

# The Habitat

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

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## Connecticut's Unique Laws Protect Public Drinking Water and Your Health

by Lori Mathieu, Chief, Water Supplies Section, CT Department of Public Health

**Editor's Note:** *There is much information available on the State of Connecticut website related to public drinking water, including status of water supplies, sources of public water, and water planning. In this article, for ease of reading, specific topics are italicized, and the links to these topics are listed in a table at the end of the article.*

Connecticut is unique in its statewide land use and planning laws that protect the water quality and quantity of our state's sources of public drinking water for human consumption. The State Department of Public Health (DPH), under its Drinking Water Section (DWS), administers planning laws that identify, secure, and protect high quality sources of public drinking water for today and future generations. Together these laws provide high quality drinking water supplies that are plentiful to meet future demand for public drinking water. While these public health laws have been in existence for decades and some as far back as the early 1900s, challenges exist that make these laws more important than ever to protect public health and public drinking water for Connecticut's residents. This article will highlight DPH and its regulatory role over public drinking water systems with a focus on drought and planning efforts.

### Drought Planning – Public Drinking Water Systems

The DPH is responsible to track and update drought status information for each community public water

system (system). DPH publishes system drought status on a monthly basis, while tracking the details with the systems on a weekly basis. Specifically the DPH tracks the state's public drinking water reservoir capacity and

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*“Local municipalities and the water companies that supply their residents’ public drinking water are on the front line when it comes to preparing for and responding to water supply emergencies.”*

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has for decades; this information is updated monthly and shared on the DPH's *reservoir status* webpage. The DPH also tracks and publishes the *current status* of individual public water systems. At one point in the fall of 2016, over 20 Systems reported reduced supplies and issuance of drought water conservation measures and water use restrictions.

During the fall of 2016, three Systems were issued Emergency Orders under the authority of DPH Commissioner Raul Pino to require water use restrictions, water conservation measures, and allow the increased transfer of water beyond current permitted limitations. Under the DPH Emergency Orders, water conservation measures were mandated to include: leak detection and repair, review and reduction of unaccounted for water, conducting water audits for large water users, banning non-essential outdoor water use, etc.

While these Orders are in place, the systems are responsible to work and communicate with the local towns and customers that are affected in order to institute reductions in water use to reduce water demand. These reductions, communications and source water quality and quantity tracking follow the provisions of the water system's emergency and water conservation plans. Further the local towns, in conjunction with the water company, work under local ordinances to enforce the water use reductions. Water

*drinking water, continued on page 8*

Inside	PAGE
CACIWC News	2
Journey to the Legal Horizon	3
Tooling Up to Conserve Water	4
Navigating the Newly Revised General Stormwater Permit (MS4)	6
Vernal Pools	16

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## CACIWC News

“Hey hey, ho ho; we won’t let our planet go!,” shouted the attendees at the Earth Day Rally. While many older members of the crowd reminisced of their first Earth Day rally, this was not 1970, but April 22, 2017. Moreover, this was not your usual group of environmental activists but a group of over 1,000 scientists, academicians, and other supporters who gathered on Mortensen Riverfront Plaza near the Connecticut Science Center for the Hartford Rally & March for Science. As I looked around, I recognized fellow epidemiologists, biologists, and other scientists, many standing somewhat awkwardly...perhaps attending their first rally. This unusual crowd listened politely to scientists, university deans along with Lt. Governor Nancy Wyman, State Senator Beth Bye, and others outline their concerns over massive proposed federal cuts to the US Environmental Protection Agency (EPA), science research funding, EPA enforcement and a rejection of climate change science.

During the past decade, CACIWC has worked with our members and others to increase awareness of the impact of climate change on Connecticut residents. CACIWC accepted the challenge of helping our members develop a more climate-resistant Connecticut back in 2014 when we introduced a new track at our annual meeting with several workshops on climate change issues to educate our member commissions. During his November 15, 2014 keynote address to those in attendance at our conference, Connecticut Department of Energy & Environmental Protection (DEEP) Commissioner Robert Klee reviewed the commitment of his agency to work with our members in support of local efforts. Commissioner Klee further emphasized his agency’s recognition of the urgency of these issues in his December 10, 2014 address to the Connecticut League of Conservation voters, “Make no mistake about it, climate change is already here. We see it in the warming waters and changing fish species of Long Island Sound. We see it in the new insects and invasive plant and animal species on our land and lakes. And we saw it in the destructive force of recent storms that we will all long remember. We have a moral imperative to act for the sake of our planet and future generations.”

