over gentle hills that were once farms or forests. Many of us bemoan the changes that sprawl has wrought on our neighborhoods and towns — more paved areas, more traffic, more look-alike strip malls.

We rarely speak of what may be the most harmful aspect of sprawl, and that is how it affects our water supply.

What is happening isn’t hard to explain. Sprawling development is accompanied by an explosion of paved areas, which scientists call “impervious surfaces.” When rain falls or snow melts, the water runs off these impervious surfaces into storm drains and is conveyed directly into the nearest river, stream, or lake.

Stormwater, as this runoff is known, carries along whatever is in its path. That too often includes pet wastes; road sand and salt; oil, gas, heavy metals and other car-related pollutants; pesticides; and fertilizers and sediment from poorly-controlled construction sites. These pollutants, especially when combined with low water and warm temperatures, can spell serious trouble for the river or lake and the fish and the wildlife who depend upon it.

Because of this, stormwater is the largest unregulated threat to the quality of our rivers and streams, by consensus of the U.S. Environmental Protection Agency, state Department of Environmental Protection and local water quality advocates such as the Farmington River Watershed Association and Rivers Alliance of Connecticut. Nationally, 40 percent of our rivers, streams, and lakes are not meeting requirements

for swimming, fishing or drinking because of stormwater pollution. Because of stormwater pollution, the Connecticut Council on Environmental Quality has called sprawl the most serious environmental threat facing the state.

The amount of impervious surfaces in an area is linked to the ecological health of the surrounding watershed, according to the DEP’s Stormwater Quality Manual. Research has shown that when impervious cover in a watershed reaches between 10 and 25 percent, ecological stress becomes apparent. Beyond 25 percent, stream stability is reduced, habitat is lost, water quality becomes degraded and biological diversity decreases. It is unknown whether the health of rivers in areas that surpass 25 percent imperviousness can ever be restored.

Impervious surfaces also impact water resources in other ways. More impervious surfaces mean that less water can sink into the ground to recharge groundwater aquifers. Groundwater aquifers are the primary source of drinking water for approximately a third of Connecticut’s residents and provide base flow to local rivers and streams during dry times of the year. Also, when it rains or snow melts in an impervious area there is more run-off which moves faster and increases the incidences of local flash flooding.

Rivers, streams, lakes and estuaries are being impacted by stormwater resulting from sprawl. If we don’t halt this pernicious trend, we risk compromising our drinking water. If that isn’t a serious threat, I’m not sure I know what is. Correcting the problem will take both global and local action.

Sprawl continues, despite what seems to be near-universal opposition to it, for a number of reasons: Heavy reliance by towns on property taxes, underperforming big city schools, government subsidies for road-building, outdated local zoning and the simple resistance to change in our “land of steady habits.” It’s imperative that citizen action be focused on these problems, and in many towns it is.

*Sprawl, continued on page 2*

YOU HAD QUESTIONS -  
ATTORNEY JANET BROOKS  
HAS ANSWERS

SEE PAGE 3



**CACIWC**  
**Board of Directors**

**Officers**

TOM ODELL

**President**

ALAN SINISCALCHI

**Vice President**

JUAN A. SANCHEZ

**Secretary**

MARGIE PURNELL

**Treasurer**

**County**  
**Representatives**

LINDA BERGER

*Fairfield County*

VACANT

*Hartford County*

BOB FLANAGAN

*Litchfield County*

MARIANNE CORONA

*Middlesex County*

DIANA ROSS

*New Haven County*

MAUREEN FITZGERALD

*New London County*

RODNEY PARLEE

*Tolland County*

HOLLY DRINKUTH

*Windham County*

**Alternate County**  
**Representatives**

VACANT

*Fairfield County*

VACANT

*Hartford County*

VACANT

*Litchfield County*

VACANT

*Middlesex County*

VACANT

*New Haven County*

VACANT

*New London County*

ANN LETENDRE

*Tolland County*

VACANT

*Windham County*

DARCY WINTHER

**DEP Liaison**

ANN LETENDRE

**Executive Director**

*Sprawl, continued from page 1*

There are also ways to reduce the effects of stormwater in your yard or neighborhood. Just picking one or two of the following recommendations by the EPA's Office on Wetlands, Oceans, and Watersheds could make a difference in your community:

- Keep litter, pet wastes, leaves and debris out of street gutters and storm drains — these outlets drain directly to lake, streams, rivers, and wetlands.
- Apply lawn and garden chemicals sparingly and according to directions.
- Dispose of used oil, antifreeze, paints and other household chemicals properly, not in storm sewers or drains. If your community does not already have a program for collecting household hazardous wastes, ask your local government to establish one.
- Clean up spilled brake fluid, oil, grease and antifreeze. Do not hose them into the street where they can eventually reach local streams and lakes.
- Control soil erosion on your property by planting ground cover and stabilizing erosion-prone areas.
- Encourage local government officials to develop construction erosion/sediment control ordinances in your community.
- Have your septic system inspected and pumped, at a minimum, every 3-5 years so that it operates properly.
- Purchase household detergents and cleaners that are low in phosphorous to reduce the amount of nutrients discharged into lakes, streams and coastal waters.

With a grant from the Hartford Foundation for Public Giving, the Farmington River Watershed Association has been working with University of Connecticut scientists and officials from 11 towns in the Farmington Valley to reduce the problems associated with stormwater.

*Eric Hammerling is the executive director of the Farmington River Watershed Association. His office is in Simsbury.*

**INSIDE:**

- P. 3 Journey to the Legal Horizon
- P. 5 Protecting Connecticut's Grasslands
- P. 6 Alternative Treatment Systems
- P. 8 Bolton Conservation Commission Receives Award
- P. 8 Stream Walks & Stream Restoration Data
- P. 11 Open Space & Land Acquisition Program 2007
- P. 12 2007 Annual Meeting Announcement

*The Habitat* is the newsletter of the Connecticut Association of Conservation and Inland Wetlands Commissions (CACIWC). Materials from *The Habitat* may be reprinted with credit given. The content of *The Habitat* is solely the responsibility of CACIWC and is not influenced by sponsors or advertisers.

*The Habitat* welcomes articles and items, but will not be responsible for loss or damage. Correspondence to the editor, manuscripts, inquiries, etc. should be addressed to *The Habitat*, c/o Tom ODell, 9 Cherry St., Westbrook, CT 06498. Phone & fax 860.399.1807, or e-mail todell@snet.net.



## JOURNEY TO THE LEGAL HORIZON

by Janet Brooks

CACIWC's editor, Tom O'Dell, has supplied me with a series of questions that CACIWC received for my column. For those of you who know that I have two appeals pending in court on the agricultural exemption, no, I didn't plant the first question. But if you'd like to plant your question in the next issue (August/September 2007), e-mail your queries to Tom at [todell@snet.net](mailto:todell@snet.net).

