



THE HABITAT

Vol. XX No. I

WINTER 2008

Editor: Tom ODell

HEBRON'S COORDINATED APPROACH TO RIPARIAN AREA PROTECTION

by John Mullaney and Michael O'Leary

Editor's Note: Hebron's Conservation Commission also has the responsibility for administering Connecticut's Inland Wetlands and Water Courses Act. Working with the Planning and Zoning Commission, they have been effective in implementing expanded upland review areas to protect wetlands and watercourses of "special concern." The process used for identifying "special concern" areas would be appropriate for all towns.

In 2006, the Hebron Conservation Commission revised our Inland Wetlands and Watercourse

Regulations¹ to incorporate changes in the Connecticut General Statutes and to expand upland review areas. Our previous regulations dating from the early 1990s specified a 100-foot regulated area adjacent to wetlands and watercourses and a special 300-foot regulated area around five wetlands of special concern. In 2006 we expanded the regulated areas to include four additional 300-foot regulated areas around wetlands, and a 200-foot upland review area on seven streams that are tributaries of the Salmon River.

In 1989, a Natural Resource Inventory² was completed by the Connecticut River Watershed Council for the Town of Hebron. At that time, four wetlands complexes were identified by the Connecticut DEP as wetlands of statewide special concern—wetlands with biological and ecological features of restricted occurrence in Connecticut.

These were the first wetlands with a 300-foot regulated area, and were added to Hebron's regulations during

"In addition to the inland wetlands and watercourse regulations, a number of other factors are contributing to the protection of wetlands buffers, and riparian corridors in Hebron. These include the Plan of Conservation and Development³, revisions to the Hebron Planning and Zoning Commission Subdivision Regulations⁴, and the Open Space and Land Acquisition Committee."

These wetlands were added to the list of 300-foot upland review areas when our regulations were amended in 2006.

The reasons for the additional distance in these upland review areas relate primarily to the Commission's desire to protect high quality resources, as identified by the Connecticut DEP or the Conservation Commission. For instance, Hebron contains the headwater tributaries of the Salmon River. The Salmon River watershed is one of only a few regional basins in Connecticut that contains no direct wastewater discharges, and therefore water quality is very good. The headwater tributaries including the Jeremy River, Raymond Brook, Judd Brook, Fawn Brook and West Branch of Fawn Brook all contain habitat for cold-water fish, and have characteristics considered important in the Atlantic Salmon restoration program, and for native Brook Trout populations. The water-quality classifications for these streams are class A, or B/A.

the early 1990s. These wetlands included the 325 acre Raymond Brook Marsh, Hope Valley Wetlands, Judd Brook Wetlands, and Merrow Swamp and Fawn Brook Marsh.

Additional wetlands were identified in the Natural Resource Inventory as having key features—such as large wetlands with peat and muck soils, association with important streams for fish and wildlife, floodplain habitats, or the presence of stratified-drift aquifers. These wetlands included the Jeremy River, and Fawn Brook floodplain wetlands, Slocum Marsh, and Daly Swamp.

A 200-foot upland review area was adopted for these Salmon River tributaries in 2006. The regulation specifies that the regulated area is the greater of: "200 feet from the ordinary high water mark of the stream channel, or 100 feet from the edge of wetlands associated with these streams." The

Hebron, continued on page 2

INSIDE

JOURNEY TO THE LEGAL HORIZON

LEGISLATIVE AGENDA

UNDERSTANDING CONNECTICUT'S SOILS

2007-2008 MEMBERSHIP SUPPORT LIST

KEY 2008 ENVIRONMENTAL BILLS

RESOURCES & EVENTS

4
6
8
10
12
14

CACIWC BOARD OF DIRECTORS

OFFICERS

ALAN SINISCALCHI	<i>President</i>
MARIANNE CORONA	<i>Vice President</i>
VACANT	<i>Secretary</i>
MARGUERITE PURNELL	<i>Treasurer</i>

COUNTY REPRESENTATIVES

LINDA BERGER	<i>Fairfield County</i>
ANN BEAUDIN	<i>Hartford County</i>
VACANT	<i>Litchfield County</i>
JODIE CHASE	<i>Middlesex County</i>
DIANA ROSS	<i>New Haven County</i>
MAUREEN FITZGERALD	<i>New London County</i>
RODNEY PARLEE	<i>Tolland County</i>
KIMBERLY KELLY	<i>Windham County</i>

ALTERNATE COUNTY REPRESENTATIVES

STEVE DANZER	<i>Fairfield County</i>
VACANT	<i>Hartford County</i>
VACANT	<i>Litchfield County</i>
VACANT	<i>Middlesex County</i>
CHARLES DIMMICK	<i>New Haven County</i>
PAT YOUNG	<i>New London County</i>
VACANT	<i>Tolland County</i>
VACANT	<i>Windham County</i>

DARCY WINTHER *DEP Liaison*

Ann Letendre *Executive Co-Director*
TOM ODELL *Executive Co-Director*

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.



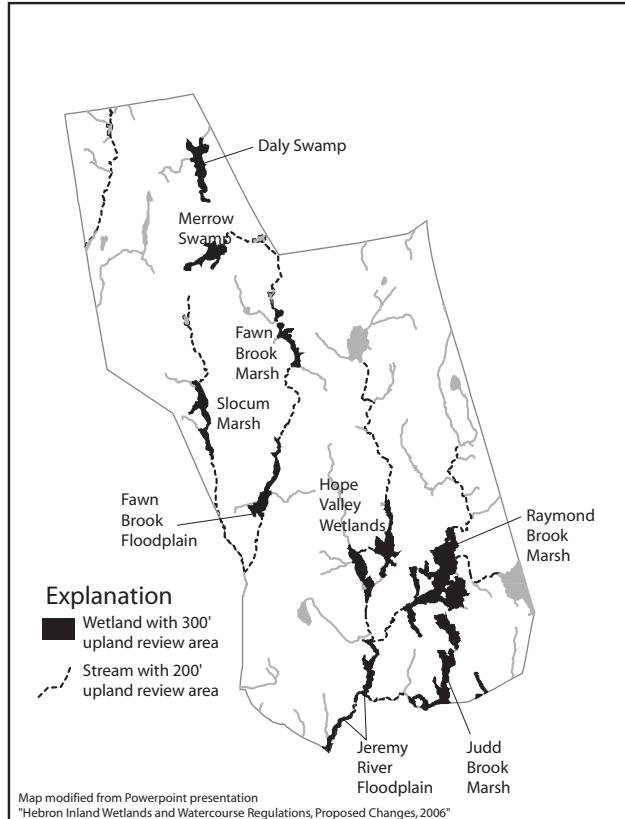
The Habitat welcomes articles and items, but will not be responsible for loss or damage. Correspondence to the editor, manuscripts, inquiries, etc. should be addressed to *The Habitat*, c/o Tom ODell, 9 Cherry St., Westbrook, CT 06498. Phone & fax 860.399.1807 or e-mail todell@snet.net.

Hebron, continued from page 1

Commission recognized that the riparian areas adjacent to these streams have importance for: water quality including temperature, streamflow maintenance and augmentation (especially in areas with extensive floodplains, or stratified drift deposits), flood and erosion protection, fish and wildlife habitat, source of food for aquatic life, and source of large woody debris for aquatic habitat. It also was recognized, however, that the smaller tributaries draining to these streams are of great importance to providing cold clear water to the larger streams.