Fast forward to 2017, Governor Dannel Malloy held a news conference on March 22 along with leaders in science and environmental advocacy to raise concern on proposed cuts in EPA programs and funding that could include almost \$6 million in federal cuts to the Connecticut DEEP. DEEP Commissioner Rob Klee, who also spoke at the Hartford news conference emphasized that, “Science itself is under attack in the federal budget.” Wesleyan Professor Gary Yohe, who has studied human influence on climate change, also attended the news conference. He emphasized that the proposed federal funding

*CACIWC news, continued on page 11*



# Journey to the Legal Horizon

by Attorney Janet Brooks

## Enforcing the State Wetlands Act at the Municipal Level: “Throw, Tow, Row, Go”

or

### Everything I Know About Enforcement I Learned From My Senior Aquatic Lifesavings Course

*(Disclaimer: you won't learn to rescue drowning people in this article!)*

**E**nforcing the wetlands law often poses challenges similar to those regarding processing exemptions to the wetlands statute. Most commissions don't encounter either topic as frequently as permit applications. That can cause some members to treat enforcement just like applications for permits (wrong, because the burden of proof is not on the violator as it is on the applicant in a permit proceeding) or to freeze like deer in the headlights (not wrong, but not productive either). I'd like to suggest another spectrum of activity as a role model, best exemplified in my opinion, by the motto I learned for saving someone who is drowning: “Throw, tow, row, go.” I use it frequently when discussing strategy with a client, be they individual landowners whose pond or stream has been polluted by neighboring property or a municipal wetlands agency contemplating action.

The motto suggests there is no one approach to water rescue – or as I suggest to wetlands enforcement. Each case has specific facts which will dictate what you can do, or if you have tried one approach and it hasn't proved effective, what you need to do next. In a water rescue scenario, the goal is to rescue the drowning victim with the least amount of risk to the rescuer. Thus, the rescuer enters the water as a last resort (GO). If the swimmer is in distress but can be rescued by standing on the shore and throwing a life preserver on a rope — that is all that is appropriate to do: **THROW**. If the victim isn't able to reach for a life preserver, then the rescuer can use a shepherd's hook or body hook: **TOW**. Only if land-based rescues won't work, because the victim is unable to assist in the rescue and/or is too far away, does the rescuer think about leaving land. And preferably on the water, **ROW**, before in the water, **GO**. So when the loudspeaker called your name at my summer camp to announce a swimmer in distress as your “final examination,” you did not pass the test by

running down the steps to the waterfront on the Delaware River and by simply diving in and swimming back to shore with the victim. You hadn't evaluated why you needed to start with the most risky action.

What is the purpose of wetlands law enforcement? Two-fold. In the first instance you are seeking compliance from a specific violator at a specific site. But equally important you are signaling the rest of the community how you will deal with violator, in general. As one<sup>1</sup> of my colleagues at the Attorney General's Office used to say during DEP wetlands training, a wetlands permit belongs both to the permittee and the community at large. The community has relied on the fact that the agency processed the permit application fairly and those conditions for undertaking the activity now belong to everyone in the town. So it is with curing violations. You want to deter future violations in a fundamentally fair manner, and I suggest, applying no more “force” in enforcement than is necessary to bring the violator into compliance.

I separate the enforcement continuum along the informal vs. the formal divide. The **THROW** and **TOW** actions will correspond to the informal actions and the formal actions are represented by **ROW** and **GO**. Informal actions  
*enforcing, continued on page 12*



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# Tooling Up to Conserve Water

## The Importance of Drought Ordinances in Towns

by Eileen Fielding, Executive Director, Farmington River Watershed Association (FRWA)

The Farmington River Watershed Association is a nonprofit citizens' group that serves towns in the Farmington River's drainage area, which includes 23 towns in northwestern Connecticut. The drought conditions of last summer and fall affected many folks in our valley towns, with some private wells going dry, reduced stream flows, and fish kills reported. Residents adopted voluntary water conservation measures to address diminishing supplies, yet a commercial water bottling plant in Bloomfield withdraws from the same supply. Questions arose regarding the severity of the drought condition, the status of well supply levels, emergency measures and available potable water sources if wells go dry, and whether rules or guidance measures for community water conservation have been enacted.