### Question:

I am a new member of my town's IWC, and am having a great deal of problem wrestling with the real meaning of Section 4.1a of the regs - the whole "as of right" concept. Is there anything that is NOT allowed? Is it OK to clear-cut, to fill, to level, etc, without any regulation, or even a report? Some of our newer subdivisions have been divided so that nurseries can buy the "less desirable" pieces of land, as they know they can do whatever they want with them. They then water their stock daily with a high nitrogen fertilizer, which is going directly into the wetlands that are the beginnings of several watercourses. I am highly concerned about this, especially as there are rumors of more nurseries moving into the same area, and there's no telling where it will stop.

Are there some controls we might have over what happens with the property and what goes into the surrounding wetlands, or are we totally beyond recourse? We have no experts available to us to help interpret this, and the developers are having a field day with our ignorance.

Thank you so much for your help.

"New Wrestler"

### Dear "New Wrestler,"

Welcome to the team. As I stated in my initial column, I tend to approach any wetlands inquiry from a legal point of view, looking at your jurisdiction. I understand most commissioners approach it from the resource point of view. I'll start at the opposite end of the path from you and end up answering your questions.

Your job revolves around "regulated activities." Those are the activities that can not be conducted without a permit. You issue permits for regulated activities. You enforce the law against those undertaking regulated activities without a permit or in a way that violates a permit. But you don't regulate activities which are exempt from the act. The

definition of "regulated activity" in the statute does **not** include the activities exempt by statute. See General Statute § 22a-38 (13) ("Regulated activity" means any operation within or use of a wetland or watercourse involving removal or deposition of material, or any obstruction, construction, alteration or pollution, of such wetlands or watercourses, *but does not include the specified activities in section 22a-40*") (emphasis added.)

It was the job of the legislature to decide what activities you are not going to regulate. They did that job by passing, and at times, amending § 22a-40. Your job does entail determining whether proposed activity does fall within the language of one of the exemptions. Usually that is contained in § 4.4 of municipal regulations (the actual number is not important; for those agencies that followed the DEP model regulations, it can be expected to track the same numbers.) Throughout the years of training I've conducted with my former colleagues in the Attorney General's Office, we applied the following principles:

- 1) The farming exemption is not "intuitive; always have the statute in front of you or your regulation *as long as your regulation is consistent with § 22a-40 (a) (1)*. The first long sentence of the statute provides a laundry list of activities that are exempt. The second sentence, as a judge recently commented, "tightens" the exemption by deleting activities otherwise associated with farming. Do not try to remember what statute says – it's not a memory test. Have the statute in front of you each time you are reviewing a request for exemption;
- 2) Use the definition of agriculture found in § 1-1 (q). Don't try to exclude the raising of animals or the raising of certain animals or impose conditions (income from the farm);
- 3) There is no statutory requirement that a farm already be in existence, notwithstanding what your municipal regulation may state;
- 4) If the proposed activities fall within the exemption, your duty is done. You may not attach conditions, as if you were issuing a permit. It's not your job to stop exempt activities from coming into your town. It's your job to regulate regulated activities.

Answers, continued on page 4

*Answers, continued from page 3*

You ask whether a number of activities are exempt. Let's look at them one-by-one and compare them to the statute. You ask if clear cutting is exempt. It is not exempt "except for the expansion of agricultural crop land." (Second sentence.) Filling? Again, look to the second sentence: "The provisions of this subdivision [the exemptions] shall not be construed to include . . . filling . . . of wetlands or watercourses with continual flow . . ." So, no, filling is not exempt; it is a regulated activity. Can nurseries move into town and "do whatever they want with [the land]?" Nurseries are exempt. See the first sentence of the statute. Is "whatever they want" included in the second sentence? If it is in the second sentence, it is not exempt. If it is not in the second sentence and it is part of operating a nursery, it is exempt. You get the idea. You examine the specific proposed conduct and you determine if it falls only within the first sentence or if it falls within the second. Those aspects that are in the first sentence are not subject to the permitting process; those activities in the second sentence are "regulated activities" for which a permit is required.

**Question:**

In "Officers and Their Duties" section [of our municipal regulations] there is a requirement that the Secretary retain records. It refers to "tapes of meetings." Is there some legal requirement that we tape our meetings?

"Rose Mary Woods"

**Dear "Rose Mary,"**

Since 1990 with the Connecticut Supreme Court's decision in Gagnon v. Inland Wetlands & Watercourses Commission, 213 Conn. 604 (1990), the Connecticut Attorney General's Office has recommended that commissions tape the entire meeting, not just the public hearing portions. Since judges are obligated to review the record of a decision to see if there is any evidence to support the agency's decision, an agency will be best served if there is a recording of the whole meeting. For planning commissions, zoning commissions, planning & zoning commissions and zoning boards of

appeal, there is a statutory requirement that tape recordings or use of a stenographer occur at public hearings and deliberations on any application which can be appealed. General Statutes § 8-7a. The Inland Wetlands & Watercourses Act doesn't contain an equivalent provision. There is an obligation for the agency to submit a transcript of the public hearing and the deliberations in a matter that is appealed to court. If the agency doesn't have a transcript, any party to the appeal may submit a transcript to court.

**Question:**

In "Committees" section [of our municipal regulations]: if we set up committees, it says that we have to open them to the public. Does that also mean that we have to provide public notice of them? Can't we have ad hoc committees (like our group that has been working on the bylaws) without going through all that?

"Close the Door on the Way Out"

**Dear "Close the Door,"**

YES, a committee of the agency has to comply with the Freedom of Information Act<sup>1</sup> for public notice and NO, you can't have ad hoc committees that subvert open government as set out by FOIA. When you're doing "the people's work," i.e., governmental duties, you have to do the work in accordance with FOIA. That includes not holding committee meetings at a non-public place, such as someone's residence. It doesn't matter that no member of the public shows up to follow what you're revising in your bylaws. They are owed the opportunity to observe your public meeting in a public location, whether they choose to or not.

<sup>1</sup> To read the law, go to the Freedom of Information Commission's website at: <http://www.state.ct.us/foi/>.

*Attorney Janet P. Brooks, a member of D'Aquila & Brooks, LLC, practices law in Middletown.*

**(Footnotes)**

# HELP PROTECT CONNECTICUT'S GRASSLAND HABITATS: REPORT GRASSLAND BIRD SIGHTINGS!

A statewide group of conservation organizations and agricultural groups including the Audubon Societies have announced a partnership to gather information on dwindling grassland birds and habitat in Connecticut.

eBird, an online database, will be used to allow anyone to log sightings of grassland birds and help us better understand their current distribution in the state.

