The Habitat

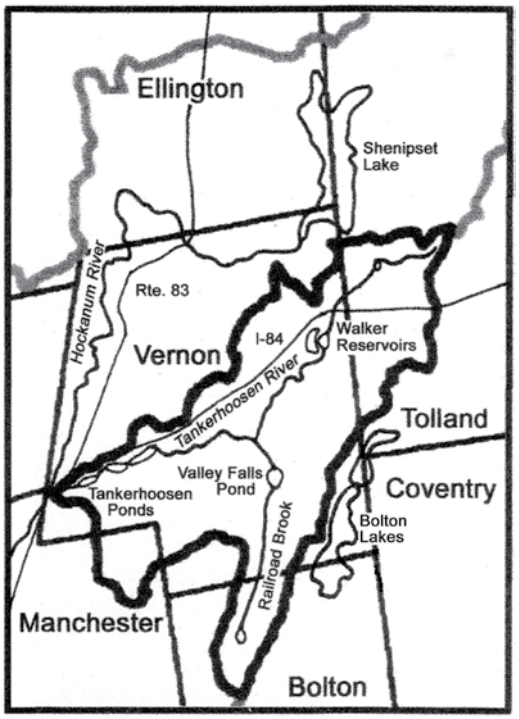
A newsletter of the Connecticut Association of Conservation and Inland Wetlands Commissions, Inc.

winter 2011 *volume 23 number 4*

Vernon Conservation Commission Implements Town-wide Invasive Aquatic Plant Management Program

by Thomas Ouellette, Vernon Conservation Commission

The Town of Vernon, led by the Conservation Commission and the Department of Parks and Recreation, has been engaged since 2008 in a program to proactively identify, monitor, and control populations of non-native invasive aquatic plants within two principal watersheds, and to plan for their removal. Concerns relate to the exclusion of native aquatic vegetation by proliferating non-native species, and to the resulting oxygen depletion and elimination of fish and wildlife habitat in surface waters. Impairment of recreational activities, i.e., swimming, boating, and fishing, are also of concern. The town's coordinated effort, which includes both professional field investigations and volunteer surveys as described below, may be instructive to other communities striving to protect the health of their rivers and ponds.



Hockanum River and Tankerhoosen River Watersheds.

Vernon is traversed by two rivers, the Hockanum and the Tankerhoosen. The Hockanum River originates at Shenipset Lake, extends through Rockville and southern Ellington, reenters Vernon at the location of the Town's Water Pollution Treatment Facility, and then flows more than four miles south to Manchester. Within Vernon, the Hockanum River, which transits industrial, commercial, residential and natural environments, is designated by the Connecticut Department of Energy and Environmental Protection (DEEP) as impaired for recreation and for habitat for fish, other aquatic life and wildlife.

The Tankerhoosen River is a tributary of the Hockanum River, with headwaters in Tolland. From Walker Reservoir East near I-84 Exit 67 in Vernon, the Tankerhoosen extends approximately five miles to its confluence with the Hockanum River at the Manchester town line. It is fed by a number of streams, including Railroad Brook, which originates at Bolton Notch Pond in Bolton and flows through Valley Falls Pond, a recreational impoundment within Vernon's Valley Falls Park. The upper 3.5 miles of the Tankerhoosen River, which crosses through the pristine woodlands of the Belding Wildlife Management Area, fully support recreation and habitat for fish, other aquatic life and wildlife, as designated by DEEP. These waters sustain Class-1 wild trout habitat, one of only two such designated trout management areas east of the Connecticut River. The lower reach of the river, which is influenced by residential and commercial development, is designated impaired habitat for fish, other aquatic life and wildlife.

Vernon, continued on page 2

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.

www.caciwc.org

Vernon, continued from page 1

In the summer of 2008, variable leaf milfoil *(Myriophyllum heterophyllum)* was discovered growing along the shores of Valley Falls Pond, as confirmed by Aquatic Control Technology, Inc. (ACT) of Sutton, MA. ACT also confirmed that both milfoil and fanwort *(Cabomba caroliniana)* were abundant in Walker Reservoir East. While both plants, which propagate by fragmentation, have the potential to populate downstream areas, particular concern surrounded the threat of the aggressive fanwort to trout habitat. Vernon subsequently contracted with Dr. George Knoecklein of Northeast Aquatic Research of Mansfield, CT to further survey those two ponds and the three Tankerhoosen River impoundments listed above to determine the extent of infestation. Dr. Knoecklein also conducted shoreline surveys of Walker Reservoir West, Eckers Pond and South Street Pond. (The Walker Reservoirs are not water supply reservoirs.) The surveys were conducted in August of 2009.