As executive director of FRWA, I've been in contact for months with people who have been working on the answers to these and many other water questions. That's because the drought happened to coincide with the development of a state Water Plan for Connecticut throughout 2016. Water planning is being coordinated through the Water Planning Council or WPC (representing the Dept. of Public Health, CT DEEP, the Public Utilities Regulatory Authority, and Office of Policy and Management), with input from the WPC's Advisory Group, its Steering Committee, and various work groups. The projected date for adoption of the completed plan by the legislature is June 2018.

Even before the drought, a Drought Plan Workgroup had already been charged with preparing a revised Drought Preparedness and Response Plan for the state. Its revisions are still being drafted, but we believe that the updated plan suggests ways to better address drought at a local level.

The current draft of the updated drought plan has a recommendation that would help people get answers: "... a Drought Plan requires ongoing coordination and preparation to ensure an efficient response to an imminent or existing drought. This coordination hinges on communication among state, regional, and local agencies and public water providers, *and the timely dissemination of clear and succinct information to the public. It is essential that each municipality designate a "Water Coordinator" who will be the primary contact* (my italics). The appropriate person for this position

will vary depending on the organization of local town government; it could be the Conservation Director, Fire Chief, Emergency Management Director, Chief Executive Officer, or another appropriate person."

In a drought, what are the rules or guidelines for communities to implement water conservation? Water utilities themselves can't enforce water use restrictions at all—as some people were surprised to learn last summer. Even the State can't enforce water use restrictions until a drought reaches the Emergency stage (or what the Drought Plan calls "extreme drought"). But in reality, drought intensity varies, hitting some areas hard before the whole state reaches the "emergency" trigger. Until the whole state is in trouble, a hard-hit town has no recourse except voluntary conservation—unless, that is, it has adopted its own water use restriction ordinance.

The state recognized that towns need a local option for restricting water use, and in 2014 provided a Model Water Use Restriction Ordinance, available at: [www.ct.gov/waterstatus/lib/waterstatus/pdf/state\\_of\\_ct\\_model\\_water\\_use\\_restriction\\_ordinance-final.pdf](http://www.ct.gov/waterstatus/lib/waterstatus/pdf/state_of_ct_model_water_use_restriction_ordinance-final.pdf). Properly customized for each town, it can be a useful tool for heading off a local crisis. Greenwich is one town that has adopted its own ordinance, which is a good example of this regulatory approach. (For more information, see related links at the end of this article.) Still, adopting this ordinance may be a hard sell in some towns. An inevitable argument is that it would be bad for business. But consider: if a local water shortage reaches a crisis point, emergency measures must be

*conserve, continued on page 5*

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*conserve, continued from page 4*

taken that may be costly or controversial. That puts a town in the news—in a way that’s bad for business too. Another objection may be raised by private well owners who bristle at regulated use of a source that’s on their property. That’s understandable, especially for wells in crystalline bedrock that may supply only the one property. On the other hand, some private wells draw from a shared aquifer that others depend on. Either way, conservation in a drought still makes sense. And perhaps your town has always successfully handled water shortages with voluntary conservation? So far, so good. But water supply, and the demands we make on it, both change over time.

To allay the concerns that may be raised by members of the community, I recommend that town officials and policy makers read the state model ordinance and a municipal version such as the one adopted by Greenwich. It’s easy to see that a water use restriction ordinance need not be oppressive, and it goes into effect only when absolutely necessary. Why not prevent a crisis by

having the ordinance in place, in case it’s ever needed? Despite the snows of March, Connecticut is still in a state of drought watch or drought advisory, depending on the region. That fact, plus the roll-out of a new Drought Plan and State Water Plan, should inspire us to review how we manage water and communicate with town residents about conservation. Speaking from the perspective of a river protection organization, I hope that inland wetland and conservation commissioners will participate in such discussions at the town level. After all, conserving drinking water ultimately affects what’s available for our wetlands and waterways.