The *upland review areas* in the Hebron inland wetlands and watercourse regulations are not prohibited from development. The regulations identify areas that we feel are the most important wetlands and watercourse resources in Hebron—this ensures that development in these areas will be reviewed. The goal of the Hebron Conservation Commission has been to preserve as much buffer to important wetlands and watercourses as possible.

In addition to the inland wetlands and watercourse regulations, a number of other factors are contributing to the protection of wetlands buffers and riparian corridors in Hebron. These include the Plan of Conservation and Development³, revisions to the Hebron Planning and Zoning Commission Subdivision Regulations⁴, and the Open Space and Land Acquisition Committee.



The Raymond Brook Marsh. Photo from UConn Center for Land Education and Research, 2004.
<http://clear.uconn.edu>.

the years. This document established the open space goals and policies that still drive the Town's efforts at open space preservation, wetlands and watercourse protection and greenway building. In one effort to implement the goals of the new Plan, the Hebron Planning and Zoning Commission in 2002 adopted enhanced open space requirements as part of the Subdivision Regulations that include requiring a minimum of 20 percent of the parcel be dedicated as open space in all subdivisions and a minimum of 30 percent open space dedication in cluster

Hebron, continued on page 3

Hebron, continued from page 2

subdivisions. Wetlands and slopes greater than 30 percent are not counted toward the total of 20 percent. In addition, the Hebron subdivision regulations prohibit septic systems within 100 feet of wetlands and watercourses. This regulation enhances the Conservation Commission's ability to maintain a minimum of 100 feet of separation to provide for habitat and water-quality protection adjacent to wetlands and watercourses.

The Hebron POCD identifies proposed greenways that include all of the major tributaries and most of the large wetlands identified in the Inland Wetlands and Watercourse Regulations. The Open Space Plan overlaps well with the Hebron Inland Wetlands and Watercourse regulations. Both the Plan and the Town land use regulations reinforce each other and have served to establish clear and consistent open space preservation objectives across the Town's many boards and commissions. This has been evident in several recent subdivision applications where the entire 300-foot regulated area (plus more) was contained within dedicated open space as part of the 20 percent requirement.

Hebron also has an Open Space and Land Acquisition Committee (OSLAC) that has members from all of the land use commissions, as well as the Boards of Selectmen and Finance. In addition the Town has established an Open Space and Land Acquisition fund in which money is added with each municipal budget since the fund's adoption. The OSLAC has worked to preserve lands for natural resource protection, agricultural uses, and recreation. The Committee has reviewed lands along all of the major watercourses and wetlands identified in the POCD, and the Inland Wetlands and Watercourse regulations. One of the major goals of OSLAC is to protect these high quality riparian areas through purchase, purchase of development rights, or facilitating state purchase of these lands.

Since the adoption of the entire updated POCD in January of 2004, the Town has made significant strides in the protection of its open space. In these four years, a total of approximately 445 acres of land have been permanently preserved as Town-owned open space either through open space dedications via the land use process or by outright Town purchase. This has increased the total amount of open space in Hebron from 22.9 percent of the Town's land area to 24.7 percent. Additional land has been protected through the use of private conservation easements through the subdivision approval process where areas of private lots that lie within the 100-foot upland regulated areas are often placed under conservation easement as a means of protection and community awareness. The Regulations require boundary markers to be installed along the easement boundaries so that they serve as reminders to future property owners that these are lands serving to protect a nearby valuable resource.

The combined efforts of Hebron's many volunteer board and commission members, and the development of progressive community plans and land use regulations that serve as a clear guide have been a key component to advancing natural resource protection in the community and raising the awareness of the residents that this is an important and necessary function of local government.

John Mullaney is the Chairman of the Hebron Conservation Commission; Michael O'Leary is the Hebron Town Planner. The Conservation Commission would like to acknowledge the work of former Commission members James Cordier, John Blake, and Linda Perelli Wright in the crafting of the Inland Wetlands Regulations.

¹The Hebron Inland Wetlands and Watercourse regulations can be viewed at http://www.hebronct.com/iwregs_10-13-05.pdf.

²Perelli Wright, Linda, 1989, A natural resources inventory project report for Hebron, Connecticut, Connecticut River Watershed Council, variously paginated.

³The Hebron Plan of Conservation and Development <http://www.hebronct.com/townplan.htm>.

⁴The Hebron Subdivision Regulations - check <http://www.hebronct.com/subregs.htm>. 

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

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

STEVEN DANZER, PHD & ASSOCIATES LLC *Wetlands & Environmental Consulting*



STEVEN DANZER, PhD
Professional Wetland Scientist (PWS)
Soil Scientist

203 451-8319

WWW.CTWETLANDSCONSULTING.COM

WETLAND BOUNDARIES ▶ POND & LAKE MANAGEMENT
CONSTRUCTION FEASIBILITY CONSULTATIONS ▶ ENVIRONMENTAL STUDIES



JOURNEY TO THE LEGAL HORIZON

by Janet P. Brooks

The Editor of "The Habitat" has asked me to address the following questions regarding horses and wetlands regulations. I previously addressed the agricultural exemption more generally in the Spring 2007 issue.

Is a single horse, kept in the back yard, next to a water-course or wetland, exempt?

Yes. To begin, a wetlands agency does not have jurisdiction over exempt activities. That means no permit can be required. So, the inquiry is: does the activity (keeping of a horse) qualify as an exempt activity? The language of the statute, § 22a-40 (a) (1), exempts farming. The legislature enacted a definition of farming that applies to all laws unless a specific law provides a definition; the wetlands law does not provide its own definition. The general definition explicitly states that farming “shall include . . . the raising . . . feeding, caring for, training and management of livestock, including horses . . .” Connecticut General Statutes § 1-1 (q). If your agency has adopted the revisions to the 2006 DEP Model Regulations, § 1-1 (q) has been appended to your municipal regulations. It’s handy to have the definition close to your regulations.

Answer: Yes, the keeping of a horse, whether in a wetland or not, is exempt.

If the horse owner wants to build a shed or small barn for the horse, within the upland review area, would a wetlands permit be required?

To be certain that a farming activity is exempt, we have to examine the second sentence of the exemption. The second sentence sets out activities that are excluded from the exemption and for which a permit will be required. I must say, it’s not written in the most straightforward manner – the use of double negatives can be confusing:

The provisions of this subdivision shall not be construed to include road construction or the erection of buildings not directly related to the farming operation, relocation of watercourses with continual flow, filling or reclamation of wetlands or watercourses with continual flow, clear cutting of timber except for the expansion

of agricultural crop land, the mining of top soil, peat, sand, gravel or similar material from wetlands or watercourses for the purposes of sale;

The second sentence directs us that the exemption doesn’t include “the erection of buildings not directly related to the farming operation.” What it *does* mean is that the erection of buildings directly related to the farming operation IS exempt. Could the legislature have written that more clearly? You bet!

Answer: No, the construction of a barn for the horse, as an exempt activity, does not require a wetlands permit.

Can the wetlands agency use a cease and desist order, or other legal action, to prevent runoff of pollutants from a horse paddock or corral?

To answer that question, we need to answer two questions: 1) what is your agency enforcing when it issues a cease and desist order? and 2) is the runoff of pollutants from a horse paddock exempt from the wetlands act?

