FALL 2008
Volume 20
Number 4

THE HABITAT

A newsletter of the Connecticut Association of Conservation and Inland Wetlands Commissions, Inc.

Land Use Applications Before the Connecticut Siting Council: Effective Involvement by Municipal Conservation and Inland Wetlands Commissions

by S. Derek Phelps

Municipal land use boards throughout our state are staffed with some of the finest and most committed public service volunteers anywhere. They serve countless hours investigating, studying, and researching issues that can affect the environment and quality of life of their communities. They endure some of the longest, most intensive meetings that occur in any town hall.

And without exception, every single one of these public officials wants to do the best job possible for their respective city or town.

As someone who works with a state agency that has preemptive jurisdiction over municipal authority (and as a former selectman), I consider it my duty to do everything in my power to help facilitate municipal involvement to the greatest degree possible. I also understand that perhaps the most critical tool to aid municipal involvement is the delivery of accurate and complete information to local boards, commissions, and agencies.

To that end, I welcome every opportunity to explain our role and how our agency works. So before going any further, let me first say that I appreciate this opportunity to communicate to you, the members of Connecticut's Conservation and Inland Wetland Commissions, about the public mission and the process of the Connecticut Siting Council.

What is the Siting Council?

I'd like to first clarify that the Siting Council is an executive-branch agency of Connecticut state government. Our offices are in New Britain where we operate with ten employees and an annual operating budget of slightly more than $2 million. Our agency is entirely self-funded in that we derive all of our revenues from the various companies that we regulate. The agency website is ct.gov/csc.

We employ five full-time siting analysts, each of whom has extensive education and experience in environmental matters. Their backgrounds include prior employment with the Department of Environmental Protection (DEP), the Department of Public Utility Control (DPUC), and municipal land use planning.

The Siting Council itself generally functions as a nine-member body comprised of seven members of the lay public and representatives of DEP and DPUC. DEP's designee is an environmental analyst with 18 years of experience.

Of the seven representatives of the public, two are appointed by the General Assembly and the remaining five are appointed by the Governor, including the Chairman. This group includes a former mayor and former members of planning and zoning and inland wetlands commissions. And they live throughout our state – from Fairfield, to Norfolk, to Stonington, and all parts in between.

Siting Council, continued on page 3

Inside

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.

Editor: Tom ODell
Associate Editor: Ann Letendre

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.

Commission News

Editor's Note: Brief descriptions of your commission's programs and events can benefit other commissions. CACIWC encourages you to submit a paragraph or two describing on-going commission activities. Please send to Tom ODell, todell@snet.net.

Beacon Falls Conservation Commission holds a Community Forum Dedicated to "Great Open Space"

On September 15, 2008, the Beacon Falls Conservation Commission (BFCC) held a Community Forum dedicated to "Great Open Space."

The commission's vision of open space is for residents and families to be outdoors together, in every season; it is essential for community health and quality of life. The forum brought the community and the conservation commission together with a stellar line up of professionals.

The forum's objectives included: to inform the community of open space opportunities in Beacon Falls, to invite residents and community leaders to ask questions of experts, to gain support from the community with conservation initiatives, to team with town officials to reach mutual goals and to develop and advance an open space plan.

The program included a keynote address by Commissioner Gina McCarthy, State of Connecticut Department of Environmental Protection, followed by a panel discussion on open space opportunities. The panel, moderated by Commissioner John 'Jack' Betkoski, State of Connecticut Department of Public Utility Control, included Seth Lerman, Resource Conservationist, National Resource Conservation Service; Elaine LaBella, Land Use Director, Housatonic Valley Association (HVA); and Samuel Gold, Senior Planner, Council of Governments Central Naugatuck Valley (COGCNV).

For more information about the Beacon Falls Conservation Commission go to their web site, http://home.comcast.net/~bfcc-ct/site/.

Siting Council, continued from page 1

In the simplest of terms, the scope of the Siting Council's exclusive jurisdiction is to provide siting review with respect to proposals to develop large-scale electric utility infrastructure (such as power plants, sub-stations, and high-voltage transmission lines) and specific types of telecommunications facilities including cellular telephone towers. Although seldom invoked, our jurisdiction also includes certain hazardous waste facilities and ash residue disposal areas.