Survey results were presented to the Vernon Conservation Commission in a public forum. Dr. Knoecklein confirmed ACT's observations, and reported milfoil and fanwort immediately below the Walker Reservoir East dam, but found no non-native invasive plants in the six other ponds. The meeting included discussion of options for removal of the milfoil from Valley Falls Pond and milfoil and fanwort from and Walker Reservoir East. Mechanical harvesting was rejected due to the potential for fragmentation, as was suction harvesting due to the projected expense. Winter drawdowns were ruled out because of the rapid recharge of the ponds and the potential adverse impacts on beneficial species. Introduction of sterile grass carp was rejected due to concern about their likely nutrient enrichment of, and potential escape from, the ponds. Consequently, the use of herbicides was approved by the Town and permitted by CT DEEP, with slow-release fluridone (Sonar) used in Walker Reservoir East and 2,4-D (Navigate) in Valley Falls Pond. The herbicides were applied by ACT in June 2010. Fluridone is the only herbicide shown to be effective in controlling fanwort, while 2,4-D is the preferred treatment for milfoil. Both are systemic herbicides that are trans-located by the plant into root and shoot tissues, thereby providing multiple years of control (Knoecklein).

Dr. Knoecklein conducted follow-up inspections in 2011. He found no non-native invasive plants in any of the larger Tankerhoosen River watershed ponds, including those that were resurveyed from 2009, with the exception of very small specimens of variable-leaf milfoil in Walker Reservoir East. The limited, selected use of herbicides in 2010 solved an urgent need. Given the slow rate at which the milfoil has returned, it is anticipated that suction harvesting in 2012 will be a cost-

Vernon, continued on page 13

CACIWC's 34th Annual Meeting
Connecticut Commissioners and Staff Participate in Successful Annual Conference

Despite massive tree damage and widespread power outages throughout Connecticut from the historic October snow storm, the Wallingford MountainRidge conference facility opened in time for CACIWC's 34th Annual Meeting & Environmental Conference held on Saturday, November 12, 2011. Most of the Connecticut conservation and inland wetlands commissioners who attended the conference had been without power for several days to a week or more. Some municipal staff and other professionals had struggled to run their offices for days without phone and internet service.

Despite these adversities, many returned to our annual conference to help us celebrate this year's conference theme of, "Celebrating Five Decades of Environmental Conservation and Habitat Protection." This theme recognizes the many contributions made by Connecticut commissioners and staff in the decades since the 1961 enabling legislation authorizing the formation of municipal conservation commissions in Connecticut.

Daniel C. Esty, Commissioner DEEP, Key Note Speaker
Photo courtesy of "Moments in Time Photography"- Brenda Cataldo

Keynote Speaker
CACIWC was pleased to host **Daniel C. Esty, Commissioner of the Connecticut Department of Energy and Environmental Protection (DEEP),** as the keynote speaker of our 34th Annual Meeting & Environmental Conference. Commissioner Esty discussed the challenges faced by his newly reorganized agency during the historic October snowstorm while recovering the preceding Tropical Storm Irene. He inspired the crowd with his vision of how to better integrate energy and environmental policies and help Connecticut to build a sustainable and prosperous 21st century economy. Commissioner Esty emphasized the value of dedicated local conservation and wetlands commissioners and staff in continuing their local habitat preservation efforts in partnership with the DEEP and other agencies.

Commissioner Esty was appointed by Governor Dannel P. Malloy in March, 2011 to serve as Commissioner of what was then the Connecticut Department of Environmental Protection (DEP). He became Commissioner of DEEP when that agency came into being in July 2011.

Prior to becoming Commissioner, Esty was the Hillhouse Professor of Environmental Law and Policy at Yale University. He also served as the Director of the Yale Center for Environmental Law and Policy and the Center for Business & Environment at Yale. Commissioner Esty, who holds a BA from Harvard, an MA from Oxford, and a law degree from Yale, is the author or editor of numerous books and articles on environmental policy issues and the relationships between environment and corporate strategy. Commissioner Esty is a native of Connecticut. His career included serving in a variety of senior positions for the US Environmental Protection Agency as well as practicing law in Washington, DC and serving as an advisor on the 2008 Obama Presidential campaign and transition team.

Workshops & Displays
Four newly organized workshop tracks were introduced at this year's annual conference: Open Space & Conservation Biology, Land Use Law & Legal Updates, Best Management Practices & Procedures, and Low Impact Development & Sustainability.

These four tracks included a total of twelve informative workshops lead by experts in various fields of interest for conservation and wetlands commissioners and their staff. These covered a variety of topics relevant to Connecticut commissioners including emergency authorization procedures and wetlands law updates, invasive

annual, continued on page 4

annual, continued from page 3
diatoms and changing mammal population dynamics, concepts in low impact development and best management practices, along with new approaches to sustainable site design and use of sustainability in

Attorneys Mark Branse, David Winn and Janet Brooks presenting workshop on Wetlands Law Update and Q&A for 2011. Photo courtesy of "Moments in Time Photography"- Brenda Cataldo

town planning. We thank all the workshop leaders for their time spent preparing and presenting these well-received forums. Over two dozen commercial entities and non-profit groups provided a rich array of displays to further inform visitors of current issues relevant to their work and volunteer efforts. The CACIWC Board of Directors has begun a detailed review of the evaluations forms submitted by participants of this conference. In addition to informing us of their opinions of the educational sessions, the participants also provided valuable suggestions for workshop topics for next year's conference. To allow other members the opportunity to submit ideas for workshop topics and other suggestions, the CACIWC Annual Meeting Committee has decided again to maintain the AnnualMtg@caciwc.org email throughout the year. Please keep those suggestions coming! We thank the staff at MountainRidge for hosting the conference again this year and extend our sincere appreciation to our 2011 conference sponsors. We look forward to seeing you again at our 2012 Annual Meeting and Environmental Conference!