A cease and desist order is used to stop a “person” (broadly defined) from violating the wetlands act. “If the inland wetlands agency or its duly authorized agent finds that any person is conducting or maintaining any activity, facility or condition which is in violation of [the wetlands act] or of the regulations of the inland wetlands agency, the agency or its duly authorized agent may issue a written order . . . to such person conducting such activity or maintaining such facility or condition to cease immediately such activity or to correct such facility or condition.” § 22a-44 (a). The primary requirement under the wetlands act is to stop unpermitted activities: “(N)o regulated activity shall be conducted upon any inland wetland or watercourse without a permit.” § 22a-42a (c) (1). The definition of “regulated activity”

Legal, continued on page 5

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

Legal, continued from page 4

explicitly does not include exempt activities: “ ‘Regulated activity’ means . . . but shall not include the specified activities in section 22a-40.” § 22a-38 (13).

We now know that a cease and desist order can be used to stop a person from engaging in a regulated activity without a permit. An order can not be used to stop a person from undertaking exempt activities. The agency doesn’t have the authority over the exempt activities – either to issue permits with conditions or to issue orders that prohibit activities which are exempt under the wetlands act.

I will assume that the pollution referred to is from animal waste. Can the waste be characterized as separate from the horse (which is undoubtedly exempt) to characterize the waste as a regulated activity? Only if the animal waste is a regulated activity can your agency require a permit for it or issue a cease and desist order against it. The common sense answer, of course, is that the waste and horse go together hoof in hoof. The legislature explicitly directed that the raising of horses constitutes farming. It further explicitly exempts farming from the reach of the wetlands act. The legislature knew that horses create wastes. The wetlands act could have been written to exclude horses by creating its own definition of farming. The legislature could have explicitly stated that the exemption “shall not be construed to include the waste products of animals. *The legislature did neither of those acts.* The conclusion to be drawn from what the legislature didn’t do and what it did is that live-stock, including their wastes, are exempt.

One trial court judge has issued a decision on this precise question. An agency issued a cease and desist order to a veterinarian who undertook activities on her property, preparing her land to keep horses. In Sackler v. Inland Wetlands Agency,¹ the court ruled that the preparation of the land to create pasture and training lands to raise horses falls within the farming exemption. The trial court considered whether the waste product from horses was “filling of wetlands or watercourses” that is excluded from the exemption in Sentence Two (see above indented paragraph for the exact statutory wording). Judge Corradino states, in a very accessible style:

The only remotely relevant evidence in the record is testimony that if horses were kept, they would have to be washed down and this might or would run into the wetlands as the proposed site is on a slope. Also, less delicately perhaps, horses are known to defecate and the runoff from the manure would seep into the wetlands. But if horse raising and training is permitted under subsection (1), which the court has concluded it is, these minor invasions of the wetlands or

watercourses cannot invalidate the exemption or the whole exemption would be practically pointless unless the land bordering the wetland on which the activity occurs is completely flat or runs downslope from the wetlands – is that a common or realistic possibility given the location of wetlands and watercourses? . . . The runoff alluded to cannot be said to involve the ‘filling’ of wetlands or watercourses.

Trial court decisions bind the parties to that case. They can be of guidance, although not binding, on others. I believe this case is valuable as guidance.

Answer: No. A wetlands agency can not use a cease and desist order to prohibit the keeping of horses without a permit because of the potential or actual effect of horses’ waste on wetlands or watercourses, as the keeping of horses and the creation of their waste products are exempt activities.

After reading this article are you still feeling you should be regulating agriculture or other exemptions? Here’s what an exemption means. In spite of, regardless of, or despite adverse effect to a wetland or watercourse, the legislature has made a decision to remove that activity from your field of regulation. Your agency has neither the responsibility for, nor the authority over, exempt activities. It doesn’t mean that there are no laws that address those activities. It just means that the wetlands act doesn’t regulate those activities.

¹ This case is not officially reported as are all decisions of the Connecticut Appellate Court and the Connecticut Supreme Court. In fact, the overwhelming majority of Superior Court (trial court) decisions are not officially reported. Many lawyers subscribe to legal research tools, such as Westlaw or Lexis, through which this case can be downloaded. For those of you eager to read the decision yourself, I recommend that you seek the aid of the very competent, enthusiastic and helpful law librarians at either the Connecticut State Library (<http://www.cslib.org/>) or the Connecticut Judicial Branch law libraries (<http://www.jud.ct.gov/lawlib/aboutus.htm>) which are located in most of the state courthouses. The full citation for the case is: Sackler v. Inland Wetlands Agency, Superior Court, judicial district of New Haven, Docket No. CV 03 048 04 71, CV 03 048 17 05 (October 26, 2006).

Janet P. Brooks is an attorney with D’Aquila and Brooks, LLC, whose law offices are in Middletown.



CACIWC's 2008 LEGISLATIVE AGENDA

CACIWC's mission is "To promote the statutory responsibilities of Connecticut Conservation Commissions and Inland Wetlands Commissions and to foster environmental quality through education and through the conservation and protection of wetlands and other natural resources."

Through commission education, promotion of commission responsibilities in the community, and legislative advocacy, we strive to improve the preservation and management of natural resources, including wetlands and watercourses, and to foster environmental quality for all of Connecticut's citizens. In the 2008 legislative session CACIWC will track bills that concern environmental education, land use, environmental stewardship and protection of wetlands and watercourses, focusing on those bills that will affect conservation commissions and inland wetlands commissions.

Environmental Education Issues

CACIWC believes the Municipal Inland Wetlands Commission Training Program and the technical assistance of the Connecticut Department of Environmental Protection (DEP) is extremely important not only to the local community but

to every citizen of the state. One hundred and seventy municipal wetlands agencies and the 1,500+ local volunteers who serve on these commissions are supported by the DEP Inland Wetlands Unit. Commissioners and staff of wetlands commissions are asking for additional training and restoration of technical assistance.

During the 2008 legislative session, CACIWC will actively support increased funding proposals for the DEP to increase inlands wetlands staff to six positions from the current two: three for training, including one for evaluating municipal needs and deficiencies; one for technical assistance; one for monitoring and investigation of enforcement; and a supervisor.

Land Use Issues

The preservation and management of critical open space lands is the most reliable tool in the fight to protect natural resources, locally and from a watershed perspective.

Towns struggle to find the funds to preserve open space to protect water resources, biological diversity, historic landscapes and other land features important to the long term environmental health of the community. The success of the CT DEP's Open Space and Watershed Land Acquisition Grant Program has enabled communities to preserve critical open space that protect natural resources including drinking water supplies, and historic landscapes that form the background of community character. This grant program could be more effective with predictable stable funding.

Many municipalities are helping to preserve the character of their community and access to local foods by taking advantage of the Department of Agriculture's Purchase of Development Rights (PDR) program. By preserving local working farms, communities also help to maintain Connecticut's agriculture base.

During the 2008 legislative session CACIWC will support these land use measures:

- ◆ Legislation that provides predictable and stable funding for open space, watershed and farmland preservation.
- ◆ Funding to assist with the development and implementation of open space stewardship plans.
- ◆ Enabling legislation that will allow local municipalities to collect fees on real estate conveyances in a local dedicated fund that can be used for land conservation.
- ◆ Efforts to secure funding targeted to conservation and stewardship of open space, habitat and/or recreational sites along the Connecticut coastline and will serve as a match for federal funding.