The public mission of the Siting Council is to act as an independent judicial arbiter that objectively balances the statewide need for these projects, at the lowest reasonable cost to consumers, with the need to protect the environment and ecology of the state. And that's where you, as members of local municipal land use boards, come in.

Municipal Involvement

In full recognition of the critical value that local input has to issues of siting, the Connecticut legislature was careful to provide for multiple opportunities for municipalities to engage in meaningful participation and provide input to the Siting Council process.

Perhaps the most important input occurs before an application is even filed with the Siting Council, during what is often called the municipal consultation period.

State law requires that an approval (certificate) from the Siting Council must first present information about the project to the host municipality. If a project is within 2,500 feet of a neighboring municipality, the applicant must also provide project information to that municipality.

The applicant must make a good-faith effort to meet with the chief elected official (CEO). Once this is done the applicant may not file with the Siting Council until 60 days pass in order to permit the town sufficient time to study the proposal. This is where the first opportunity arises for local officials to become meaningfully engaged.

As a practical matter the CEO often refers the applicants to a key member of his or her staff; say, the town planner. Of course each town is different, but generally the applicant will be directed to meet with the various boards that will have an interest in the project based on the nature of the proposal.

It is during this time period (which again must last no less than 60 days) that local boards should fully scrutinize the proposed project. This is your time to ask questions, make suggestions, and express concerns.

Frankly, your engagement during this time is critical. By fully scrutinizing the proposal you may well cause the applicants to modify the application that is ultimately filed with the Siting Council.

"...and serves to underscore the point that the participation of local municipal boards is more than simply invited – it's essential and crucial to our work."

The second important opportunity for municipalities to be involved in our process comes when the application is filed at the Siting Council.

"To Be (a Party) or Not to Be?"

Once an application is filed with the Siting Council, municipal participation can take one of two different forms. For the purposes of this discussion I will call them "comment only" and "party participation."

Every application for a Certificate from the Siting Council involves a hearing. We hold the hearing at a suitable facility as close to the affected community as possible.

Once an application is received and a hearing is scheduled, the Siting Council Chairman sends a letter to the host municipalities' CEO alerting him or her to the hearing schedule and explaining the different ways that the municipality may become involved.

The Chairman's letter explains that the municipality may either offer comments at the public hearing or become a party to the evidentiary proceeding.

It is important to understand that with each proceeding there is both an evidentiary proceeding session and a public hearing session. (Of note, the Council's evidentiary hearing often occurs during the afternoon and the public hearing occurs during the evening of the same day.)

Siting Council, continued on page 4

Siting Council, continued from page 3

The evidentiary hearing functions much like a court of law. Rules of evidence apply which means that once applicants and participants present their case they must also make themselves available for cross examination. During the public hearing session persons may speak (comment only) without concern for cross examination but also may not cross examine others.

All municipalities in which projects are proposed to be sited are permitted by law to become a party (party participation). As alluded to above, being a party brings significant legal privileges and prerogatives, but also some responsibilities.

For example, the Siting Council requires that all evidence be given to the Council and all other participants, including the applicant, several days before the evidentiary hearing. Ex parte communications, whether with Council staff or Council Members, are prohibited. And such party participants are required to respond to interrogatory questions presented by other participants, according to a set schedule.

Still, there are some other factors that should be considered before a municipality chooses not to become a party. With respect to projects that involve electric transmission line proposals there is a $25,000 municipal participation fund to assist in legal expenses. This fund may only be accessed if a municipality is a party. And in the end, if a municipality appeals a decision made by the Siting Council to Connecticut Superior Court, such appeal may be dismissed for failure to exhaust administrative remedies if they did not fully participate when the matter was before the Siting Council.

Lastly, with respect to how a municipality may participate in Siting Council proceedings, I wish to point out that there is a provision {C.G.S. Sec. 16-50x.(d)} which permits municipalities to issue an order to "regulate and restrict" certain types of electric utility infrastructure. This process has been seldom invoked but may be useful to local concerns in certain instances.