From L to R, Edward Pyznar (CT DEEP Environmental Conservation Officer), Brett Bogus (CT DEEP Volunteer), Rod Parlee (CACIWC Director), Daniel C. Esty (Commissioner DEEP), Katherine Dugus (CT Agriculture Experiment Station). Photo courtesy of "Moments in Time Photography"- Brenda Cataldo

Awards

Two annual CACIWC awards were given at the Saturday November 12, 2011 ceremony.

Anita Goerig, vice-chairperson of the Beacon Falls Conservation Commission received the 2011 **"Conservation Commissioner of the Year"** award. Ms. Goerig, who served on the Conservation Commission both as its Vice-Chair and Chair of Community Outreach, was recognized for her many contributions to the Town of Beacon Falls. Anita tirelessly works to support all the Conservation Commission's activities. As Chair of Community Outreach, she strives to advance the Conservation Commission's natural resource planning initiatives by educating the stakeholders on the value of these resources and the importance of engaging the community and its leaders of its efforts.

Ms. Goerig works with other advocates to create opportunities to promote habitat conservation and environmental awareness among the residents of the Town of Beacon Falls. During 2011, she worked to expand the annual community forum into a two-day environmental event by coordinating with school officials, securing sponsors, and recruiting an impressive panel of speakers, awards, and other activities. Her almost single-handed efforts to organize and manage this event brought important information on conservation and environmental advocacy to many residents including the many students who participated in the Discovery Day events scheduled the following day in a local park. CACIWC was pleased award this special honor in recognition of her dedicated efforts on behalf of her town.

annual, continued on page 5

annual, continued from page 4

The Norfolk Conservation Commission received the 2011 **"Conservation Commission of the Year"** award. We all have witnessed the fine work of many commissions since the Connecticut General Assembly passed enabling legislation fifty years ago authorizing the formation of conservation commissions within Connecticut municipalities. Despite this legislative authority and our long-term advocacy, many towns have not created separate inland wetlands and conservation commissions. In 2005, the Norfolk combined Conservation Commission/Inland Wetlands Agency established a subcommittee to create a natural resources inventory for Norfolk. The Natural Resources Inventory Subcommittee became the separate Conservation Commission in February 2009. This young commission worked to not only inventory Norfolk's natural resource, but to work to conserve its pristine habitats through many outreach and educational initiatives.

One major priority is the commission's efforts to educate the town on invasive species. Their initial efforts included a media recognized project on Town Hall property to replace large existing barberry and burning bush with native shrubs and flowers donated by the Northwest Conservation District. They have continued their efforts to address many important invasives through well publicized programs that include free native replacements. Ms. Shelley Harms, who serves as the Conservation Commission Chair, deserves special recognition for her zealous leadership of this inspiring group. CACIWC was very pleased recognize the many efforts of one of Connecticut's youngest commissions by selecting it as the recipient of our 2011 Conservation Commission of the Year award.

Attendees at the CACIWC's 34th Annual Meeting & Environmental Conference were also surprised by two special recognition awards.

The first was a **Lifetime Achievement Award** given to recently retired DEEP wildlife biologist **Julie Victoria** for her more than three decades of service on behalf of Connecticut's endangered and threatened species. Julie began her career in 1979 serving with the Young Adult Conservation Corps (YACC). She was hired as a part-time worker with the DEP Deer Program in January 1979 and became a DEP seasonal employee

annual, continued on page 6

annual, continued from page 5

in May. In 1985, Julie joined what was known as the DEP Non-harvested Wildlife Program (Wildlife Diversity Program) and focused her efforts on the preservation of Connecticut raptors, shorebirds, reptiles and amphibians.

Julie Victoria (Retired from DEEP) receiving Special Award from Alan Siniscalchi (CACIWC President). Photo courtesy of "Moments in Time Photography"- Brenda Cataldo.

Julie's dedication was seen in her willingness to place herself in the environments of the species that she protected including rappelling out the top of the Traveler's Tower in Hartford to check and tag the latest Peregrine Falcon chicks. The continued success of her efforts will be assured by the productive relationships that she forged with other wildlife agencies and organizations and the many volunteers that she inspired. CACIWC was honored to recognize her years of dedication to the protection of Connecticut's threatened and endangered species and their habitats.