To access a working draft (9/2/16) of the updated Drought Preparedness and Response Plan, go to this page: [www.ct.gov/dph/lib/dph/drinking\\_water/pdf/Drought\\_Plan\\_DOCKET\\_16-10-12.pdf](http://www.ct.gov/dph/lib/dph/drinking_water/pdf/Drought_Plan_DOCKET_16-10-12.pdf).

Comments about ordinances in Greenwich and many other localities are summarized in this presentation: [www.southbury-ct.org/filestorage/994/276/828/966/5600/8228/I\\_1\\_Water\\_Conservation\\_%26\\_Emergency\\_Preparedness\\_Ordinance.pdf](http://www.southbury-ct.org/filestorage/994/276/828/966/5600/8228/I_1_Water_Conservation_%26_Emergency_Preparedness_Ordinance.pdf). 🍂



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# Navigating the Newly Revised General Stormwater Permit (MS4)

by Chet Arnold, Dave Dickson and Amanda Ryan, UConn Center for Land Use Education and Research

The bar is being raised on stormwater management in Connecticut. Stormwater runoff is a major source of flooding, erosion and the pollution of Connecticut's waterways, and is certain to become even more of a problem as climate change progresses. Accordingly, the Connecticut Department of Energy and Environmental Protection (CT DEEP) has recently revised and expanded the principal permit used to regulate stormwater in the state: the "General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems," or MS4. And, while many of the provisions of the permit may fall within the purview of your Town Planner, DPW director, Town Engineer, or Planning and Zoning Commission, CACIWC members can and should take notice of some of the new elements involved in this program.

A tiny bit of background: the 1972 Clean Water Act created the National Pollutant Discharge Elimination System (NPDES), the nation's permitting system for regulating point sources of water pollution. Originally the NPDES program included large point sources such as industrial outfalls and sewage treatment plants. However, as research mounted on the threat of urban runoff, NPDES was expanded in 1990 to include stormwater systems in larger cities (populations over 100,000). This was the "Phase 1" MS4 permit, which in Connecticut included only one municipality, Stamford. MS4 "Phase 2" kicked in in 1999 and covered many smaller communities. Over the past five years, many states have been revising and updating their original MS4 programs and now, after much work and negotiation, CT DEEP has issued a newly revised permit, effective July 1, 2017.

The basic framework of the MS4, which remains unchanged by the new revisions, is comprised of the six "Minimum Control Measures" required of the permittee. These are:

1. Public education and outreach
2. Public involvement and participation
3. Illicit discharge detection and elimination
4. Construction site runoff control
5. Post-construction stormwater management in new development and redevelopment
6. Pollution prevention and good housekeeping for municipal operations and maintenance

However, the particular provisions and level of detail in which these six measures are covered has been significantly expanded. In addition, eight new towns have been brought into the program, making a total of 121—almost ¾ of all the municipalities in the state. Also, for the first time most state and federal institutions such as universities, hospitals and prisons are covered. (A separate stormwater permit is currently being developed for *stormwater, continued on page 7*)

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stormwater, continued from page 6

the Department of Transportation.)

Some of the more notable new aspects of the MS4 include: establishment of “Priority Areas” which require extra stormwater management efforts, public education that speaks to specific causes of pollution to local waterbodies, an enhanced effort to identify and eliminate illicit discharges into the stormwater system, and expanded requirements for monitoring water quality and mapping the storm water system. Finally, there is a great emphasis on “disconnecting” impervious areas from the stormwater system through the use of Low Impact Development (LID) (aka Green Infrastructure) practices that reduce runoff by infiltrating stormwater into the ground.

The LID provisions are perhaps where CACIWC members can most help their communities in the MS4 arena. The permit now requires communities to require LID as the preferred approach to stormwater management where possible, revise their plans and regulations in order to support LID for new development, as well as use LID and other practices to disconnect 1% of existing impervious areas from the stormwater system per year. CACIWC members can be important local advocates and information sources



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for such changes — in fact, a recent study by CLEAR, the *State of LID in Connecticut: Policies, Drivers and Barriers*, showed that local champions (both staff and board members) were the number one driver behind increased LID use. To learn more about that study and see what communities currently have regulations that support these practices, read the latest CLEAR Research Brief, or better yet, go to an interactive “Story Map” at <http://s.uconn.edu/stateoflid>.