Transparency of Process

All creatures of government have a shared duty to provide for a fully transparent process. But this is especially true of agencies, such as the Siting Council, that review and deliberate upon highly-contested cases and render decisions that have the potential to leave people disappointed or unhappy.

In such circumstances, allowing for all stakeholders to see the record develop and have confidence in the integrity of the process is vital.

In today's world transparency of process often means providing for public access via an easily navigable web-based platform. We think our website achieves that goal.

We post and maintain the complete evidentiary record for every contested case proceeding on our website [ct.gov/csc]. Within our "pending proceedings" section you will see a listing of every pending case and can review its associated record of evidence. You will also see easy-to-use links that you can use to email the assigned siting analyst, and access the forms necessary to become a Party to the proceeding. You can also review the application documents and all the evidence submitted by all participants.

Other notable aspects of our website are that you can read and review every decision and order ever issued by our agency (organized both by town and docket number) and you can register for e-alerts so that you receive notice whenever we issue an agenda for a future Siting Council meeting or the minutes of a past meeting.

Summary

The Siting Council serves an important public mission, balancing the potential environmental impact of certain types of infrastructure projects with their need (or benefit) to serve statewide interests. This work is often difficult and challenging, but we do our best to gather information and input from every possible source before rendering any decision. We also make every effort to do this work in an open and transparent fashion.

I hope this short introduction to our agency is helpful to you and serves to underscore the point that the participation of local municipal boards is more than simply invited – it's essential and crucial to our work. If and when an opportunity arises for you to do so, we hope you will choose to fully participate in our process so that we may together make the best possible decisions for the betterment of our beautiful state.

S. Derek Phelps is Executive Director of the Connecticut Siting Council.

Journey to the Legal Horizon

by Janet P. Brooks

As a follow-up to my column in Spring, 2007 the Editor has asked me to address the trial court decisions issued in 2008 on the exemptions to the Inland Wetlands & Watercourses Act.

The question whether wetlands agencies have correctly applied the exemption provisions of the wetland law came up in a number of trial court decisions in 2008. One wetlands agency has completed two separate court enforcement actions where the statutory exemption was implicated. One agency action was upheld by the court; the other was not. One applicant claimed its proposed golf course was exempt. Each of these cases will be discussed in this column.

To begin, trial court decisions are binding on the parties in the case. Trial court decisions are not like Appellate Court and Supreme Court decisions which establish a precedent to be followed by all wetlands agencies. The trial court decisions are generally not officially reported, which means it can be more difficult for you to locate a decision.[1] Trial court decisions can provide guidance. Taken as whole, they measure "the pulse" of hot topics in litigation. Lastly, they may not be final. Appeals may be underway which means a binding precedent may be forthcoming from a higher court.

The trial court decision in Lussier v. Pomfret Inland Wetlands and Watercourses Commission[2] is succinct and a model of clarity. The decision, comprising five sentences, sets forth the facts, the applicable law and the legal conclusion. Mr. Lussier applied to the commission for a determination that his selective timber harvest was exempt from wetlands regulation. Instead of issuing a determination ("yes, it is exempt" or "no, it is not"), the commission issued a permit for the activity and attached fourteen (14) conditions. The judge disclosed that he reviewed the statutory exemption for agriculture, General Statutes § 22a-40 (a) (1), the statutory definition of agriculture found in § 1-1 (q), and the municipal wetlands regulation. The court concluded the selective timber harvest was exempt and remanded the matter to the commission with an instruction to issue a ruling that it is permitted by right and to attach no conditions.

A wetlands agency would be hard pressed to find a better outline of how to proceed in ruling on an exemption. Turn your attention first to the statutory section (and your equivalent municipal regulation). If the person is claiming an agricultural exemption, examine section 1-1 (q) of the General Statutes. Here, Lussier was claiming his selective timber harvest activities were exempt. Unclear whether forestry falls within farming? The answer lies in § 1-1 (q); forestry is explicitly included. What about selective timber harvest? Examine the second sentence of § 22a-40(a)(1): clear cutting of timber (except for the expansion of agricultural crop land) is not part of the exemption. Selective cutting is not excluded from the exemption. It is part of forestry and, hence, exempt.