The Connecticut Grassland Habitat Conservation Initiative is the first major statewide action to be addressed under Connecticut's Comprehensive Wildlife Conservation Strategy (CWCS). Under the Grassland Initiative, the Connecticut Department of Environmental Protection (DEP) is teaming up with a wide variety of conservation and agricultural groups in an effort to inventory our existing grassland habitat and the array of wildlife species dependent on it. "This project will provide an important baseline for existing conditions and help us understand where the resources exist so that efforts can be focused on those sites where the conservation impact will be the greatest," said Tom Baptist, Executive Director for Audubon Connecticut.

Birds have been chosen as the primary indicator species for this effort. Several species of grassland-specialist birds occur only in high-quality habitat. "If we know where the grassland birds are, we will know where the best grassland bird habitat is," said Edward Parker, Natural Resources Bureau Chief, "understanding and conserving the best sites for birds will also help to conserve a whole suite of associated wildlife species."

Participants will log their sightings in eBird, the on-line citizen science ornithological database that is a joint project of Audubon and the Cornell Lab of Ornithology. It allows anyone to log in and enter their sightings of grassland birds and will provide a map of those grassland bird sightings to the DEP. This in turn will help focus more detailed surveys efforts on those areas that are most important to protect and manage as grassland habitat.

"This is a perfect example of a public-private partnership," said DEP Commissioner Gina McCarthy. "Birders and other citizen scientists throughout the state can put their knowledge to practical use and help us to better understand and conserve Connecticut's grassland heritage."

To participate, simply log on to eBird at <http://www.ebird.org>. You will have to answer a few simple questions and choose a user name and password to be registered as a user. In the "Comments" box, type "CT Grassland Bird Survey." In addition to providing data to this larger effort, you will have the beginnings of an online database of your own bird sightings.

There are mapping tools to help locate the spot where your observation occurred and then you simply estimate the numbers of each bird species you observe and enter that information into the checklist.

The following birds have been chosen as the target species:

- Upland Sandpiper (Endangered)
- American Kestrel (Threatened)
- Horned Lark (Endangered)
- Vesper Sparrow (Endangered)
- Savannah Sparrow (Special Concern)
- Grasshopper Sparrow (Endangered)
- Bobolink (Special Concern), and
- Eastern Meadowlark (Special Concern)

It is not necessary for volunteer birders to have computer access.

Grassland bird sightings can be recorded on paper. Include which grassland bird species were seen, how many, where in the state the birds were seen be as specific as possible) and the date and time of the sightings.

Volunteer birders should mail their grassland bird sightings (including their name and contact information) to: Milan Bull, Connecticut Audubon Society, 2325 Burr St., Fairfield, CT 06824

"The Connecticut Audubon Society is thrilled to be a part of this project," said Bob Martinez, Executive Director for the Connecticut Audubon Society, "today's technology will allow us to tap in to the knowledge base of our members and leave no stone unturned in our quest to inventory this endangered habitat in Connecticut."

For more information, contact Milan Bull, (203) 259-6305, ext. 111, [mbull@ctaudubon.org](mailto:mbull@ctaudubon.org), or Patrick Comins, (203) 264-5098, ext. 305, [pcomins@audubon.org](mailto:pcomins@audubon.org).

# ALTERNATIVE TREATMENT SYSTEMS – THE RIGHT CHOICE FOR THE NEXT DEVELOPMENT?

by Sally Harold

**Editor’s Note:** *Attention Conservation Commissions: As the research and advisory agency for the other land use agencies in your town CACIWC recommends that your commission become knowledgeable on alternate sewage treatment systems and their potential impact on water quality in your community. Then pass the information on to other land use commissions along with recommendations on what they should require when an alternate treatment system is proposed.*

No one needs to tell you that Connecticut is a fast-growing state and that development continues to change the look and feel of our communities. We won’t stop development, but we should do everything in our power to balance human needs with the needs of the environment. Many municipalities have worked to protect certain areas from over-development or from any development at all. Through zoning regulations, (lot size, lot coverage ratios, wetland set-backs, riparian buffer protection, etc), purchase of land for open space (set asides, easements and outright purchase and protection) and establishment of sewer avoidance areas, many municipalities believe they have a pretty accurate picture of where future growth will occur and what it might look like. If only it were that easy!

In 2005, in southwestern Connecticut, The Nature Conservancy initiated efforts to develop a Watershed Partnership to help protect the health of the Saugatuck River Watershed. In the past year, the Saugatuck River Watershed partnership became aware of two proposals for large new developments seeking to use an Alternative Treatment (septic) System, (ATS). (These pre-manufactured in-ground systems are designed to pre-treat effluent before release to the ground.) Both properties were adjacent to the Saugatuck River where any development could threaten the health of the river. These developments would result in loss of natural vegetative cover and increased impervious surface resulting in increased runoff. In addition, they proposed use of an alternative septic treatment technology we knew little about.

This watershed, just an hour east of New York City, is under intense development pressure. As is the case in any developing watershed, non-point source pollution threatens water quality and aquatic habitats. This watershed is one of the healthiest in southwestern Connecticut. With over 17,000 acres; (nearly one third) of the watershed under protection there are ample opportunities to enjoy an afternoon’s hike or find a place to live that feels far away from the metro-region’s congestion. As demand persists prospective buyers and developers are eyeing some of the more difficult properties to develop. In any town you could identify some properties that you never imagined could be developed. These lands may have significant ledge or wetlands, difficult access or poor soils that can’t support a conventional septic

system or the cost of site work to develop them seems unaffordable.

The use of Alternative Treatment Systems may make some of the presumed “off-limits” properties developable or may enable more intensive use of the property because less land will be required for the ATS system and because by promising better contaminant removal than conventional septic ATS can support much larger building plans. The Saugatuck River Watershed Partnership decided there was much to learn and after preparing a White Paper on ATS, concluded there’s much to be concerned about. The White Paper was developed to give local conservation officials some of the info they need to understand the promise and the limits of alternative technology. ATS is being proposed more and more frequently for a number of reasons and not just here in western Connecticut, but across the state: (i) pressure for more intense development of rural areas where municipal sewers are not available; (ii) availability of affordable pre-fabricated “package” ATS for effluent flows under 100,000 gallons per day; (iii) current levels of receptivity at the state level to alternative sewage treatment technology. The promise of successful pretreatment is allowing ATS to be proposed for more intensive development and/or development in environmentally sensitive sites near wetlands and watercourse where conventional septic would not be feasible.