The second **Lifetime Achievement Award** was given to another recently retired DEEP official, **Steven F. Tessitore** for his many years of dedicated service toward the preservation of Connecticut's inland wetlands and watercourses. Steve served as a DEP soil scientist, having received his MS degree in Forest Soil Science from the University of Massachusetts. Mr. Tessitore spent many years as a supervisor in the Connecticut DEP Environmental Permitting & Enforcement Section and developed an understanding of the challenges faced by many CACIWC members in their efforts to issue and enforce environmental permits.

However, Steve is best remembered by our members for his service as supervisor in the DEP Inland Water Resources Division. In addition to tracking wetlands enforcement activities, he strived to bring the best education and training efforts to Connecticut municipal wetlands agency commissioners and staff. He and Darcy Winther produced a widely-recognized wetlands training DVD that received a Telly Award for excellence. With the training of hundreds of Connecticut wetlands commissioners and staff and the production of their second DVD, Steven can enjoy his retirement knowing that he has made a lasting impact on Connecticut inland wetlands habitats. CACIWC was pleased to honor Steve with this special award.

Journey to The Legal Horizon *by Attorney Janet Brooks*

Substantial Evidence Sufficient to Support Wetlands Agency Denial: *Proceed with Caution*

AvalonBay Communities, Inc. v. Inland Wetlands & Watercourses Agency, 130 Conn. App. 69 (2011)[1]

In July the Appellate Court issued its decision affirming the Superior Court's overturning of the Stratford inland wetlands and watercourses agency denial of an affordable housing apartment project. This case was included at the CACIWC annual meeting workshop on 2011 legislation and case law update. The discussion was enhanced by comments from Steve Danzer, a Professional Wetlands Scientist, Soil Scientist, and former staff to the Town of Stratford, who attended the workshop. Steve has agreed to continue our musings in writing for this column.

Janet: The Connecticut Appellate Court's most recent AvalonBay decision continues the trend that began with the Connecticut Supreme Court's reasoning in *River Bend Associates, Inc. v. Conservation & Inland Wetlands Commission.*[2] That ruling includes the following statements: "Evidence of general environmental impacts, mere speculation, or general concerns do not qualify as substantial evidence." [3] Also: "The sine qua non of review of inland wetlands applications is a determination whether the proposed activity will cause an *adverse impact* to a wetland or watercourse." [4]

The application was for a proposed affordable housing apartment project with no activities proposed in wetlands, watercourses or the upland review area. The wetlands agency gave four reasons for denial. The Appellate Court, agreeing with the Superior Court, found no substantial evidence to support any of the reasons and thus reversed the agency denial.

Reason 1: The wetlands and watercourses will be negatively impact by sedimentation. While the courts agreed that there was evidence that some sediment would reach a brook and adjacent wetlands, there was no evidence that such would constitute an adverse impact. The courts ruled that there was nothing beyond speculation of adverse impact. Neither quantitative (amount of flow) nor qualitative (whether the impact would be adverse) evidence was in the record. The agency "could not simply assume that the entry of sediment and siltation would adversely affect the wetlands and watercourse without evidence that it would in fact do so." [5]

Reason 2: "The proposed intense development of the site will clearly alter the hydrologic regime of the wetlands." [6] The courts concluded this was a generalized concern, which did not rise above speculation." The fact that "hydrologic changes would occur did not necessarily mean that those changes would adversely affect [wetlands.]" [7]

Reason 3: The pocket wetland would be totally lost. The courts concluded that the wetland was 360 square feet, consisted of a man-made drainage ditch and earthen berm. The watershed serving the wetland would be reduced from 2.4 acres to .99 acre with sufficient flow to maintain the wetland. "(N)o evidence supports the [agency's] finding that any impact necessarily would be adverse." [9]

Reason 4: "potential for acid generation from the rock exposed by blasting at the site." [10] The Appellate Court reviewed the record and concluded while the agency "was free to reject the plaintiff's [applicant's] expert evidence, which concluded that the potential for environmental impact due to acid rock drainage was minimal, it was not entitled to conclude that the opposite was true without any evidence to justify that conclusion." [11]

Steve, what kind of consideration did the court decision in *River Bend* and specifically the statements about speculative evidence play in preparing your environmental review?

Steve: "Speculation! Expert report dismissed!"

Obviously, no environmental professional wants to hear this message from the courts. But the reality is that every professional (and commission) should be prepared to understand why this may happen to them (frustrating as it is), and equally more important, perhaps every commission should understand how this could happen to their own cases as they make it up the ladder of appeal.

horizon, continued on page 9

horizon, continued from page 8

There were a few interesting background tidbits worth mentioning that may not be so obvious from the decision alone.

First, as much as *River Bend* has been drummed into our heads over the last few years (Prove! Don't Speculate!), the court case at issue here stemmed from a series of two applications that appeared before the Stratford Commission in 2000 and 2001. *River Bend*, the standard that all experts now attempt to emulate, stemmed from a court decision in 2004, three years later. In 2004, the *AvalonBay* case from Stratford was still (and is still) winding its way through the legal system, and the new River Bend standard (Prove! Don't Speculate!) was applied retroactively by the courts once the case made its way to the Superior and then Appellate Court. A carefully crafted, factually dense, pre-2004 record was now reevaluated based upon the application of a new set of standards. From the Commission's perspective, this was most unfortunate.