**C CERTIFIED
E EROSION
C CONTROLSM
CONNECTICUT**

High Performance Best Management Practices

- Perimeter Control**
- Sediment Control**
- Stormwater Management**
- Bank & Slope Vegetation Establishment**
- Beach Erosion Control**

Contact: Al Rosenberg, Filtrexx Certified
167 Torrington Road, Winsted, CT 06098
Tel: 860-738-7777 | Cell: 860-601-2453 | arosenberg@snet.net

Legislative, continued from page 6

Environmental Stewardship Issues

Environmental stewardship, as defined here, is the choice to put environmental quality as a cornerstone in how we conduct our every day lives and how we manage the land, water, and air for today and for future generations. In Connecticut the Department of Environmental Protection's (DEP) mission is to protect the state's environment through programs that improve air quality, restore and protect waterways and the habitats they support, and address the remnants of Connecticut's rich industrial legacy through site cleanup and waste management efforts. These programs are meant to foster protection through continual environmental monitoring, protective permitting initiatives, cleanup of contaminated sites, enforcement, and pollution prevention. But the DEP has been severely under funded for many years. While the complexity and challenge of environmental stewardship continues to increase, DEP's budget is declining.

In the 2008 legislative session CACIWC will support these environmental stewardship measures:

- ◆ Efforts to increase the capacity of the DEP to provide state leadership in environmental stewardship
- ◆ Funding initiatives such as the Face of Connecticut and the Municipal Green Fund that will support municipal responsible growth planning and implementation of municipal open space stewardship programs.
- ◆ Legislation that requires universal registration for all ATVs; CACIWC will oppose legislation that allows ATV use of state lands without universal registration.
- ◆ Funding for DEP Invasive Plant programs to enhance existing enforcement, to prevent invasive plant introduction, and to develop and implement a state wide invasive plant eradication program.
- ◆ Bonding for Clean Water Fund to meet the state's responsibilities to the Clean Water Act to upgrade sewage treatment plants.
- ◆ Legislation that will contribute to reduction in litter and promote recycling.
- ◆ Legislation to protect public health by protecting the public water supply.

Protection of Wetlands and Watercourses

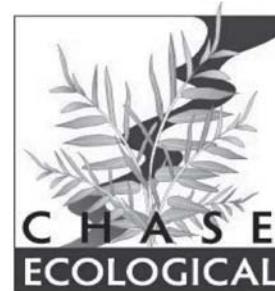
The Connecticut State Legislature has determined that the inland wetlands and watercourses of the State of Connecticut are an indispensable and irreplaceable but fragile natural resource that is essential to an adequate supply of surface and underground water; to hydrological stability and control of flooding and erosion; to the recharging and purification of groundwater; and to the existence of many forms of animal, aquatic and plant life. In passing the Inland Wetlands and Watercourses Act in 1972 the legislature provided for the establishment of Municipal Inland Wetlands and Watercourse agencies to implement regulations to carry out the purposes of the Act. Municipal

wetlands agencies have been extremely successful in carrying out their regulatory responsibilities but face continual pressure from development that creeps closer and closer to wetlands and watercourses. CACIWC will oppose legislation that will weaken the ability of municipal wetlands agencies to protect town inland wetlands and water courses.

During the 2008 legislative session CACIWC will support these inland wetlands and watercourses measures:

- ◆ Legislation that enhances the ability of municipal inland wetlands and watercourse commissions to protect wetlands without the threat of court action, for example H.B. 5603, An Act Concerning Enhancements to the Inland Wetlands and Watercourses.
- ◆ Legislation that protects wetlands and watercourses from non-point source pollution.
- ◆ Efforts to secure bonding for Clean Water Fund to upgrade municipal sewage treatment plants.

(Please see page 12 for information on specific bills).



Jodie Chase, Ecologist

POB 752

Essex, CT 06426

PH: 860.767.9955

FX: 860.767.1264

jodie@chaseecological.com

**Municipal and Peer Application Review
Wetland & Wildlife Habitat Assessment
Inland & Tidal Wetland Delineation
Coastal Resource Delineation
Vernal Pool & Herpetological Survey
Rare & Endangered Species Survey
Wetland Assessment, Mitigation, Creation
Riparian & Wetland Buffer Design
Storm Water Quality Design**

UNDERSTANDING THE BASIC HYDROLOGY OF CONNECTICUT'S SOIL

LANDSCAPES: A WETLANDS PERMIT REVIEWER'S GUIDE by Lisa Krall, Soil Scientist

Editor's Note: Timely science-based land-use decisions can be made by identifying soil landscape characteristics to categorize areas that are more hydrologically sensitive.

Connecticut has several distinct soil landscapes. These differ from one another in several ways, including hydrology (how water moves over and through the land). Ideally, development would be done without altering the function of our landscapes that nature intended. An understanding of the basic hydrology of Connecticut's soil landscapes will assist you in reviewing plans and recognizing potential impacts. A soil landscape usually refers to a natural arrangement of soils from one parent material. The soils vary primarily due to their position on the landscape. To understand this better and see how each soil mapped in Connecticut is associated, visit the Connecticut NRCS Soils page at <http://www.ct.nrcs.usda.gov/soils.html> and take a look at the soil catena diagram and the parent material map.

The most widespread soil landscapes in Connecticut are glacial till landscapes. Glacial till is material that was deposited by the glacial ice itself, either pushed along under it or dropped from within. It is an unorganized mixture, clay to boulder-sized.

The highest percentage of the state's acreage is in bedrock controlled till landscapes. This ablation or "meltout" till was carried within the glacial ice and deposited as it slowly melted. Soil materials are coarse and loose all the way to the bedrock, which varies in depth. Ground water follows the bedrock contours into wetlands and watercourses maintaining base flow or seeps into bedrock aquifers through fractures. Wetlands and vernal pools are found in depressions. Because of the variable depth to bedrock, much of this area has larger lot sizes or has been left undeveloped if sewers were not feasible. Development of these landscapes from their traditionally forested cover may increase runoff, reducing recharge and base flow to wetlands and watercourses.

The second highest acreage in Connecticut occupies basal (or lodgment) till, soils with a compact hardpan within a few feet of the surface (Fig #1). The hardpan is resistant to root, air, and water movement and remains compact all the way to the bedrock. Surface water infiltration and ground water tables, when present, perch upon it and flow laterally, following its topographic contours. Groundwater in these soil landscapes helps maintain base flow to watercourses and wetlands. Perched ground water is limited by the depth to the hardpan, so changes in upland hydrology can have a great impact on the water regime of wetlands. This results in changes in physical and chemical characteristics in the wetland, leading to loss or change of its functions. Subsurface drainage is usually required for basements and roads, and may route runoff and subsurface seepage away from wetlands. Septic system failure is not uncommon, due to high water tables and low permeability. This may lead to

sewering and loss of recharge for base flow. Increases in runoff and degradation in water quality due to construction activities and land use / land cover changes are common as well.