Issued the same day in another courthouse was the decision in Watertown Fire District v. Woodbury Inland Wetlands and Watercourses Agency,[3] which addressed the exemption provision for water companies, set forth in General Statutes § 22a-40(a)(5). Perhaps the water company exemption is even less familiar to you than the farming exemption. "Water company," just like "agriculture," has been defined in the state statutes. The wetlands exemption directs you to the definition in § 16-1 of the General Statutes. The definition, in relevant part, includes "every person owning, leasing, maintaining operating, managing or controlling any pond, lake, reservoir, stream, well or distributing plant or system employed for the purpose of supplying water to fifty or more consumers." § 16-1(a)(10). Developers who are constructing water systems for fifty or more consumers fall within the exemption. Do all of the developer's activities at the site fall within the exemption? No. Section 22a-40 sets out "construction and operation . . . of dams, reservoirs and other facilities necessary to the impounding, storage and withdrawal of water in connection with public water supplies..." § 22a-40(a)(5).

The Watertown Fire District, which the court determined is a water company by referring to the statutory definition in § 16-1, proposed to remove sediment from a river. This activity is undertaken every five years. The water company

Legal, continued on page 6

Legal, continued from page 5
deems it necessary because the sediment backs up floodwaters behind a dam in the river after heavy rains which would result in contamination of the water company's wells and damage to the pumps. The water company had previously applied for and received permits from the wetlands agency to undertake this work. The water company deemed a previously granted permit and conditions so onerous as to render the permit unusable. This time the water company sought a ruling that its activity was exempt. The agency denied the ruling claiming the water company failed to establish the exemption. The trial judge examined the water company exemption in § 22a-40(a)(5), the municipal regulation and the definition of water company in § 16-1. The judge concluded that the statutory exemption specifically exempts specified activities of water companies from the jurisdiction of wetlands agencies. Here, the court found that the purpose of dredging is to repair a problem caused by a dam which causes sediment to disrupt the operation of the water company. The fact that the wetlands agency did not believe the Fire District had established its right to the exemption did not prevent the court from examining the facts in the record and applying the exemption law.

One trial court decision interpreted the portion of the exemption law that exempts certain specified activities, including golf courses, if they don't "disturb the natural and indigenous character of the wetlands or watercourse..." § 22a-40 (b)(2). Note this criterion (non-disturbance of the natural and indigenous character of the wetlands/watercourse) can not be imposed on the activities listed in the "a" section of the exemptions, such as, the farming and the water company exemptions. In River Sound Development, LLC v. Inland Wetland & Water Courses Commission,[4] the applicant proposed to construct 221 houses, a golf course, roads and associated infrastructure in an area known as "The Preserve," located primarily in Old Saybrook. On appeal for the denial of the wetlands permit, the applicant argued that the golf course fell within the exemption. The trial court examined the language of § 22a-40(b)(2) and the record. The trial court concluded that the agency found that the construction of the golf course would disturb the natural and indigenous character of the wetlands and thus the exemption was not applicable. This case is being further appealed.

On the enforcement front, two trial court decisions were issued in August assessing the validity of the Fairfield wetlands agency's interpretation of the agricultural exemption provision in two different situations. Note: both of these trial court decisions have been appealed. In Conservation Commission v. Red Eleven, LLC d/b/a Twin Oak Farms,[5] the trial court had ruled in 2007 that not all farming activities of the defendant fell within the statutory exemption. This included filling in of a vernal pool, the draining and piping of wetlands, and the installation of a culvert and a weir. The trial court then conducted a hearing on the remediation of the property and issued its decision in July, 2008.[6] The trial court ruled that restoration, i.e. back to pre-violation conditions, was possible on much of the site and ordered the removal of piping and non-wetlands soils. The court imposed a cash bond in the amount of $300,000 to be filed with the clerk of the court. A third party independent monitor is required to monitor the restoration efforts and report to the court and parties weekly. In deciding to impose a penalty, the court acknowledged the significant costs for remediation, but found the violations were egregious, the defendant refused to comply with municipal cease and desist orders and that several wetlands were permanently destroyed. The court imposed a penalty of $25,000. What will