Traditional septic systems are designed to assimilate contaminants—bacteria, nitrogen, phosphorous—in the soils

*Alternatives, continued on page 7*

## Steven Danzer PhD & Associates LLC

- ❖ Expert Opinion and Peer Review
- ❖ Municipal Review
- ❖ Litigation Support
- ❖ Impact Assessment
- ❖ Wetland Delineation and Verification
- ❖ Backyard Environmental Education

Offices in Stamford, CT  
[www.CTwetlandsconsulting.com](http://www.CTwetlandsconsulting.com)  
203-451-8319

*Alternatives, continued from page 6*

before they pollute ground or surface water. These septic systems perform properly and should only be approved in areas where the surrounding soils have the hydraulic capacity to perform these functions. ATS function on the same principle—contaminant attenuation through biological processes—but they are designed to remove some amounts of contaminants from the effluent before its release to the soils, either in specially constructed bioreactors or through a filter process or both. If they function according to their design specifications they should perform as well or better than conventional septic, thereby protecting watershed health. These systems however are much more sensitive than the old septic tank and leaching field and require not only proper siting, but a professional operator and consistent monitoring. And if they don't perform to specification, the resulting pollution of ground or surface water is often worse than conventional septic failure.

The Conservancy's White Paper listed the following recommendations:

- ATS should be allowed only if they can be proven to reliably treat effluent to the CT Water Quality Standards.
- Siting of ATS should be based on site-specific soil and hydrological conditions as well as environmental objectives for the watershed as a whole.
- ATS applications should consider environmental impacts the operation of ATS may cause, the level of operator skill and maintenance requirements for safe operation.
- Municipalities should set standards for design, siting, operation and maintenance at ATS. Because taxpayers are potentially liable if private ATS failures cause a pollution problem, municipalities should require financial guarantees from ATS owners to ensure that funds are available for inspection, repair and replacement.
- Funding for monitoring programs should be in place to assess local water quality and habitat and species health to identify baseline conditions and should be carried out for a year prior to approval of ATS. Continued monitoring of

these local resources and water quality should continue as long as the facility is on line.

“Improperly designed, installed, or maintained on-site sewage disposal systems often cause serious environmental and public health concerns. Poorly treated or untreated effluent can contaminate groundwater and surface water resources. Correction of faulty systems could lead to significant expense to property owners, who must repair such systems, and to tax payers, if municipal sewer lines need to be extended.” (CT Department of Public Health website: <http://www.dph.state.ct.us/>)

I encourage you to read the Conservancy's White Paper and take another look around your town and think about how ATS could change development patterns. If you're already reviewing ATS proposals, are you confident that they will perform consistently to standards appropriate for the continued health of our environment? Will temperature effect performance? Will the owner/operator be responsible for continued maintenance and oversight? Are we being promised the best technology available and is that what we're getting?

The health of Connecticut's natural resources depends on you.

To access the Conservancy's ATS White Paper cut and paste the following link into your browser, or go to The Conservancy's website at [www.nature.org](http://www.nature.org) and select “where we work”, “North America”, “Connecticut”, “Places We Protect”, “Saugatuck Forest Lands” and at the bottom of that page you'll see “Download” to get you to the pdf file.

[http://www.nature.org/wherewework/northamerica/states/connecticut/files/ats\\_white\\_paper.pdf](http://www.nature.org/wherewework/northamerica/states/connecticut/files/ats_white_paper.pdf)

*Sally Harold is Project Director for The Nature Conservancy's Saugatuck River Watershed Project*

<b>NEW ENGLAND ENVIRONMENTAL, INC.</b>	
9 Research Drive / Amherst, MA 01002 (413) 256-0202 / Fax: (413) 256-1092	
<b>ECOLOGICAL DESIGN &amp; RESTORATION EXPERTS:</b>	
* Wetland Design & Bioengineering	
* Natural Channel Design	
* Project Installation and Supervision	
* Native Plant Installation	
* Erosion Control Specialists	
* Full CAD, GIS, and GPS Capabilities	
<a href="http://WWW.NEEINC.COM">WWW.NEEINC.COM</a>	

	<b>Connwood Foresters, Inc.</b>	SINCE 1945
Forest Stewardship Plans	Expert Witness Services	
Property Tax Savings (PA490)	Timber Sales & Appraisals	
Baseline Documentation Reports	Boundary Location/Maintenance	
Tree Protection Plans	Invasive Species Control	
Permit Acquisition	GIS and GPS Mapping	
<b>860-349-9910</b>		
Foresters & Arborists in Central, Western and Eastern CT		
<a href="http://CONNWOODFORESTERS.COM">CONNWOODFORESTERS.COM</a>		

## CONGRATULATIONS TO THE BOLTON CONSERVATION COMMISSION!

The Board of Directors and staff of the Connecticut River Coastal Conservation District (CRCCD) recently selected the Bolton Conservation Commission for a 2006 Special Merit Award. The award was given in recognition of the commission's ongoing interest, leadership and dedication in maintaining the community-based Blackledge River monitoring program in partnership with the Connecticut River Watch Program. The Connecticut



River Watch Program is a citizen monitoring, protection and improvement program for the Connecticut River and tributaries administered by CRCCD.

For the third year in a row, the Commission conducted the Rapid Bioassessment in Wadeable Streams and Rivers by Volunteer Monitors (RBV), a protocol developed by the Department of Environmental Protection. CRCCD staff trained many Commission volunteers in collection techniques and identification of aquatic organisms, known as riffle dwelling macroinvertebrates. These creatures—aquatic insects, mollusks, worms and crustaceans—live in the stream, on the rocks and in the sand in the stream bed, and can tolerate differing amounts and types of pollution. Their presence and quantity provide important information about the health of Bolton's streams and rivers.



## FROM STREAM WALKS TO STREAM RESTORATION: DATA TO ACTION IN THE REAL WORLD *by Jane Brawerman*

In an ideal world, problems noted by Connecticut River Watch Program stream walk volunteers would be followed up on right away by our staff here at the Connecticut River Coastal Conservation District. Potential pollution sources would be field-checked and prioritized for restoration, and from there we would work with local and state officials to ensure that problems were corrected. Sound good? Well actually, those of us working in the trenches know that getting from data to action is rarely that straightforward. Limited resources and competing demands often derail our best intentions. And if it were that simple, this story about how stream walks led to the creation of a demonstration streambank buffer wouldn't be quite as interesting.

### **Our First Stream Walk**

The Connecticut River Watch Program, our Conservation District's citizen monitoring program for the Connecticut River and tributaries, was initiated in 1992. Early on, monitoring activities focused on water sampling and

macroinvertebrate surveys, primarily in the Mattabeset River watershed. When volunteers embarked on the program's first stream walk survey in 1998, one goal was to locate specific impairments that could help us determine where the bacteria, nutrients, and suspended sediments documented in our seven years of Mattabeset River water quality studies might be coming from. We also wanted to obtain baseline information on instream and streambank conditions and adjacent land uses.