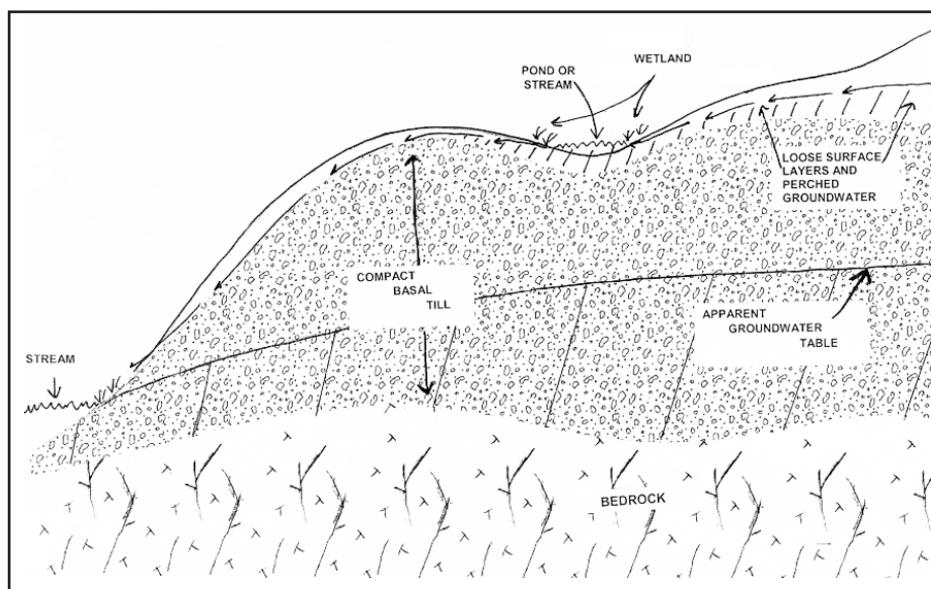


FIG: #1 WATER MOVEMENT IN BASAL TILL: Perched ground water is limited by the depth to the hardpan, so changes in upland hydrology can have a great impact on the water regime of wetlands. This results in changes in physical and chemical characteristics in the wetland, leading to loss or change of its functions.

Glaciofluvial (outwash) soils formed in material carried and deposited by water melting off the glacial ice onto terraces and outwash plains in stream and river valleys (Fig. #2). The soil materials are sands and gravels, making up free draining, often droughty soils. Wetlands make up only a small percentage of these landscapes and occupy shallow drainageways, low-lying areas, and depressions. These wetlands are somewhat less subject to water table fluctuations from minor development activities, because the water source is more extensive than in till landscapes. An increase in impervious area or removal of water in sewers affects critical recharge to groundwater and can effect the

Soil, continued on page 9

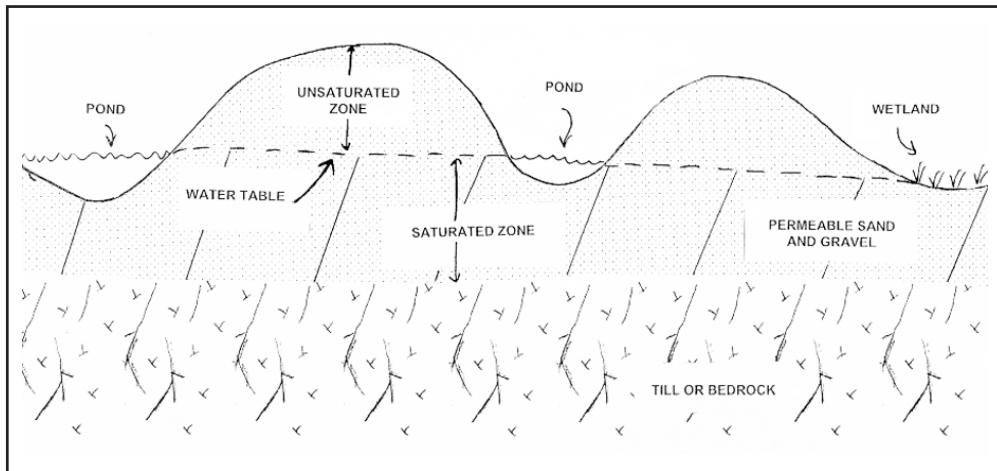


FIG: #2 GLACIOFLUVIAL SOIL LANDSCAPE: These wetlands and water bodies are fed by groundwater supported by larger underlying areas of sand and gravel, till or bedrock.

hydrology of wetlands and watercourses. At the same time, care must be taken to avoid aquifer contamination by infiltration of water that's been degraded by new land uses and stormwater systems.

Glaciolacustrine material settled from placid waters in large glacial lake systems. In Connecticut, these landscapes occur predominantly in the Connecticut Valley. The soils are the finest textured in the state, consisting of layers of silts and clays. Wetlands are extensive in these soil landscapes, supported by surface runoff as well as shallow and/or deep groundwater. Infiltration and percolation is slow, extensive runoff and ponding is common. Disturbance of these soils (ex grading, increased impervious area) can increase runoff and change its patterns, altering the hydrology of wetlands and watercourses. Subsurface drainage for houses and roads capture and divert base flow.

Alluvial landscapes have our newest soils, still being formed with each new flooding event. They form by soil particles settling out of flood waters. These landscapes serve as storage for floodwater, nutrients, and sediment. All drainage classes are considered Connecticut wetlands. In the landscape, the best drained soils are generally nearest the watercourse or on the highest terrace, and the wettest are in the backwater areas in the lowest landscape position. Frequent flooding and wetland status limit many kinds of development on these landscapes. When these soils are disturbed hydrology is easily altered and the impacts to wetlands include erosion, sedimentation, change in the timing and amounts of flooding, ponding, and saturation, and changes to vegetation.

Before reviewing plans for potential impacts, identify the landscape(s) in a plan. It may be possible to request a summary of parent materials be included in the permit application. Or, you can map the area on NRCS Web Soil Survey <http://websoilsurvey.nrcs.usda.gov/app/>. Instructions

are available on the web site; call us if you need help. Once you have your soil map, click on the mapunit name for a brief description. Or follow *Soil Data Explorer/Soil properties and qualities/Soil qualities and features/Parent material name*.

Now that you understand something about the hydrology of soil landscapes, look for development activities that may affect the amount and timing of the water critical to wetlands and watercourses in the area. A good topographic survey will help as well, to determine if the drainage area is being affected.

Will any of these activities affect overland or base flow to wetlands and watercourses by increasing runoff, diverting water (to or away from wetland), changing frequency, timing, or duration of flooding? Will any of them change the quality of flow into wetlands? You might use this checklist when evaluating proposals:

Evaluate location and extent of the following changes to the existing state of the project area:

Landscape

- ◆ Cuts / fills
- ◆ Roadside ditches
- ◆ Changes in size of watershed / recharge area
- ◆ Berms, swales, slope changes
- ◆ Manipulation of slopes adjacent to wetlands and watercourses

Landuse/Landcover

- ◆ Vegetation changes (ex. woods to lawns)
- ◆ Increases in the percentage of the watershed/ recharge area already developed
- ◆ Changes to the infiltration potential of the soil

Infrastructure

- ◆ Road layout
- ◆ Curbs, storm drains, outlets
- ◆ Retaining walls
- ◆ Culverts, bridges
- ◆ Curtain and perimeter drains and outlets
- ◆ Addition of municipal water / sewer

E&S and Stormwater Management

- ◆ Provisions to avoid erosion and compaction during construction
- ◆ Proposed Storm water quality and quantity BMP's
- ◆ Cleanout and Maintenance needs.

Add your own!!



WE APPRECIATE YOUR SUPPORT

As of February 26, 2008, the following Town commissions have supported CACIWC through membership for the 2007-2008 fiscal year (July 1, 2007 to June 30, 2008). THANK YOU! If you do not see your Commission on the list, please encourage your commission to join. (If we are in error we apologize and would appreciate knowing). Visit www.caciwc.org for a membership form and dues information. Member Commissions receive a copy of The Habitat for each commissioner and staff if dues have been paid.