In the current economic environment Connecticut communities are struggling with a host of needs, and navigating the various aspects of the MS4 will be a challenge. In recognition of this, CT DEEP is providing support to UConn CLEAR’s NEMO Program to develop and implement a multifaceted support system for MS4 communities. Amanda Ryan, NEMO’s newest educator, will serve as a “Circuit Rider” dedicated to conducting workshops, trainings and consultations with towns focused on the requirements of the new permit. In addition, there will be an MS4 webinar series, a listserv (see below), a website, and technical advice related to measuring impervious cover and detecting improper discharges to the stormwater system.

For those enterprising readers who want to know more about the MS4 program, a recent webinar given by the authors is posted up on the CLEAR webinar page ([clear.uconn.edu/webinars](http://clear.uconn.edu/webinars)). The NEMO team is looking forward to taking on this challenge, and in the process developing a whole new generation of stormwater outreach tools and resources. NEMO will be working with DEEP, the regional Councils of Government, and organizations like CACIWC to tackle this issue so important to the health and welfare of the citizens of Connecticut.

*Questions about the MS4 outreach program can be directed to Amanda Ryan ([Amanda.ryan@uconn.edu](mailto:Amanda.ryan@uconn.edu)). To join the listserv, go to <http://s.uconn.edu/ms4list>.* 🐦



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*drinking water, continued from page 1*

conservation educational materials are also shared by the System with customers in order to address conservation methods, and address questions and concerns.

### **State Drought Planning Efforts**

Currently at the time of this article, the State's six western counties remained at the Watch level (second trigger of four levels; Advisory, Watch, Warning, Emergency) with the two eastern most counties under Advisory. Statewide drought information resources can be found on the State's *Water Status* webpage. *Connecticut Drought Preparedness and Response Plan* requires voluntary water use reductions of 10% at the Advisory Level and 15% at the Watch Level. Additional public water system drought and water conservation related information is found on the DPH's *Drinking Water Conservation* webpage. The State Drought Plan directs an Interagency Drought Work Group to monitor, track and update several drought related categories of information. Reservoir capacity of the state's public water systems is one of those seven categories and is the responsibility of the DPH to track and publish. In addition to tracking system status, DPH tracks steps that are being taken by a public water system to address any reported system reduction in supply. Under its jurisdiction over purity and adequacy of public systems and sources, the DPH continues to work with the state's community systems to address any water quality and/or quantity issues.

### **Public Drinking Water Sources**

Laws exist that protect the over 150 public water supply watershed drainage areas from Sewage Treatment Plant discharges, protect over 100,000 acres of land owned by a water company in those drainage areas, protect over 100 of the state's largest highest yielding ground water supplies through local aquifer protection land use regulation, identify, track and update the state's high quality sources and plan for the future to meet projected demands including planning for drought and other emergency situations. The state's drainage areas to public drinking water supplies cover over 20% of the state's land area. This combination of state laws are unique and work to assure that high quality sources are protected for existing and future public drinking water. A complete listing of *source water protection laws* is available on the *DPH webpage*.

### **Public Drinking Water Systems**

The state's 550 community public water systems serve approximately 2.9 million people with potable drinking water. The State's 85 largest public water systems that serve over 1,000 people have produced individual water

supply plans that plan for meeting existing and future projected needs for water supply over a 50-year period. Plans are updated periodically by the public water systems, are then reviewed by several state agencies and approved. This process is overseen by the DPH and plans have been produced and updated since 1986. These plans include water conservation plans as well as emergency contingency plans.

### **Water Planning Council and the State Water Plan**

The Connecticut Water Planning Council (WPC) is a legislatively created Council with representatives of the Public Utility Control Authority (PURA), Department of Energy and Environmental Protection (DEEP), Office of Policy and Management (OPM) and the DPH. The Council is charged with addressing issues involving water companies, water resources and state policy regarding the future of the state's drinking water supply. Presently the Council is charged with development of a State Water Plan in accordance with 17 specific requirements under Public Act 14-163. This is a comprehensive plan that addresses all uses and needs for water and provides for a balance of all uses.