Our volunteers used a slightly modified version of a stream walk protocol developed by the Connecticut Natural Resources Conservation Service (NRCS), which consists almost entirely of visual observations of the stream corridor and adjacent land. Volunteers were trained in an indoor-outdoor workshop at which they signed up for predefined stream segments one-half to one mile in length. The District provided them with survey forms printed on waterproof paper, color topographic maps of their stream segment, an

*Streams, continued on page 9*

*Streams, continued from page 8*

instruction manual, and materials to help them identify aquatic vegetation.

Over the next couple of months, the volunteers walked 23 segments in tributary streams where we had previously collected water quality data. They worked mainly in teams of two, spending about two hours per half mile of stream. Slogging through streams and getting a glimpse of what goes on in the backyards of residential areas was eye-opening. Volunteers came back energized from their firsthand learning experience about stream ecology and the human activities that can be harmful to streams. Their newfound perspective was an extremely gratifying outcome of our maiden stream walk survey.

### **What the Volunteers Found**

The survey data gave us numerous valuable clues about possible sources of water quality impairments in the streams. Volunteers found such problems as unstable, eroding banks; lawns maintained to the stream edge; excessive algae growth; discharge pipes; yard waste dumped on the bank or in the stream; and silt and sand blanketing the stream bottom. There was clearly a lot of work to be done to improve streams in the watershed—not the least of which was to help streamside landowners be better stewards of their backyard water resources.

District staff compiled and summarized the stream walk data in a report, and later the information from the report made its way into the *Management Plan for the Mattabesset River Watershed*, a blueprint for restoring the river to fishable and swimmable conditions.

### **Buffers Can Be Beautiful**

So—how did we get to the demonstration stream buffer project from here? Well, fast forward to 2001. Ruth Klue, a new staff member at our “sister” Conservation District to the north, studied the management plan and was particularly excited by one of its recommendations: to “target outreach and education to streamside property owners about the importance of maintaining and restoring riparian buffers.” Klue, who has a degree in landscape design, recalls thinking, “Here’s a task that fits my own strengths.” She decided that a demonstration project showcasing the attractiveness of vegetated buffers would be

an ideal way to encourage homeowners to plant streamside vegetation. “People are unlikely to do anything if it’s like taking your medicine,” says Klue. “I wanted to create a model to show people that a vegetated streamside buffer in their backyard could actually be an enhancement, something that would be inspiring to live with as well as beneficial to the environment.”

### **Using the Data**

The first step was to choose a location for the project. And it was at this point that the two efforts came together. Klue spoke with Vivian Felten, an ecological landscaping specialist with NRCS, who remembered the Connecticut River Watch Program stream walk data. When Klue and Felten reviewed our data, they were excited to see that the volunteers had not only recorded estimated widths for riparian vegetation but also keyed the information to their topo maps.

“We thought, ‘This would be much easier if all the data was on the same map,’” says Felten. So Felten enlisted the help of an NRCS cartographer, who used an aerial photograph as a base and then created another layer (using GIS software)

on which she drew color-coded lines corresponding to the volunteers’ buffer-width data. Now Klue and Felten could see at a glance where there were residential areas that needed better buffers. After field-checking various potential sites, getting advice from the Mattabesset River Watershed Association, and consulting with individual property owners, they selected a site on Hatchery Brook in the town of Berlin.



The site consisted mainly of a 150 foot-long strip of town-owned floodplain parallel to the stream. There were four backyards abutting the publicly owned strip, with no fences or other visual distinctions to mark property lines. The private property owners had been mowing the town-owned strip along with the backyards, creating a single large lawn running right to the edge of the brook. Neither the town nor the adjacent property owners were completely satisfied with the arrangement, especially because the floodplain area was often very wet and difficult to mow.

### **Neighbors Join In**

Klue and Felten hoped the property owners would want to

*Streams, continued on page 10*

include portions of their backyards in the buffer project, so they held several neighborhood meetings to talk about the project design and goals. They explained their vision of planting native, inundation-tolerant trees, shrubs, ferns, tall grasses, and flowering perennials to create dense vegetated areas. Grassy footpaths meandering around the planted areas would invite strolling and provide access to the stream. The stream would benefit because runoff from the vegetated buffer would contain less fertilizer, pesticides, and sediment than runoff from the lawn, and the trees and shrubs would help prevent erosion by holding the streambanks in place. The buffer would also create habitat and a corridor for wildlife.

Four families were intrigued by the proposed project and wanted the buffer to extend onto their property. According to Klue, "Some were inspired by the idea of creating gardens in their yards, some by environmental concerns, and others by the frustration of dealing with their mucky lawns." The final plan, designed with input from the participating neighbors, covered half an acre.

### **Lots of Work, Lots of Helpers**

This first phase of the restoration project was completed in fall 2004 with funding from the New England Grassroots Environmental Fund and a Clean Water Act Section 319 grant, and assistance from many local people. Volunteers from Aetna participating in our local United Way "Day of Caring" removed a wild tangle of prickly invasive plants. Town of Berlin staff rototilled the lawn area to prepare for planting, disposed of invasive plants, provided wood chips, and dredged a silted drainage outlet. The adjacent property owners, members of the local Kensington Garden Club, and teen volunteers from Berlin High School planted and mulched.

Klue says that if she were to do it again, she would try to get even more advance commitments of assistance from local groups. Her advice for others installing vegetative buffers: "Don't underestimate the work, especially of spreading mulch." Felten adds, "Mulching seemed unending and burned volunteers out." What's more, mulch needs to be renewed annually for the first few years, until the plants get established.

In 2006, the second phase of the project was completed with funds from a Five-Star Restoration Matching Grant working with two new neighbors. This phase restored an additional one-third acre, creating almost 500 linear feet of continuous riparian corridor in an area maintained previously as lawn.

It's rewarding to have a tangible on-the-ground result of our stream walks in the Mattabeset River watershed, especially

one that can be used as an example for other residential stream restoration projects. Klue has created a brochure based on the project that explains the benefits of buffers and provides tips on designing and creating them.

### **Other Stream Walk Spin-offs**

We also use our stream walk findings in a number of other ways, some of which may not be quite as obvious and visible as the buffer project. Because the data were used in developing the Mattabeset River watershed management plan that we are now working to implement, information from the survey informs and underlies many of our activities.

We've tackled landowner education by developing a backyard stream guide promoting practices to protect streams, which was mailed to all streamside landowners in the watershed. We continue to work with municipalities to reduce sediment input to streams through improved stormwater management and erosion and sedimentation controls. And just this summer, we embarked on a "Track Down Survey" focused specifically on identifying and prioritizing restoration opportunities in streams that have been walked by our dedicated River Watch Program volunteers.