The real issue in *AvalonBay v. Stratford*, in my opinion, was not whether the Commission's team of experts (disclosure – I was one of them) credibly proved harm to the wetland due to the applicants proposed activities, but whether a Commission's team of experts can credibly testify that the applicant ***has not*** successfully proven that there would be no impact to the wetlands.

Janet: From a legal perspective, the Supreme Court in *River Bend* relied on cases from the 1980s to establish that speculation cannot form the basis for substantial evidence. What ***was*** new in *River Bend* was applying that to denials issued by wetlands agencies. Previously, the case law about speculative evidence meant that applicants, who have the burden of proving they are entitled to a permit, were unsuccessful. Or, it meant that environmental intervenors or abutters to projects, who appealed the granting of a wetlands permit, failed to meet their burden because they offered only speculative evidence.

With *River Bend* we can document the shift to scrupulous examination of the agency's reasons for denial and the search for substantial evidence to support the reasons. The dissent in *River Bend* believed the majority opinion in *River Bend* shifted the burden of proof from the applicant to prove its entitlement to the agency to disprove the applicant's entitlement. The majority opinion denied that it was shifting the burden of proof to the agency. What is clear now is that when

horizon, continued on page 10

horizon, continued from page 9
an agency denies an application on the merits -- because of the impact of the project, that reason must be supported by substantial evidence. That means the following phrases are insufficient as a matter of law: "possible impact," "increased risk," "concern" and similar words. What the agency needs to have in the record are phrases like: "reasonably likely to cause an actual adverse impact to this specific pond/wetland."

In the *Unistar*[12] case the Supreme Court ***has*** upheld an agency's permit denial where the applicant refused to provide information on the impact to wildlife. There, the agency didn't deny the permit because the impact was unacceptable, but because the applicant didn't come forward with evidence to prove it was entitled to a permit.

In the future I expect that agencies will focus on whether the applicant has provided sufficient evidence to prove it is entitled to a permit.

Steve: This legal "War on Speculation", in my opinion, involves the inability for the judicial system to understand the limitations of the scientific method as it is applied to wetlands reviews.

In science, everything is speculation, until proven experimentally. Obviously, in the case of wetlands review there is not time enough to perform a proper experiment, so what we are left with is scientific concepts and patterns that are agreed upon by the relevant co-professionals. For example, all professionals agree that sediment is bad for a wetland, without the need to design an experiment. Someone has to define these types of scientific concepts – ostensibly the experts. What tends to be frustrating is when a court discounts the experts (who are speculating to the best of their ability and training) and then enters the ring themselves. At what point does the court raise the bar too high as to what constitutes proof rather than speculation?

Does this mean that there is ***no role*** for experts in a review, especially when it may be difficult to quantify an impact (despite the fact that an impact, or a lack of impact, is "obvious" to all involved?). Absolutely not!

Experts serve many valuable functions to a Commission. They may offer constructive criticism to the project, help soften the impact of an activity, offer leverage to a Commission to suggest to an applicant a better alternative, and generally speaking, keep the applicant's experts on their toes.

Janet P. Brooks practices law in East Berlin. You can read her blog at: www.ctwetlandslaw.com. Steve Danzer is the principal of Steven Danzer PhD & Associates, a wetlands and environmental consulting firm.

---

[1] As of the date the article was written, the Supreme Court had not yet ruled on the agency's petition for certification, i.e., the agency's request for the right to further appeal. (There is no absolute right to further appeal in land use decisions issued by the Superior Court (trial court)).

[2] *River Bend Associates, Inc. v. Conservation & Inland Wetlands Commission*, 269 Conn. 57 (2004).

[3] Id., 269 Conn. 57, 70-71 (2004).

[4] (Emphasis in original.) Id., 269 Conn. 57, 74 (2004).

[5] *AvalonBay Communities, Inc. v. Inland Wetlands & Watercourses Agency,*
130 Conn. App. 69, 78 (2011).

[6] Id., 130 Conn. App. 69, 78 (2011).

[7] Id., 130 Conn. App. 69, 81 (2011).

[8] Id., 130 Conn. App. 69, 80 (2011).

[9] Id., 130 Conn. App. 69, 86 (2011).

[10] Id., 130 Conn. App. 69, 86 (2011).

[11] Id., 130 Conn. App. 69, 87 (2011).

[12] *Unistar Properties, LLC v. Conservation & Inland Wetlands Commission, 293 Conn. 93 (2009).*

Streamflow Regulations Enacted Into Law!

On December 12, 2011, regulations to conserve streamflows in Connecticut waterways became the law of the state. These regulations represent a vital step forward in protecting rivers and streams for today and tomorrow. Connecticut has now taken the lead in New England and very likely the nation in officially recognizing that naturally flowing rivers and streams are essential to life, health, and economic wellbeing.