The State Water Plan is currently under development by the Council with a draft due in July 2017. A final State Water Plan is required to be submitted to Governor Malloy and various General Assembly committees by January 1, 2018. Once finalized and approved, this Plan will provide to the State significant guidance on the future planning and policy concerning all uses of water. WPC and State Water Plan information/available documents can be found on the *WPC webpage*.

### **Water Utility Coordinating Committee**

A statewide initiative to plan for public water supply needs was convened by the DPH in June 2016 under the authority of state statutes. This two year planning process known as the Coordinated Water System Planning (Plan) Process, with membership and leadership provided by the Council of Governments and public water systems, is focused on coordinating public water supply planning efforts locally, regionally and statewide to assure high quality water for future generations. This process is led by its membership which is known as the Water Utility Coordinating Committee (WUCC). There are three WUCC planning regions of the state.

This Plan is to assure a coordinated approach to water supply development over a fifty year period by: assessing problems and issues that concern public drinking water, identifying regions for future water supply service,

*drinking water, continued on page 9*



*drinking water, continued from page 8*

and developing long term regional plans to include water conservation planning, identification and assessment of future sources of high quality water including interconnections. Each of the three WUCC Regions is required to produce a water supply assessment in the first six months, an exclusive service area boundaries document, and an integrated report with a focus to assure high quality supply to meet future demand. Each one of these plans has a public review and comment period with each draft plan found on the DPH webpage noted below. WUCCs hold monthly meetings which are open to the public with agendas and minutes published on the *DPH webpage*.

Presently each WUCC is working toward completion of the first year of the planning process and will be moving forward to draft and produce the Integrated Report for each WUCC Region along with an Executive Summary by the end of the two year planning process in June 2018. Once the WUCC regional plans are complete, a document will be produced that provides for a summary of the WUCC process on a statewide basis. Visit the *WUCC webpage* for more information on Regional meeting agendas, past meeting minutes, and planning documents.

### **Role of Local Entities**

Local municipalities and the water companies that supply their residents' public drinking water are on the front line when it comes to preparing for and responding to water supply emergencies. Drought and water supply emergencies should be part of the local Natural Hazard Mitigation Plan and Emergency Preparedness Plan. This would be accomplished through the adoption of a local water supply ordinance.

The DPH and the WPC endorse the development of a local water supply ordinance. A draft Model Ordinance can be found under the *Water Status* webpage. Coordination between the local water supply ordinance and the public water system's emergency plan is key to effectively communicate with affected customers, share timely educational information, monitor current drought status, and enact/enforce water conservation measures.

Many municipalities have residents that are also served by private wells. Public water systems do not oversee this resource. Officials need to understand that surface waters and groundwater are connected and that the local ordinance should provide actions that protect both public and private water sources. It is critical that municipalities work closely with water suppliers to ensure that

roles and communication strategies are in place before the emergency occurs. Since many towns have residents served by both public supply and private wells, communicating a clear consistent message for your town requires such coordination.

### **Examples of Public Water System Water Conservation Efforts**

Connecticut Water Company (serving 56 towns across the Connecticut)

- **Connecticut Water Company - School Water Conservation Program** Connecticut Water Company (CWC) developed a hands-on educational program to teach third grade students about the water cycle and water conservation. Schools served by CWC have been invited to participate in the program for the 2017-18 school year which will be taught by CWC employees. As part of the program, students will be encouraged to sign a Water Conservation Pledge to conserve water at home. The classes with the highest percentage of returned pledges will be eligible to enter into a drawing to win a free trip to the CT Science Center.
- **Water Drop Challenge** In an effort to help promote water conservation, CWC introduced the 2016 *Water Drop Challenge* which provided a \$30 conservation credit to customers enrolled in the program who reduced their billed water usage in 2016 by at least 10% over the prior year. Nearly 5,000 customers enrolled in the 2016 *Water Drop Challenge*. Overall, about 40% of participants met the goal of reducing billed water usage by 10% or more over 2015. Another 20% of participants reduced their usage but fell short of the 10% goal. In total over 30 million gallons of water were saved by *Water Drop Challenge* program participants in 2016.