Legal, continued from page 6
prove far more costly to the defendant is the court's award of a reasonable attorney's fee to the wetlands agency and the environmental intervenor.[7]

The Fairfield wetlands agency's enforcement action against a homeowner taking steps to prepare her property for a horse barn, paddock and training area was in large part unsuccessful. The trial court in Conservation Commission v. DiMaria,[8] found that the defendant's activities and contemplated uses of her property exempt. The trial court found that the agency lacked courtesy and understanding in not allowing the homeowner an extension of time to respond to a cease and desist order. The agency's implication, at trial, that Mrs. DiMaria claimed the exemption as a pretext, the court deemed absurd. The court found no clear cutting occurred. The court held that she should have sought a declaratory ruling that her activities were exempt. However, her failure did not alter the exempt status of the work. In preparing the upland for the horse farm, the court found that the defendant inadvertently pushed fill into the wetlands. While the court ordered the fill removed, which the defendant had already agreed to do, the rest of the agency's order went beyond restoration of the property. The planting of 100 native trees and 100 native bushes, as well as the construction of a stonewall (which hadn't previously existed) were deemed by the court overreaching. No civil penalty was imposed; nor were attorney's fees awarded.

What can be discerned from these cases? Without exception, the trial court proceeds headfirst into the language of the statutory exemption. Each court lined up the facts of the administrative record (in the case of appeals) or the exhibits and testimony of the witnesses (in the case of the enforcement actions). A determination was made: do the facts fall within the scope of the exemption? The judges don't do this work without the statutes and regulations in front of them and neither can you. Your discourtesy will not be rewarded. When you do the work of matching up the facts of the proposed activity or the actions to the statutory exemption, your hard work will be rewarded.

Endnotes

1 Many lawyers subscribe to legal research tools, such as Westlaw or Lexis, through which unofficially reported cases can be downloaded. For those of you eager to read the trial court decisions addressed in this article, 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. In endnotes, the official citation to each case will be provided.

2 Lussier v. Pomfret Inland Wetlands and Watercourses Commission, Superior Court, judicial district of Windham at Willimantic, Docket No. CV 07 4006358 S (August 5, 2008).

3 Watertown Fire District v. Woodbury Inland Wetlands and Watercourses Agency, Superior Court, judicial district of Waterbury at Waterbury, Docket No. CV 07 4013054 S (August 5, 2008).

4 River Sound Development, LLC v. Inland Wetland & Water Courses Commission, Superior Court, judicial district of Middlesex at Middletown, Docket No. CV 06 4005349 S (February 19, 2008).

5 Conservation Commission v. Red Eleven, LLC, Superior Court, judicial district of Fairfield, Docket No. CV 04 4001044 S (April 4, 2007).

6 Conservation Commission v. Red Eleven, LLC, Superior Court, judicial district of Fairfield, Docket No. CV 04 4001044 S (July 25, 2008).

7 The trial court requested affidavits from the town's law firm and the intervenor's to determine the amount of the attorney's fees to be awarded.

8 Conservation Commission v. DiMaria, judicial district of Fairfield, Docket No. CV 05 4009431 S (July 21, 2008).

– CACIWC's 31st Annual Meeting

Large Turnout of CT Commissioners and Professionals Attend

Conservation and inland wetlands commissioners, commission staff and other professionals from throughout Connecticut gained valuable information through workshop attendance, display viewing, and networking at CACIWC's 31st Annual Meeting and Environmental Conference held on Saturday November 8, 2008 at the MountainRidge in Wallingford. We thank all of who attended – for your willingness to educate yourself, and for the many conservation efforts you make on behalf of your community.

Erik Mas presents an advanced workshop on storm-water management.