Who knows? With a little patience and perseverance (make that a lot!), and the contributions of many others in the watershed community, we just might achieve that ambitious fishable and swimmable restoration goal for the Mattabeset River set forth in the management plan...

*Jane Brawerman is the Executive Director of the Connecticut River Coastal Conservation District and coordinates the Connecticut River Watch Program for the District. She may be contacted at 860-346-3282; jane-brawerman@ct.nacdnet.org; or visit [www.conservect.org/ctrivercoastal/riverwatch/](http://www.conservect.org/ctrivercoastal/riverwatch/) for more information about the program. This article is adapted from an article published originally in *The Volunteer Monitor* newsletter, Fall 2006; available at [www.epa.gov/owow/volunteer/vm\\_index.html](http://www.epa.gov/owow/volunteer/vm_index.html).*

## **ENVIRONMENTAL PLANNING SERVICES**

**Wetland, Biological and Soil Surveys,  
Impact Assessment and Mitigation Planning**

**– MICHAEL S. KLEIN, Principal –  
Certified Professional Wetland Scientist  
Registered Soil Scientist**

89 BELKNAP ROAD  
WEST HARTFORD, CT 06117

PHONE/FAX  
(860) 236-1578

# OPEN SPACE AND WATERSHED LAND ACQUISITION GRANT PROGRAM: SPRING 2007 GRANT ROUND

The CT Department of Environmental Protection (DEP) will be accepting applications from municipalities, non-profit land conservation organizations and water companies for the Spring 2007 Open Space and Watershed Land Acquisition Grants Program. Note to farmland preservation supporters: this program may be used to protect farmland!

For the first time, DEP will offer a NEW Urban Gardens Funding Initiative in this grant round. The Initiative provides funds for developing outdoor gathering spaces in urban settings. The result will be new outdoor, passive recreation opportunities for both children and adults in Connecticut cities.

The deadline for submitting applications to DEP is June 30, 2007. Note that some changes have been made to the application requirements regarding the assignment of development rights and appraisal standards. To access the application from the DEP website, click here: [http://www.ct.gov/dep/lib/dep/open\\_space/13thgranrounddocs.pdf](http://www.ct.gov/dep/lib/dep/open_space/13thgranrounddocs.pdf)

It is critical that all of us write or email Governor Rell thanking her for releasing these open space grant funds and

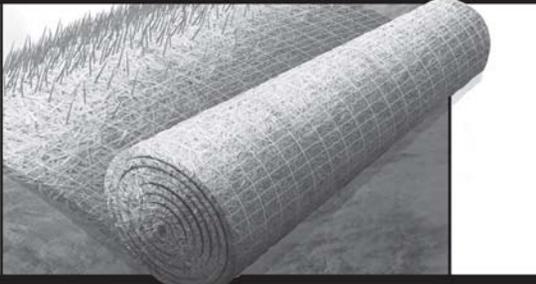
thanking her for her continued support for protecting critical natural lands and preserving working farms. Please contact her right now at: Governor M. Jodi Rell, Executive Office of the Governor, State Capitol, 210 Capitol Avenue, Hartford, Connecticut 06106. E-Mail: [Governor.Rell@po.state.ct.us](mailto:Governor.Rell@po.state.ct.us)

## Open Space Grants Workshop

The CT Land Conservation Council is hosting a workshop on the above grant program on Thursday May 31st. Presenters will include Anne Colby (Southbury Land Trust), Beth Brothers (CTDEP) and Elisabeth Moore (CT Farmland Trust) and the agenda will cover filling out the application, where to find supporting information and how to order the correct appraisal. Light refreshments will be served. We are asking that attendees please pay \$10 at the door to cover the costs of this workshop. To register, please call or email Sarah Pellegrino at 860-344- 0716 x 320 or [spellegrino@tnc.org](mailto:spellegrino@tnc.org) by Friday May 25th.

Open Space & Watershed Land Acquisition Grant Workshop  
 May 31, 2007; 6-8:30 pm  
 CT Forest and Park Association  
 16 Meriden Rd.; Rockfall

**EJ Prescott**  
**Is Your Local Source For**  
**NPDES COMPLIANCE.**



**SOMETIMES YOU NEED A SPECIALIST.**

North American Green, Inc., the nation's leading erosion control blanket and turf reinforcement product manufacturer, is pleased to offer our products through this local source with specialized knowledge, training and expertise.



NPDES Compliance is as easy as installing North American Green erosion control products - available locally only through this authorized source!

North American Green rolled erosion control products are guaranteed to assist in meeting the EPA's NPDES Phase II regulations for erosion control on slopes, drainage channels, shorelines and active job sites to reduce sediment migration.



**EROSION CONTROL PRODUCTS**  
 Guaranteed SOLUTIONS

If you need information about the Phase II rules or the North American Green products that can ensure your job site is compliant, talk to the local Erosion Control Specialists today at:

**Team EJ Prescott**  
 36 Clark Road • Vernon, CT 06066  
 (860) 875-9711

North American Green 1-800-772-2040

**The SNOUT®**  
**Stormwater Quality System**



Made in CT

Reduce Trash,  
 Free Oils, Grit and  
 Floatables

More than 20,000 installed in USA!



Connecticut's very own answer to improving our state's watersheds.

**Best Management Products, Inc., Lyme, CT**  
 800-504-8008 • [www.bmpinc.com](http://www.bmpinc.com)

# SAVE THE DATE!

## CACIWC'S 30<sup>TH</sup> ANNUAL MEETING & ENVIRONMENTAL CONFERENCE

- Date:** Saturday November 10, 2007 (8:30 AM – 4:00 PM)  
**Location:** MountainRidge Special Event Facility (Wallingford)  
**Speaker:** To be announced  
**Workshops:** CACIWC will again host a day-long series of workshops for conservation and inland wetlands commissioners and staff. The workshops are organized into four tracks: *Open Space/Resource Conservation*, *Wetlands Protection*, *Science & Technology* and *Commission Leadership & Administration*. Topics for each track are being finalized. Opportunities to view many informational displays on conservation issues and presentation of the **CACIWC Annual Achievement Awards** will complete the scheduled activities.