To have water in the future, we must protect the water we have now. Draining streams dry for short-term convenience endangers the natural world and all its creatures (including us). For quality of life and economic wellbeing, there is no more valuable resource than water. It is liquid gold.

Connecticut has been trying to devise a fair, effective flow regulation since the 1970s. In 1979, a minimum-flow regulation was enacted, but it was so minimal and so complicated that it had little effect. In 1982, the state passed the Water Diversion Policy Act, which put reasonable limits on most new takings of water but included a giant loophole that grandfathered "rights" to hundreds of millions of gallons of water. (Whether these grandfathered claims to water were really "rights" was never entirely clarified.)

A decade and a half later, threats to water flows led to two prominent legal cases involving the Shepaug River in Litchfield County and the Mill River in New Haven. The legislature created the Water Planning Council in 2001 in the hope that the state agencies with jurisdiction over water could come up an acceptable method of water allocation to forestall complex and expensive litigation.

In 2004, frustrated river advocates, including Rivers Alliance, Nature Conservancy, and Trout Unlimited began a campaign to persuade the legislature and the agencies -- primarily the Departments of Environmental Protection (DEP) and the Department of Public Health (DPH) -- to support a law to protect streamflows. Newly appointed DEP Commissioner Gina McCarthy took the lead. Water utilities manifested a willingness to negotiate.

In 2005, with agreement from all major stakeholders, the legislature unanimously (!) passed An Act Concerning the Minimum Water Flow Regulations. From 2005 to the end of 2011, extremely difficult bargaining and politicking led finally to the regulation now in place.

These are its good features:

- It affirms the public trust in water, which requires a balance between water consumption and water conservation.
- It applies to all watercourses.
- It applies to all major water-supply reservoirs.
- It requires variable flows based upon the seasonal flows that are natural to streams.
- It creates a classification system for river segments, from high-quality water flows (Class 1) to poor-quality water flows (Class 4), thus enabling long-term planning.
- It sets a goal of 75% natural flow for high-quality (Class 2) rivers and fairly protective, variable releases for segments below water-supply reservoirs.
- It guarantees that water supplies will be adequate for public health and economic wellbeing.
- It is flexible, taking into account special needs in times of drought and special conditions faced by individual utilities.
- It provides for public participation in river classification and planning.

These are its weaknesses:

- It does not regulate groundwater diversion, that is, wellfield pumping that draws down streams. The potential for stream impairment or destruction by pumping is high, as witness the extreme damage to the Fenton River at the University of Connecticut in 2005. Lawmakers were clear that they would not pass the regulation if it included groundwater, but several pledged to work to introduce a regulation on groundwater as soon as possible.
- There are a number of significant exemptions, including agriculture and golf courses.
- The timeline for compliance is very long, possibly five years for classification, ten years for compliance, with extensions readily available.
- The regulation is complicated and will be difficult to monitor.

The regulation was rejected three times in 2010-2011 by the General Assembly's Regulation Review Committee before finally passing unanimously in November 2011. Negotiations were intense throughout 2011, managed by Betsey Wingfield of the new Department of Energy and Environmental Protection

streamflow, continued on page 12

streamflow, continued from page 11
(DEEP). Participants included representatives from DPH, Connecticut Water Works Association, Aquarion Water Company, Connecticut Water Company, South Central Connecticut Regional Water Authority, Wallingford Water Department, Connecticut Business and Industry Association, Rivers Alliance of Connecticut, Housatonic Valley Association, Nature Conservancy, and Connecticut Fund for the Environment.

Invigorated by weekly supplies of homemade cakes and other sweets, the participants reached consensus on the following knotty issues (put in bullet and sub-bullet form by DEEP).

- Definitions, including adequate margin of safety (MOS), releases, and outlet structures;
- Exemption provisions including golf courses, small watersheds that naturally yield little water and certain man-made conveyances;
- Release rule criteria and considerations for Class 4 stream segments;
- Classification certainty for existing public water supply diversions, added consideration for classification of potential future water supplies, expanded consultation with other state agencies (including the Department of Economic and Community Development), and additional criteria considering economic impacts, ecological benefits, and adequate MOS as considerations in finalizing classifications;
- Protection of MOS of water utilities while moving long term to full release by:
  - A tiered reduction of releases, with conditions, to provide relief to water utilities that would be left with an inadequate supply to meet current demands, including a self implementing 50% reduction and a greater than 50% reduction subject to implementing an approved plan;
  - Flexibility to reduce releases by 15% during a dry spring in order to maintain reservoir storage for water supply and summer releases;
  - Opportunity for extension of time to comply with release rules;
  - Opportunity to obtain renewable variances to address temporary hardships;
  - Opportunity for customized release requirements through site specific release plans; and
- Simplified reporting requirements including added flexibility and alternative methods.

The regulation and its history can be viewed at the DEEP website. Do a search on DEEP and then "streamflow regulation."