ANDOVER	CC+IW	GOSHEN	IW	POMFRET	CC
ANSONIA	IW (SUS)	GOSHEN	CC	PORTLAND	IW
ANSONIA	CC (SUS)	GRANBY	CC	PRESTON	CC+IW
ASHFORD	CC	GRANBY	IW	PROSPECT	IW (SUS)
ASHFORD	IW	GREENWICH	IW (SUS)	PROSPECT	CC (SUS)
BARKHAMSTED	CC	GREENWICH	CC (SUS)	PUTNAM	CC+IW
BARKHAMSTED	IW	GROTON	CC	REDDING	CC+IW
BEACON FALLS	CC (SUS)	GROTON	IW	RIDGEFIELD	Z+IW
BEACON FALLS	IW (SUS)	GUILFORD	CC	RIDGEFIELD	CC
BETHANY	CC (SUS)	GUILFORD	IW	ROCKY HILL	CC+IW
BETHANY	IW (SUS)	HAMDEN	IW	ROXBURY	IW (SUS)
BETHEL	IW	HAMDEN	CC	ROXBURY	CC (SUS)
BETHLEHEM	CC	HAMPTON	CC	SALEM	CC+IW (SUS)
BETHLEHEM	IW	HARTLAND	IW	SALISBURY	CC (SUS)
BLOOMFIELD	IW (SUS)	HARWINTON	IW	SHARON	IW (SUS)
BOLTON	IW	HEBRON	CC	SHELTON	CC
BOLTON	CC	KENT	CC	SHERMAN	IW
BOZRAH	CC+IW	KENT	IW	SHERMAN	CC
BRANFORD	CC	KILLINGWORTH	IW (SUS)	SOMERS	CC
BRANFORD	IW	KILLINGWORTH	CC (SUS)	SOUTHBURY	IW
BRISTOL	CC+IW	LEBANON	IW	SOUTHBURY	IW (SUS)
BROOKFIELD	CC	LEDYARD	IW	SOUTHBURY	CC+IW
BROOKFIELD	IW	LISBON	CC	SPRAGUE	IW (SUS)
BROOKLYN	CC	LITCHFIELD	IW	STERLING	CC (SUS)
BROOKLYN	IW	LYME	CC+IW	STONINGTON	IW
BURLINGTON	IW	MADISON	IW	STRATFORD	CC
CANTERBURY	IW (SUS)	MANCHESTER	Z+IW	STRATFORD	CC
CHAPLIN	IW	MANSFIELD	Z+IW	THOMASTON	IW
CHAPLIN	CC	MANSFIELD	CC	THOMPSON	IW
CHESHIRE	IW	MARLBOROUGH	CC	THOMPSON	CC
CHESHIRE	CC	MERIDEN	CC	TOLLAND	IW
CHESTER	CC	MERIDEN	CC	TOLLAND	CC
CHESTER	IW	MIDDLEBURY	CC	TORRINGTON	IW (SUS)
CLINTON	CC+IW	MIDDLETOWN	IW	TORRINGTON	CC (SUS)
COLCHESTER	CC	MIDDLETOWN	CC	WALLINGFORD	CC
COLUMBIA	CC	MILFORD	IW	WALLINGFORD	IW
COLUMBIA	IW	MILFORD	CC	WARREN	CC+IW (SUS)
COVENTRY	CC	NEW CANAAN	CC	WASHINGTON	Z+IW (SUS)
COVENTRY	IW	NEW FAIRFIELD	CC+IW (SUS)	WASHINGTON	CC (SUS)
CROMWELL	CC	NEW LONDON	CC	WATERFORD	CC
CROMWELL	IW	NEW MILFORD	CC	WEST HARTFORD	CC
DANBURY	CC+IW	NEW MILFORD	IW	WEST HARTFORD	Z+IW
DARIEN	CC+IW (SUS)	NEWTOWN	CC	WESTON	CC
EAST GRANBY	CC+IW	NEWTOWN	IW	WESTPORT	CC (SUS)
EAST HADDAM	CC	NORTH HAVEN	IW	WETHERSFIELD	IW
EAST HADDAM	IW	NORTH STONINGTON	IW	WILLINGTON	CC
EASTFORD	CC	NORTH STONINGTON	CC	WILLINGTON	IW
EASTFORD	IW	NORWALK	CC (SUS)	WILTON	CC
EASTON	CC+IW	OLD LYME	IW	WILTON	CC
ELLINGTON	IW	OLD LYME	CC	WINDSOR	IW
ELLINGTON	CC	OLD SAYBROOK	IW (SUS)	WINDSOR	CC
ENFIELD	CC (SUS)	OLD SAYBROOK	CC (SUS)	WINDSOR LOCKS	CC
ENFIELD	IW (SUS)	ORANGE	IW	WINDSOR LOCKS	IW
ESSEX	IW (SUS)	ORANGE	CC	WOODBRIDGE	IW
FAIRFIELD	CC	OXFORD	CC+IW (SUS)	WOODBRIDGE	CC
FARMINGTON	CC	PLAINFIELD	IW	WOODBURY	IW
FARMINGTON	Z+IW	PLAINFIELD	CC	WOODBURY	IW
FRANKLIN	IW	PLYMOUTH	CC+IW (SUS)	WOODSTOCK	IW
GLASTONBURY	CC+IW (SUS)	POMFRET	IW	WOODSTOCK	CC

CC = Conservation Commissions
 CC/IW = Combined Commissions
 (sus) = sustaining level of support

IW = Inland Wetlands Commissions
 Z/CC = Zoning/ Inland Wetlands Commission



CME Associates, Inc.

Architects, Engineers, Scientists & Surveyors

Richard W. Canavan, Ph.D.

Richard W. Canavan, Ph.D. recently joined CME as Senior Environmental Scientist. He obtained a bachelors degree in botany from Connecticut College, M.S. in soil science from Cornell University, and Ph.D. in geochemistry from Utrecht University (Netherlands).



Dr. Canavan has conducted extensive research and published numerous scientific research papers on the effects of nutrients and other pollutants in soils, wetlands and lakes. Dr. Canavan also co-authored the Connecticut Arboretum publication "Connecticut Lakes: a study of the chemical and physical properties of fifty-six Connecticut lakes" which examined the effect of land use changes on water quality.