♦ Keynote Address

Karl J. Wagener, Executive Director of the Connecticut Council on Environmental Quality (CEQ) was the keynote speaker. Although small in size, CEQ is the state agency charged with the important task of monitoring trends in conservation and environmental protection, while advising the Governor, General Assembly, and other state agencies on environmental policy. His presentation, Is Connecticut Really Doing Enough to Conserve Land and Scenic Resources, reviewed the conclusions of CEQ's recent review of Connecticut's inland wetlands program, along with some of the latest data on efforts to conserve farmlands, along with forests, meadows, wetlands and other important habitats.

Karl Wagener delivers the keynote address.

Mr. Wagener's keynote address also challenged commissioners to share information on their activities and experiences with the Department of Environmental Protection (DEP) and CACIWC so that other commissions can learn from their efforts. His address was enthusiastically received and contributed greatly to the Conference's positive spirit and to the success of the entire day.

♦ Workshops & Displays

Twelve excellent, well-received workshops were given by specialists and technologists, professionals in their respective fields. A number of new advanced workshop topics were presented, along with special forum for municipal inland wetlands agents. We thank workshop leaders for contributing their time and expertise to strengthen local land use decisions. Many exhibits by commercial vendors and non-profit agencies provided additional and interesting educational materials for commissioners. Your evaluation forms told us how much you liked the workshops and displays.

We agree - they were valuable! But we strive to improve with your help. Please let us know how you feel we can improve our 2009 Conference.

We thank the staff at MountainRidge for the great accommodations and wonderful food. Bottom line: a great day was had by all! See you at our 2009 meeting!

Attorney Janet Brooks discusses recent wetlands court cases.

CACIWC's 31st Annual Meeting and Environmental Conference

♦Awards

Congratulations! Award Recipients received the recognition of their peers.

CACIWC President Alan Siniscalchi (l) presents an award to Sheryl McMullen (r) of Vernon.

Sheryl McMullen, Chairman of the Vernon Conservation Commission received the award for **"Commissioner of the Year."** Ms. McMullen was recognized for her project management approach to implementing the conservation recommendations in the Vernon Plan of Conservation and Development (POCD). She first identified all potential conservation actions for her commission, established a plan of actionable annual goals, and then methodically guided the implementation of these goals. Ms. McMullen, who has served on the Vernon Conservation Commission since January 2000, and was appointed chairman in 2005.

Vernon Conservation Commissioners (from left) Sheryl McMullen, Scot Sierakowski and Tom Ouelette with Alan Siniscalchi.

The Vernon Conservation Commission received the award for **"Commission of the Year."** Under the guidance of their chairman Sheryl McMullen, the commission has implemented the conservation recommendations in the Vernon Plan of Conservation and Development (POCD). Working in cooperation with other town commissions, the commission also completed many important projects including development of an increased upland review area within the inland wetlands regulations, implementation of a scenic road ordinance within the Planning & Zoning regulations, completion of a town-wide vernal pool inventory, and the establishment of a process that allows conservation commission review of development proposals within open space priority areas.

Alan Siniscalchi presents the "Commission Staff of the Year" award to Trish Viola of Sherman CC.

Trish Viola, Administrative Assistant of the Sherman Inland Wetlands and Watercourse Commission received the award for **"Commission Staff of the Year."** Ms. Viola was recognized for more than 12 years of dedicated service in support of the Sherman Inland Wetlands and Watercourse Commission. Her ability to communicate her knowledge of the regulations enables both contractors and citizens alike to quickly understand the application process. For the commission itself, she serves as an invaluable administrative resource, from the tracking of dates of all applications to ensuring commission compliance with appropriate statutes, and conducting research on new issues. Her tireless, effective and pleasant service is a model for all towns to follow.

Many thanks to Rod Parlee for his conference photography!

Topsoil for Constructed Wetlands *by Tim Gould and Thomas Peragallo*

Editorial Board Note: A critical component of successful wetlands creation or restoration projects is appropriate wetlands substrate. Introduction of amended topsoil, high in organic content, is often specified to foster plant growth, air and water movement and nutrient availability. The addition of compost to mineral soils increases organic matter and improves soil properties. The following article is a Fact Sheet from the New Hampshire Association of Natural Resource Scientists [NHANR] regarding compost-amended soils for wetlands mitigation projects.