The price of making this work will be eternal vigilance, but the reward will be a unique state water management plan that includes an allocation for the environment. Streamflow protection has been the top priority for Rivers Alliance since 2002, and we are delighted to have something to be vigilant about.

Next step: rules for wellfields!

Margaret Miner, Rivers Alliance of Connecticut, December 2011

Vernon, continued from page 2
effective method for subsequent removal of that species and of fanwort if it also recurs.

Volunteer Program

Based on concern about the potential exclusion of fish habitat resulting from the proliferation of non-native plants, the Conservation Commission organized a volunteer survey in the summer of 2010 to determine whether milfoil and/or fanwort had become established within the mainstem of Tankerhoosen River. Requests for volunteers were issued through local newspapers, the Town website and Community Access television, and in related public meetings. Riparian owners were notified by mail of the planned activities.

The river was divided into four segments extending from Walker Reservoir East downstream to Tankerhoosen Pond. River segments ranged from 0.50 to 1.26 miles in length, and were delimited by road crossings at which volunteers' vehicles could be parked or spotted.

On July 24, 2010, following field training by lake management specialist Mieke Schuyler, field assistant to Dr. Knoecklein, a total of 17 volunteers in four teams surveyed assigned river segments. Volunteers used as reference, *Connecticut's Invasive Aquatic and Wetland Plants Identification Guide* (Connecticut Agricultural Experiment Station (CAES), 2010). Participants walked along the stream banks, entering the water to collect and document the locations of observed vegetation. Surveys were completed for two Tankerhoosen River segments and for Railroad Brook, totaling a length of 3.16 miles. Failure to complete the river survey was due to the difficulty of transiting dense streambank vegetation. Volunteers confirmed the presence of milfoil and fanwort below the Walker Reservoir East outlet, but found no other specimens in the river. Reinspection and removal if necessary of the milfoil and fanwort below the dam will be conducted in 2012.

The Conservation Commission expanded its volunteer program in 2011 to survey small ponds located on tributaries of the Tankerhoosen and Hockanum Rivers that had not been inspected in professional surveys, and that could potentially harbor invasive plants which, if discharged downstream, could threaten riverine habitat. Vernon's GIS specialist Aaron Nash and volunteer George Arthur identified 53 such ponds, ranging in size from 0.02 to 1.78 acres. Twenty-four small ponds are

Vernon, continued on page 14

Vernon, continued from page 13
located in the Hockanum River watershed and 29 are in the Tankerhoosen River subwatershed.

The small ponds were prioritized for inspection according to their potential for affecting river habitat, and to make the most effective use of volunteers' time and efforts. Highest priority was assigned to impoundments either on the mainstems of the Tankerhoosen and Hockanum Rivers or directly connected to them by open channels or culverts, and to impoundments on primary tributaries within 0.5 miles of the either river. Moderate priority was assigned to impoundments on or directly connected to primary tributaries, but located more than 0.5 miles from the mainstems. Stream miles were determined using the GIS measuring tool. Of lowest priority were impoundments on or directly connected to secondary or lesser-order tributaries, and self contained waterbodies.

The Conservation Commission's initial goal in 2011 was to inspect all high- priority ponds in Vernon. However, it was subsequently decided to separate the effort and to conduct a broader assessment of continuing threats to the Tankerhoosen River watershed rather than surveying ponds in the Hockanum River watershed before it is known whether, or to what extent, the Hockanum River was already infested with invasive plants. To support this approach, Dr. Knoecklein's 2011 survey was designed to include an upstream reach of the Hockanum River early in the field season. Results in fact showed the presence of variable leaf milfoil and curly-leaf pondweed *(Potomogeton crispus)* in the river in the vicinity of the Vernon Water Pollution Treatment Facility.

Volunteers sampling for invasive aquatic plants. Photo credit: Thomas Ouellette

Eleven high- and moderate-priority small ponds were identified in the Tankerhoosen River watershed, including 4 State-owned and 7 privately-owned ponds. Access was approved for 5 private ponds and 2 public ponds. Those 7 ponds were surveyed over the course of four weekends in August and September by a total of thirteen volunteers. In addition to the ponds, 0.65 additional miles of the Tankerhoosen River were inspected, continuing the 2010 river survey.

Volunteer training was again conducted prior to the surveys. Pond surveys consisted of the inspection of aquatic plants that could be reached from shore or by careful wading. A canoe was used to inspect one pond. Volunteers again used the CAES field guide. Volunteer identification of specimens collected from the ponds and the river was confirmed by Dr. Knoecklein. No non-native invasive species were found in any of the ponds or in the additional river segments surveyed.

Volunteer efforts in future years will include inspection of the remaining limited number of high-priority ponds in the Tankerhoosen River watershed and the remaining river reaches. A parallel goal will be to inspect the mainstem of the Hockanum River in Vernon to ascertain whether the variable leaf milfoil and curly-leaf pondweed observed in 2011, or other non-native invasive species, are present elsewhere in the river. Based on those observations, it will then be determined whether a benefit is to be gained toward protection of the Hockanum River by inspection of small ponds in the Hockanum watershed. A planned survey of Papermill Pond, an impoundment on the Hockanum River near its headwaters in Rockville, was deferred in 2011. Completion of that inspection may help to determine the source of the milfoil and pondweed found in the river.