*Watch [CACIWC.org](http://CACIWC.org) for further updates!*

Engineering,  
Landscape Architecture  
and Environmental Science



**MILONE & MACBROOM®**

*Assisting Municipalities, Developers,  
State Agencies, and Private Clients with  
Wetland Delineation and  
Functional Assessment Services*

Engineering & Ecological Review of Municipal Applications  
Inland & Coastal Wetland Delineations  
Wetland & Wildlife Habitat Assessment  
Natural Resource Management



**99 Realty Drive  
Cheshire, Connecticut 06410  
Telephone (203) 271-1773  
Fax (203) 272-9733  
[www.miloneandmacbroom.com](http://www.miloneandmacbroom.com)**

Regional offices in SC, ME & VT

# AGRESOURCE

*The Source for Compost and Soil*

Including: Wetland Soil and Organic Fertilizer

800-313-3320    [WWW.AGRESOURCEINC.COM](http://WWW.AGRESOURCEINC.COM)

ENVIRONMENTAL ✧ LANDSCAPE ✧ ARCHITECTURE



**Environmental  
Land Solutions, LLC**

Landscape Architects  
Professional Wetland Scientists  
Environmental Analysts  
Certified Professionals in Erosion &  
Sediment Control

8 Knight Street, Suite 203, Norwalk, CT 06851  
Phone: (203) 855-7879 • Fax: (203) 855-7836  
[www.elsllc.net](http://www.elsllc.net)

## New England Wetland Plants, Inc.

Wholesale Nursery & Greenhouses



Native Trees, Shrubs and Herbaceous Plants  
Bioengineering and Erosion Control Products  
Native Seed Mixes

FCI Conservation • Wetland Restoration  
Water Quality Basins • Roadsides  
Natural Landscapes

820 West Street  
Amherst, MA 01002  
Phone: 413.548.8000 Fax: 413.549.4000  
Email: info@newp.com www.newp.com

*Visit our website or call for a free catalog.*

# Kleinschmidt

Energy & Water Resource Consultants



### PROVIDING SOLUTIONS FOR:

- Fish Passage/Protection
- River Restoration
- Dam Evaluation/Removal
- Aquatic & Terrestrial Surveys
- Land Use & Watershed Planning
- Water Quality Monitoring

*At Kleinschmidt, biological science, engineering, economic, and regulatory skills are integrated to offer each client full service capability under one roof.*

35 Pratt Street, Suite 201 Tel: (860) 767-5069  
Essex, CT 06426 Fax: (860) 767-5097

[www.KleinschmidtUSA.com](http://www.KleinschmidtUSA.com)

## Separating sediment and oil from runoff is not a complicated matter.



### SIMPLE DESIGN.

The ADS water quality unit is based on the fundamental principle of Stokes Law. Other systems that require expensive and convoluted add-ons to create a vortex haven't proven to be any more effective.

### SIMPLE INSTALLATION.

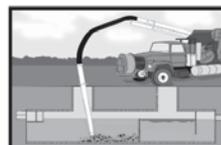
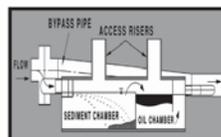
Based on our N-12<sup>®</sup> pipe, the water quality unit installs virtually the same way. Simply follow standard installation procedures.

### SIMPLE MAINTENANCE.

Our water quality unit is fitted with two access risers for easy inspection and maintenance. A standard vacuum truck simply reaches through to remove trapped sediment and oils.

### Life is complicated enough.

To learn how simple and effective water quality treatment systems can be, call ADS today.



Call for test results showing 80% TSS and oil removal rates.

THE MOST  
ADVANCED  
NAME IN  
DRAINAGE  
SYSTEMS<sup>®</sup>

## Call 1-800-821-6710



© ADVANCED DRAINAGE SYSTEMS, INC. ALL RIGHTS RESERVED 2005.

## Expert Review of Environmentally-Sensitive Projects



- Wetlands • Wildlife • Stormwater Treatment •
- Civil and Environmental Engineering •



**Stearns & Wheler, LLC**

35 Corporate Drive, Suite 1000 • Trumbull, CT 06611 • Tel. 203.268.8990 • Fax. 203.268.7443

(203) 272-7837

FAX (203) 272-6698

## SOIL SCIENCE AND ENVIRONMENTAL SERVICES, INC.

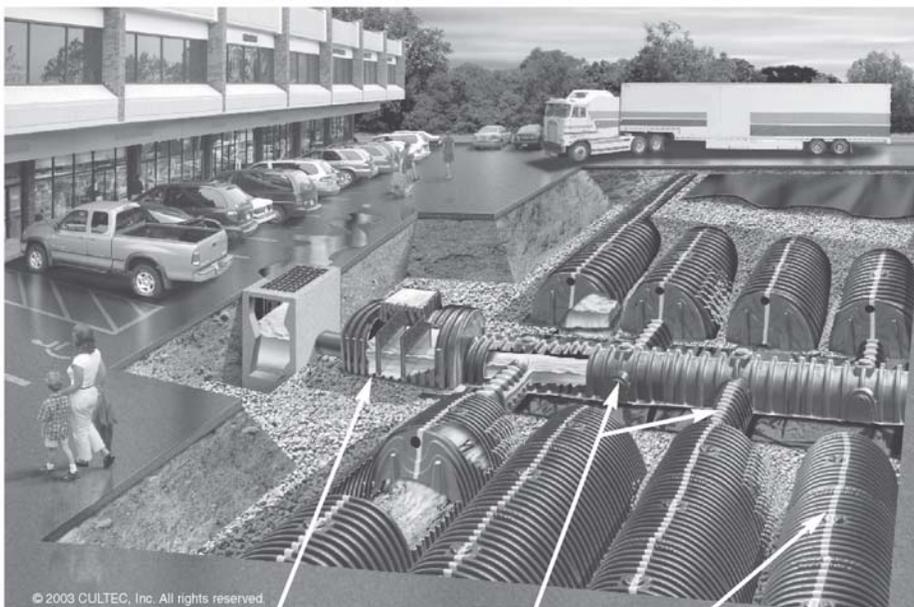
*Ecological and Hazardous Waste Assessments  
State, Federal and Tidal Wetlands Identification*

**KENNETH C. STEVENS, JR., PRES.** 545 Highland Avenue, Route 10  
Reg. Professional Soil Scientist Cheshire, Connecticut 06410

REGISTERED BY SOCIETY OF SOIL SCIENTISTS OF SOUTHERN  
NEW ENGLAND AND NATIONAL SOCIETY OF CONSULTING SOIL SCIENTISTS



**CULTEC, Inc.**



© 2003 CULTEC, Inc. All rights reserved.

**TREATMENT**  
CULTEC **STORMFILTER**<sup>®</sup>  
Stormwater Filter Chamber

**CONVEYANCE**  
CULTEC **HVLV**<sup>™</sup>  
Header System

**STORAGE**  
CULTEC **RECHARGER**<sup>®</sup>  
Plastic Stormwater Chambers

**1-800-4-CULTEC**  
**www.cultec.com**

### Subsurface Stormwater Management System

CULTEC plastic chambers for underground stormwater detention/retention eliminate the liability associated with surface ponds. The chambers are lightweight and easy to maneuver around a job site, so heavy equipment use is kept to a minimum, resulting in less land disturbance. The open bottom and perforated sidewalls provide higher infiltration capability and groundwater recharge.