Manufactured soils are a creative source of topsoil for use in constructed wetlands or in wetland restoration projects. These soils are normally produced by mixing on-site or off-site mineral material, with compost from various sources. Industry experts recommend the following soil characteristics for most constructed wetlands.

The ideal manufactured soil will provide adequate plant nutrients, healthy microbial activity, unrestricted infiltration and physical stability. These qualities will help ensure rapid plant establishment, high plant survivability, improved floodwater retention, resistance to erosion and absorption of pollutants. Experience has shown that wetland formation is accelerated by application of a high quality wetland soil substrate.

There are three key components that the compost industry experts focus on when making wetland soil:

1) Organic Matter Content: Leaf compost is generally used to increase organic matter and make wetland topsoil. Leaf compost can vary from 25% to 40% organic matter depending on the source. Typically, leaf compost is incorporated in a ratio of 1:1 with loamy topsoil that has an organic matter content of about 5% or it is blended in a ratio of 2:1 (two parts compost) with loamy subsoil that has negligible organic matter content. Since regulatory guidelines suggest organic matter content for constructed wetland soil as high as 20%, it is important to select compost that is high in organic matter content. Although 20% organic mater content* in the final soil mix is the regulatory standard, many consider 12% organic matter to be adequate for constructed wetlands.

2) Soil Texture: The texture of the mineral soil portion in the final soil mix is critical for proper permeability, moisture holding capacity, and resistance to compaction or subsidence. The most commonly recommended USDA textural classes include: sandy loam (SL), fine sandy loam (FSL), silt loam (SiL) or loam (L).

3) Likely Seed Bank: Determining seed bank can best be achieved by knowing your material sources. Visiting the compost facility will reveal factors that contribute to likely seed content. For example, the thoroughness of the composting operation such as turning frequency, method of turning, and feedstock sources can easily be determined from a site visit.

Other soil characteristics are important for assessment of the soil's long-term capability to store and release nutrients and to provide adequate rooting. Careful sampling followed by chemical and physical laboratory analyses is necessary to assess these characteristics. In addition, it is recommended to sample for background levels of important nutrients or contaminants such as metals in order to determine management objectives, such as the regulation of pH. These other characteristics are:

- **Cation Exchange Capacity (CEC):** CEC is a measurement of the soil's ability to absorb and release many of the primary plant nutrients that occur as cations (Ca, Mg, K, NH4, etc.). A CEC of **20 or more** is recommended for best results. A general rule of thumb is that a soil manufactured from compost, having 15-20% organic matter will have an adequate CEC.
- **Bulk Density:** Bulk density is the mass per unit volume of the whole soil, including pore space, so it is a reflection of porosity. Bulk density impacts the resistance to plant roots and the ability of air and water to move within and through the soil. For constructed soils the recommended range of bulk density is **1.05 to 1.17 g/cc** or 1600 to 1800 lbs./cubic yards as a delivered.
- **Soil pH**: Soil pH is a measurement of the hydrogen ion concentration in the soil solution. It is commonly referred to as "acidity" or "alkalinity". The soil pH determines the availability of nutrients and other chemical constituents. A soil pH of **6.5 to 7.5** is recommended for manufactured wetland soils. The specific needs of the selected plant material

must be determined and the pH adjusted as needed for optimum growth of plants.

- Application Depth: An application depth of 8-12" (manufactured soil) is recommended for best results in constructed wetlands. For in-kind replication, the topsoil thickness in the replication should be equal to the topsoil thickness in the wetland to be impacted.

**US Army Corps of Engineers - New England District Mitigation Guidance for New England District Mitigation Plan Checklist, January 2007; page 11, Section F. Topsoil. The pdf link is: http://www.nae.usace.army.mil/reg/Mitigation%20Plan%20Checklist%20Guidance.pdf.*

Tim J. Gould is the Vice President of Agresource, Inc. 100 Main Street, Amesbury, MA 01913. Phone: 978-388-5110. Email: tgould@agresourceinc.com.