Selected Services:

*Engineering Review
Ecology and Hydrology
Wetland Delineation & Restoration
Stormwater Management
Lake, Pond and Watershed Planning
Environmental Permitting*

Toll Free: 1-888-291-3227
www.cmeengineering.com

Licensed in CT, MA, RI,
NH, VT, ME, and NY



Expert Review of Environmentally-Sensitive Projects

Wetlands

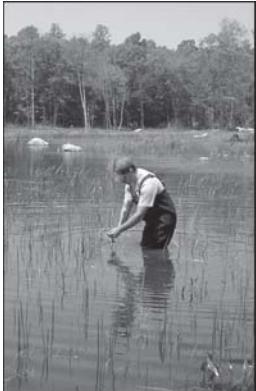
Wildlife

Stormwater Treatment

Civil and Environmental Engineering

100 Roscommon Drive
Suite 108
Middletown, CT 06457
Tel. 860.635.8200
Fax. 860.635.8203

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



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

Building strong partnerships with our clients to deliver creative solutions that are technically sound, cost-effective, and environmentally sensitive

*Engineering,
Landscape Architecture
and Environmental Science*

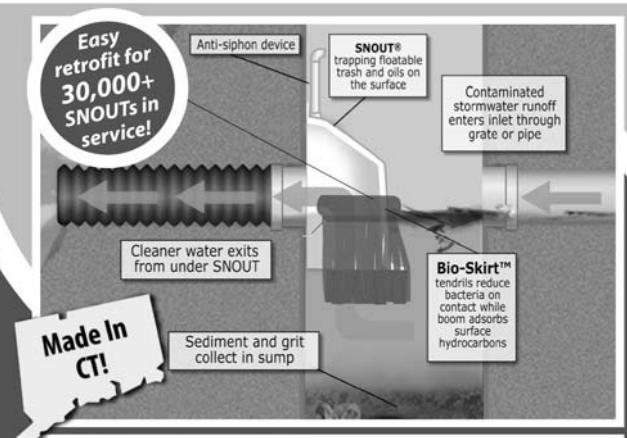
MILONE & MACBROOM®

99 Realty Drive - Cheshire, CT 06410 - T. 203 271-1773 - F. 203 272-9733
333 Ludlow Street, 5th Floor - Stamford, CT 06902 - T. 203 588-9330 - F. 203 588-9333
500 East Main Street, Ste. 326 - Branford, CT 06405 - T. 203 481-4208 - F. 203 483-7205

www.miloneandmacbroom.com

Additional offices in Newcastle, ME; Greenville, SC; Raleigh, NC; S. Burlington, VT

The SNOUT® + Bio-Skirt™ Connecticut's Solution to Clean Up Stormwater Pollution



The SNOUT® is a field-proven name you know and trust. BMP's Bio-Skirt is the product you need to reduce harmful bacteria and trap oils in stormwater inlets.

Best Management Products, Inc.

860-434-0277 860-434-3195 fax
800-504-8008 www.bmpinc.com
Mt. Archer Rd. Lyme, CT 06371



KEY 2008 ENVIRONMENTAL BILLS FOR CONSERVATION AND INLAND WETLANDS COMMISSIONS

The legislature will be debating the merits of the following bills for the next 4-6 weeks. Please contact your legislator if you would like to support or otherwise comment on any of the bills described here. To find your legislator go to <http://www.cga.ct.gov/maps/townlist.asp>. To read a bill go to, <http://cga.ct.gov/env/>, type in bill number in box at top of page, click, then click on either the file copy pdf or the raised bill pdf.

House Bill 5603 - An Act Concerning Enhancements to the Inland Wetlands and Watercourses Act

H.B. 5603, An Act Concerning Enhancements to the Inland Wetlands and Watercourses Act, will strengthen the ability of Municipal Inland Wetland and Watercourse Commissions to protect local wetlands and watercourses.

The Connecticut's Inland Wetlands and Watercourses Act (Act) gives municipal wetland agencies the authority and responsibility for protecting wetlands and watercourses within the territorial limits of the town. Recent court decisions have placed an increasing legal burden on volunteer commissioners in reviewing and, if appropriate, denying a permit, even with extensive evidence indicating the proposed development would impact the wetland resources.

H.B. 5603 clarifies the intent and purpose of the Act by stating that **the applicant must prove** by a preponderance of evidence that the proposed activity will not impact the wetlands and watercourse resource, and that the municipal wetlands agency can rely on comments and reports from state agencies such as the CT-DEP and the Department of Public Health, as well as Environmental Review Team reports and private environmental consultants.

Passage of this legislation is critical to the long term ability of a municipal wetlands commission to protect wetlands and watercourses in their town.

Raised Bill No. 5873 - An Act Concerning the Face of Connecticut Steering Committee and the Preservation of Farm Land

RB No. 5873, The Face of Connecticut Steering Committee and the Preservation of Farm Land bill, will create a "**Face of Connecticut Account**" that will be used to fund new and existing land and historic preservation programs. Under the guidance of the Face of Connecticut Steering Committee, a fully vested "Account" **will provide municipalities** with a stable and predictable source for funding conservation programs to protect and preserve critical natural, agricultural and historic resources.

The Face of Connecticut legislation is designed to immediately begin to address critical components of the State's responsible growth strategy. This Act (RB 5873) addresses the urgent need of municipalities to plan locally, and at a watershed level, to identify and preserve priority conservation areas that protect critical drinking water supplies, wetlands and watercourses and threatened biological resources.

Many towns have identified "preserving community character" and as a goal in their Plan of Conservation and Development. RB 5873 addresses this goal by providing funding for grants for preserving historic landscapes and buildings, for restoring historic urban neighborhoods, downtown commercial areas, parks and town greens, and for establishing greenways. This legislation also provides incentive stewardship grants for protecting municipal and state investment in open space, watershed lands and historic resources.

In 2007 Face of Connecticut legislation, Public Act 131, recognized the difficulty communities have in finding the matching funds needed to participate in the State's Open Space and Watershed Land Acquisition Program and increased the maximum state grant from 50% to 65%. This year, passage of the Face of Connecticut Steering Committee and the Preservation of Farm Land legislation will ensure there are stable and predictable funds to meet community needs and expectations.

For more information and to join the growing number of organizations and individuals that support the Face of Connecticut legislation please go to:
<http://www.faceofconnecticut.org/>.

CACIWC is a member of the Face of Connecticut steering committee that for two years has been guiding the development of this important smart growth legislation.

Senate Bill No. 362 - An Act Concerning River Front Protection

The River Front Protection Act has been proposed to specifically reduce non-point source pollution from entering Connecticut's river systems.

Passage of the Federal Clean Water Act and subsequent State actions has led to a marked improvement in water quality in Connecticut's rivers, due primarily to the construction of wastewater treatment plants and reduction of other point source pollution discharges. But there are only a few rivers in the state that meet their federally mandated "fishable" and "swimmable" water quality standards despite

Bills, continued on page 13

Bills, continued from page 12

the expenditure of billions in taxpayer funds. A major reason for this is the increasingly larger share of water pollution coming from nonpoint sources such as storm water runoff from development projects that are sited too close to rivers and streams. Encroachment by riverfront development is now recognized as a major factor contributing to the degradation of once pristine watersheds as well as a major obstacle to restoring good water quality to previously degraded areas.

Senate Bill 362 recognizes the futility of trying to prevent further degradation of water quality without preserving and protecting the naturally vegetated river front lands. In this regard the River Front Protection Act seeks to safeguard the natural vegetated integrity of Connecticut's river systems by requiring development and other potentially degrading land use activities to be set back 100-feet from the river bank. Implementation of a regulated 100-foot buffer or set back, is scientifically proven to be capable of protecting public and private surface drinking water supply, ground water for the recharge of aquifers and wetlands, fisheries habitats, and wildlife habitat. Vegetated river front areas also provide significant flood control.

There are exceptions or "as of right" activities built into this legislation. While the bill is being discussed and sometimes debated in the legislature the legislations language is evolving, particularly to address concerns voiced by municipal wetland agencies that will have the authority and responsibility to regulate river front protection. One hundred twenty-three municipal wetland agencies already regulate upland review areas of 100-feet or more around river banks to prevent impacts to watercourses and wetlands. River Bank Protection would restrict most degrading land use activities from that 100-foot area, reducing commission deliberation on wetland impacts in that 100-foot river front area, while significantly reducing non-point source pollution from entering Connecticut's river systems.