CULTEC, Inc.  
Brookfield, CT  
custservice@cultec.com

U.S. Patent No. 5,087,151, U.S. Patent No. 5,419,838, U.S. Patent No. 6,129,482 U.S. Patent No. 6,322,288 B1. Other U.S. and Foreign patents. Other U.S. patents pending. RECHARGER<sup>®</sup>, CONTACTOR<sup>®</sup>, HVLV<sup>™</sup> and STORMFILTER<sup>®</sup> are trade names of CULTEC, Inc. Copyright © 2004 CULTEC, Inc. All rights reserved.



## Applied Ecology Research Institute

Providing Solutions for Connecticut's  
Inland Wetlands & Conservation Commissions

Michael Aurelia  
Certified Professional Wetlands Scientist  
72 Oak Ridge Street Greenwich, CT 06830  
203-622-9297  
maurelia@optonline.net

## Managing Land as a *Renewable* and PROFITABLE Resource

- ▶ Ecological Inventories ▶ Wetlands Analysis
- ▶ Forestry ▶ Environmental Impact Studies
- ▶ Easements & Estate Planning

Offices in LYME and NORFOLK, CONNECTICUT.  
Call (860) 434-2390 or (860) 542-5569 for more information.  
Or visit our website at [www.eecos.com](http://www.eecos.com)

E|E|C|O|S **Ecological and Environmental Consulting Services, Inc.**  
STARLING CHILDS, MFS; ANTHONY IRVING, MES

## LAW OFFICES OF Branse, Willis & Knapp, LLC



Zoning & Inland Wetlands  
Commercial & Residential Real Estate  
Business Law • Municipal Law  
Wills & Probate

MARK K. BRANSE • MATTHEW J. WILLIS  
ERIC KNAPP • RONALD F. OCHSNER

148 Eastern Boulevard, Suite 301  
Glastonbury, CT 06033  
Tel: 860.659.3735 • Fax: 860.659.9368



## FUSS & O'NEILL

*Disciplines to Deliver*

*Offering extraordinary ability with exceptional service*

Water	Connecticut
Wastewater	
Stormwater	Massachusetts
Watershed Studies	
Ecological Risk Assessments	Rhode Island
Third-Party Review of Plans and Permit Applications	New York
Wetlands Delineations	North Carolina
Water Quality and Biological Monitoring	South Carolina

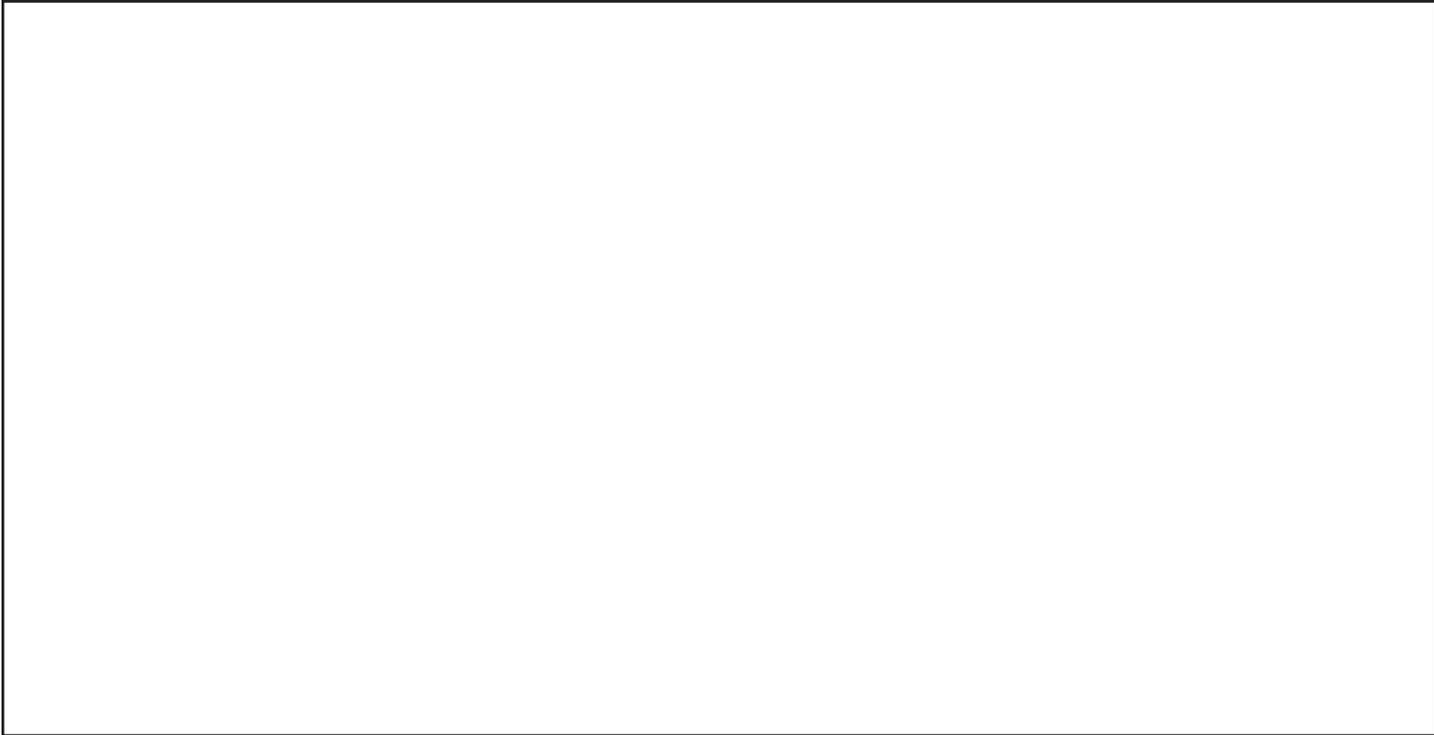
[www.FandO.com](http://www.FandO.com)

T. 800.286.2469



**Connecticut Association of Conservation  
and Inland Wetlands Commissions, Inc.**  
P.O. Box 2373 | Vernon, CT 06066-1773

NON-PROFIT ORG  
U.S. POSTAGE PAID  
Permit 59  
Vernon, CT 06066



**Spring 2007**

[www.caciwc.org](http://www.caciwc.org)

## THE HABITAT

*Dedicated to constant vigilance, judicious management and  
conservation of our precious natural resources.*



**PRINTED ON RECYCLED  
PAPER**