Thomas Peragallo is chair of the New Hampshire Association of Natural Resource Scientist's Education and Research Committee, PO Box 110, Concord, NH 03302, Phone: 603-899-6502, Email: tperagallo@stompit.net.

CACIWC's ListServe: A Rapid Response Vehicle for Your Questions

Example: A Recent Question About ***Wetlands Markers*** *Demonstrates How Commissioners and Staff can Make Use of the ListServe as an Information Resource.*

A posting was recently published on CACIWC's ListServe from a planning staffperson asking for information on suppliers of wetland markers and possible designs. The questioner noted that their Town was considering requiring applicants to better delineate conservation areas. They were looking for the type of marker that gets mounted onto existing trees or PT lumber posts, and was small and circular in design.

Ten responses to the ListServe notice were quickly received. The responses cited three suppliers of markers, as well as marker design specifications. For example, the Milford Inland Wetlands Commission uses a 4-in diameter aluminum disk imprinted with the words "Milford Inland Wetlands Boundary." The Ridgefield Conservation Commission has three kinds and sizes of markers for open spaces and conservation easements, depending on location and need for visibility of the sign.

The three suppliers or markers that were cited are: Quality Name Plate, Inc., East Glastonbury CT, www.qnp.com; Nutron-OSM, N. Olmstead, Ohio, www.nutron-osm.com; and Ben Meadows catalog, surveying accessories section, or www.benmeadows.com.

If YOU would like to take advantage of this information resource, subscribe to CACIWC's ListServe. Notify Janice Fournier, CACIWC's ListServe Administrator, at fournijs@gmail.com to receive a registration form and the ListServe guidelines.

Coventry's Municipal Rain Garden Demonstration Project *by Karen Filchak*

In 2006, the Coventry Planning and Zoning Commission adopted zoning regulations that limit the amount of impervious coverage that building lots may have in the Coventry Lake Area. The regulations were adopted to decrease the quantity of stormwater, and the pollutants that it carries, from entering Coventry Lake and to increase natural infiltration into ground water systems that maintain flow rates in area streams.

Homeowners in the Coventry Lake Area may be allowed to increase their impervious footprint for a structure of pavement area if a rain garden or similar infiltration feature is installed and sized to accommodate the additional runoff. The Coventry Town Planner's office has information on these various options and the steps necessary to calculate and determine if the solution will work.

Rain gardens serve as stormwater features and are simply depressions in the ground and contain certain plants that can tolerate occasional 'wet feet' as well as dry periods. Plants can be selected to enhance wildlife habitat, provide food for birds and attract butterflies. Driveways or roof runoff can be directed to these planted depressions that encourage the water to seep into the ground rather than quickly drain off the property and contribute to local flash flooding and water pollution.

In June 2008, the Town of Coventry installed a Municipal Rain Garden Demonstration Project. Dr. Michael Dietz, formerly of the CT Nonpoint Education for Municipal Officials (NEMO) program, was responsible for the initial project design. Many town employees, past and present, and volunteers were involved with various phases of the project planning and implementation. The rain garden has been acting as a natural infiltration area for storm water runoff from the town hall roof while serving as a model for residential application.

Coventry Director of Planning and Development, Eric M. Trott, indicated that, "We are very excited about this volunteer-based project finally coming to fruition. It will serve as an important example to the community and region at large on the benefits of infiltration methodology that will demonstrate how the new zoning regulations can function for the benefit of both the homeowner and environment." Questions regarding the project can be directed to Eric at etrott@coventryct.org or calling (860) 742-4062.

For questions on rain garden construction, contact Karen Filchak, Extension Educator, UCONN Dept. of Extension - email address: Karen.filchak@uconn.edu.

Reference: "Rain Gardens: A How-to Manual for Home Owners"; http://clean-water.uwex.edu/pubs/pdf/home.rgmanual.pdf.

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

NON-PROFIT
U.S. Postage
PAID
Permit No. 59
Vernon, CT
06066

Fall 2008

The Habitat

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

Printed on recycled paper

31st Annual Meeting & Environmental Conference

See pages 8 and 9.