CACIWC is a member of a coalition of environmental groups that have been working on River Front Protection language over the last nine months. The coalition will continue to support the intent of the River Front Protection legislation while working with municipal wetlands agencies and the DEP to ensure the regulatory responsibility can be implemented seamlessly, and without increased cost, into the municipal wetlands and watercourse commission operations.

In a March 17, 2008 editorial, "Better River Front Protection," *The Hartford Courant* said: "This legislation offers a balanced and responsible approach to protecting the quality of the state's rivers, its drinking water and its natural resources." To see editorial go to: <http://www.courant.com/news/opinion/editorials/hc-river.artmar17,0,2826576.story>

House Bill No. 5602 - An Act Concerning ATVs

Passage of H.B. 5602 will allow All-Terrain Vehicles (ATVs) to operate on certain state lands without requiring state-wide universal registration of ATVs, thus setting a dangerous precedent while ignoring the state-wide escalation of encroachment and damage to municipal, land trust and private open space, farmlands, and wetlands.

ATV damage leads to soil and sediment erosion, pollution of wetlands and watercourses, crop damage, establishment of invasive plants, loss of biological diversity and reduction in community use of open space for passive recreation.

Adequate enforcement to reduce or prevent ATV encroachment and subsequent damage will not be possible *unless every ATV is required to be registered and carry visible registration identification. Without universal registration, municipal ordinances and signage prohibiting ATVs on private and public properties cannot be effectively enforced.*

H.B. 5602 will exacerbate the problem by allowing unmarked, unregistered ATVs to use state property. In effect, the perception will be that the Connecticut Legislature has no interest in protecting municipal and private lands against the damage inflicted by ATVs. Perception is all it takes to "approve" otherwise unlawful activity. Let your legislators know what you think. 

NEW ENGLAND ENVIRONMENTAL, INC.

9 Research Drive / Amherst, MA 01002
(413) 256-0202 / Fax: (413) 256-1092



ECOLOGICAL DESIGN & RESTORATION EXPERTS:

- * Wetland Design & Bioengineering
- * Natural Channel Design
- * Project Installation and Supervision
- * Native Plant Installation
- * Erosion Control Specialists
- * Full CAD, GIS, and GPS Capabilities

WWW.NEEINC.COM



**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

RESOURCES

Green & Growing, Tools for Responsible Growth

Connecticut's Office of Responsible Growth has a new website - <http://www.dir.ct.gov/OPM/IGP/Tools/index.asp>. It is an excellent resource and includes links to tools (grants, loans, technical assistance) for conservation, municipalities, non-profits, farmers, developers and others.

CT-DEP Model Regulations

A section of CT DEP's web site, landscape stewardship, tools for towns and cities, have links to model regulations for aquifer protection, inland wetlands regulations, parking regulations that reduce impervious cover, stormwater management, and tidal wetlands buffers. Check our website: http://www.ct.gov/dep/cwp/view.asp?a=2703&q=390248&depNav_GID=1634&depNav_WID=2703&depNav_ID=1634&depNav_FID=1634.

CT Audubon Society's 'State of the Birds'

If your conservation commission hasn't received a copy of the latest **Connecticut Audubon Society's 'State of the Birds Report'** and would like a hard copy, contact Milan Bull at (203) 259-6305, ext. 111 or email mbull@ctaudubon.org.

EVENTS

Earthstock 2008

An Earth Day Event sponsored by the Plainville Conservation Commission will be held on April 20, 2008 from 10:00 a.m. - 4:00 p.m. at Norton Park, South Washington Street in Plainville. Planning is underway. To become involved, or if you have an environmentally friendly exhibit contact Estelle Carenza, Event Coordinator at hippie@earthstockplainville.com or (860) 747-3187. For more info please visit www.earthstockplainville.com.

19th Annual Non-Point Source Pollution Conference

Our annual conference is scheduled for May 19 - 21, 2008 at the Mystic Marriott Hotel and Spa, Groton, CT. For more information and to register please contact NEIWPCC; phone: (978) 323-7929 or email mjenkins@neiwpcc.org.



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

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

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

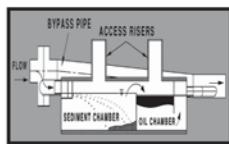


SIMPLE DESIGN.

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.

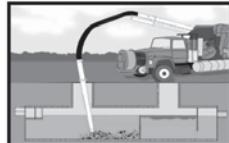
SIMPLE INSTALLATION.

Based on our N-12® 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.

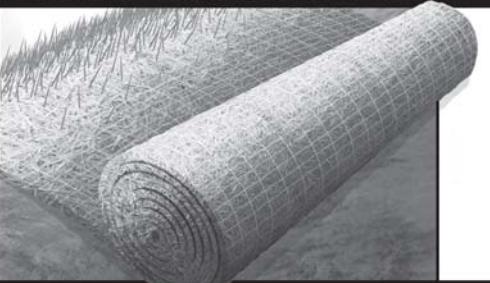
Call for test results showing 80% TSS and oil removal rates.

THE MOST ADVANCED NAME IN DRAINAGE SYSTEMS®
ADS

Call 1-800-821-6710

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

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!

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 I-800-772-2040

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.



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.



FUSS & O'NEILL
Disciplines to Deliver

- Water
- Wastewater
- Stormwater
- Watershed Studies
- Ecological Risk Assessments
- Third-Party Review of Plans and Permit Applications
- Wetlands Delineations
- Water Quality and Biological Monitoring

Connecticut · Massachusetts · Rhode Island · New York
 North Carolina · South Carolina

800-286-2469

www.FandO.com

AGRESOURCE

The Source for Compost and Soil

Including: Wetland Soil and Organic Fertilizer

800-313-3320 WWW.AGRESOURCEINC.COM



Connwood Foresters, Inc.

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 |

860-349-9910
 Foresters & Arborists in Central, Western and Eastern CT
CONNWOODFORESTERS.COM



**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

CALL FOR WORKSHOP AND POSTER PROPOSALS



CACIWC's Annual Environmental Conference

November 8, 2008 at MountainRidge in Wallingford, CT



CACIWC is now accepting proposals for WORKSHOPS and POSTERS in these categories:

- ❖ Open Space / Resource Conservation ❖ Wetlands & Watercourse Protection
- ❖ Science & Technology ❖ Commission Administration

Submit proposals by MAY 30, 2008 to CACIWC, P.O. Box 2373, Vernon, CT 06066.

Include this information with your proposal :

- ◆ Workshop or Poster? ◆ Topic Category (from above) ◆ Suggested Title ◆ Abstract (55 words or less)
- ◆ Presenter(s) name, title(s), organization/affiliation, and contact information
- ◆ Project description: include relevance to conservation commissioners & staff and/or inland wetlands commissioners & agents. Also include intended audience experience level (beginner to advanced). This year CACIWC will incorporate advanced workshops in the program.
- ◆ Handout list: handouts are particularly helpful for attendees. List any handouts, including title(s) and number of pages, that you plan to use.
- ◆ AV/IT needs: laptop & projector, slide projector, other. Will you bring your own equipment?
- ◆ Resume(s)/Qualifications: include commission experience (if applicable).

See CACIWC.org for additional information; a proposal form is available if you wish to use it.

Winter 2008

THE HABITAT

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

WWW.CACIWC.ORG

 PRINTED ON
RECYCLED PAPER