It must be noted that a separate but equally important component of Vernon's town-wide program is the continuing assessment of invasive aquatic plants in the Bolton Lakes. The lakes are the largest water bodies in Vernon, draining to the Willimantic River watershed. Inspections conducted at intervals by the Connecticut Agricultural Experiment Station (CAES) and by Dr. Knoecklein have shown the presence of very limited shoreline concentrations of variable leaf milfoil and brittle waternymph *(Najas minor)*. Results of the most recent CAES Lower Bolton Lake survey are pending. Winter drawdowns of various depths have been conducted annually in Middle Bolton Lake for many years to control the growth of variable leaf milfoil there.

Vernon, continued on page 15

Vernon, continued from page 14

In summary, Vernon's joint professional and volunteer programs have enabled a comprehensive, community-wide approach to management of non-native invasive aquatic plants. The Conservation Commission's volunteer surveys were conducted in a logical sequence to sustain volunteer interest and meet realistic goals. Survey goals were prioritized according to the most urgently-needed information, so as to determine the potential impacts of no-action alternatives. The Parks and Recreation Department was an invaluable partner in bringing these issues to the attention of the public and to the Town Council, and in securing successive annual appropriations for professional studies and for volunteer training.

Photos title: Volunteers sampling for invasive aquatic plants. Photo credit: Thomas Ouellette

Vernon's program is a work in progress, meeting and furthering the goals of both the Town's recently-updated Plan of Conservation and Development and the comprehensive Tankerhoosen River Watershed Management Plan. The results to date in the Tankerhoosen River watershed have been largely positive. We must nevertheless continue both the professional and volunteer efforts described above, even as we shift our focus to conditions in the Hockanum River watershed. Ongoing monitoring will best insure that both remaining and newly identified invasive aquatic plant problems may be treated in the most timely, cost-effective and environmentally responsible manner. For more information please contact Tom Ouellette via email at tom.r.ouellette@gmail.com

References:

1) Connecticut Department of Energy and Environmental Protection; Final – May 31, 2011; State of Connecticut Integrated Water Quality Report.

2) Knoecklein, George W., Northeast Aquatic Research; January 14, 2010; Baseline Aquatic Plant Survey for: Tankerhoosen, Dobsonville, Talcottville, Valley Falls, Walker Reservoirs East and West, South Street, and Ecker's Ponds.

3) Vernon Planning and Zoning Commission; 2011; Plan of Conservation and Development; http://www.vernon-ct.gov/plan-of-conservation.

4) Friends of the Hockanum River Linear Park of Vernon, Inc., in association with: Town of Vernon; North Central Conservation District; Rivers Alliance of Connecticut; Hockanum River Watershed Association; and Belding Wildlife Management Area; March 2009; Tankerhoosen River Watershed Management Plan; http://www.ct.gov/dep/lib/dep/water/watershed_management/wm_plans/tankerhoosen/tankwp_final.pdf.

Connecticut Association of Conservation and
Inland Wetlands Commissions, Inc.
27 Washington Street
Middletown, CT 06457

NON-PROFIT
U.S. Postage
PAID
Permit No. 65
Vernon, CT
06066

Winter 2011

THE HABITAT

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

www.caciwc.org

Printed on recycled paper

ANNOUNCING THE CT DEEP MUNICIPAL INLAND WETLANDS COMMISSIONERS TRAINING PROGRAM: SEGMENT 1 ON-LINE COURSE

Segment 1 of DEEP's Municipal Inland Wetland Commissioners Training Program is tailored for new agency members and provides an overview of the Connecticut Inland Wetlands and Watercourses Act, the responsibilities of municipal inland wetlands agencies, a review of the functions and values of wetland and watercourse resources, a lesson on map reading and site plan review, and much more.

This new Segment 1 online training opportunity is comprised of ten modules and provides the same informational content as the day-long, face-to-face workshop. The online format is self-paced; participants may start the course at any time during the calendar year and proceed through the materials in a manner that is convenient for their schedule.

An official announcement of the Segment 1 online course, including registration information for both the online and workshop options, will be provided in a program brochure that will be mailed to all municipal inland wetlands agencies in mid-February. To obtain additional Municipal Inland Wetland Commissioners Training Program information, or to register for the any aspect of the training program, see: http://continuingstudies.uconn.edu/professional/dep/wetlands.html. Information can also be obtained by contacting the DEEP's Wetlands Management Section at (860) 424-3019.

Errata: Fall 2011 issue (Vol.23, No.3), Pgs. 10 (inset) and 13 (last paragraph); "...authorization by the Corps does supersede any other agencies' jurisdiction and does take the place of all other permits required by law." **Should read, "...authorization by the Corps does NOT supersede any other agencies' jurisdiction and does not take the place of all other permits required by law."**