South Central CT Regional Water Authority (serving 10 Towns in the Greater New Haven area)

- **Be Water Wise Outdoors** Regional Water Authority (RWA) is working on several initiatives to encourage residents in its service area to "Be Water Wise Outdoors." Besides reinstating its Speakers' Bureau, RWA developed messaging that changes each month, starting with awareness and then moving on to how to be water wise with gardens and lawns, using rain barrels, protecting pools from evaporation, summer and then fall watering. RWA is also working to develop public education information on saving water on landscape irrigation for larger water users.

*drinking water, continued on page 10*

drinking water, continued from page 9

Aquarion Water Company (serving 51 towns in Connecticut with a Main System serving Greater Bridgeport to Stamford and Greenwich)

- **Leak Detection and Repair** There are two main aspects to the water conservation program at Aquarion. The first is to reduce water production through leak detection and repair. For the past several years, Aquarion has had a program to annually inspect the entire 3,000 miles of water mains encompassing all of our public water systems. When leaks are found, they are repaired. This not only reduces that amount of water that is lost in Aquarion's distribution system, it reduces the amount of water produced and therefore the amount of chemical and electric power that is used to treat and pump the water.
- **Customer Education** The second area of focus for Aquarion's water conservation program is customer-facing. Aquarion continually communicates information to their customers on how they can reduce water usage. Messages about fixing leaks, purchasing efficient appliances, managing outdoor water use, etc., are delivered in customer bills, on Aquarion's website, and in their annual water quality reports. Further Aquarion offers rain barrels

to their customers at cost so that they can reduce the amount of water that they use outside the home. Aquarion has asked customers to voluntarily reduce water usage by 20% in response to the past year's drought. In the towns of Greenwich, Stamford, Darien and New Canaan, Aquarion had implemented mandatory outdoor water use restrictions to reduce demand and conserve local water supplies.

With 2.9 million Connecticut residents receiving their water from Public Water Systems and with the continued threat of drought conditions in the state, DPH's role in protecting our water supplies is more important than ever. Ensuring that Connecticut maintains adequate, safe, clean drinking water for its citizens must continue to be a collaborative effort between DPH, PWSs, municipalities, regional water planning and utility coordinating councils, and individual citizens. We are fortunate to live in a state that places a high value and priority on clean, safe drinking water, and backs up those values with laws and regulations that help ensure the quality and adequacy of our water supplies. DPH's Drinking Water Section will continue to lead the State's efforts to preserve and protect this most precious of natural resources for future generations of Connecticut residents.

## DEPARTMENT OF PUBLIC HEALTH AND RELATED WEB LINKS

**Reservoir Status** - [www.ct.gov/dph/lib/dph/drinking\\_water/pdf/Capacity\\_Chart.pdf](http://www.ct.gov/dph/lib/dph/drinking_water/pdf/Capacity_Chart.pdf)

**Current Status** - [www.ct.gov/dph/lib/dph/drinking\\_water/pdf/Status\\_Summary.pdf](http://www.ct.gov/dph/lib/dph/drinking_water/pdf/Status_Summary.pdf)

**Water Status** - [www.ct.gov/waterstatus/site/default.asp](http://www.ct.gov/waterstatus/site/default.asp)

**Connecticut Drought Preparedness Plan** – [www.ct.gov/waterstatus/lib/waterstatus/Drought\\_Preparedness\\_&\\_Response\\_Plan.pdf](http://www.ct.gov/waterstatus/lib/waterstatus/Drought_Preparedness_&_Response_Plan.pdf)

**Drinking Water Conservation** – [www.ct.gov/dph/cwp/view.asp?a=3139&pm=1&Q=387302](http://www.ct.gov/dph/cwp/view.asp?a=3139&pm=1&Q=387302)

**Source Water Protection Laws** – [www.ct.gov/dph/lib/dph/drinking\\_water/pdf/CT\\_Statutes\\_Regs\\_for\\_Protection\\_of\\_DWS.pdf](http://www.ct.gov/dph/lib/dph/drinking_water/pdf/CT_Statutes_Regs_for_Protection_of_DWS.pdf)

**WPC webpage** – [www.ct.gov/water/site/default.asp](http://www.ct.gov/water/site/default.asp)

**WUCC webpage** – [www.ct.gov/dph/cwp/view.asp?a=3139&q=387352](http://www.ct.gov/dph/cwp/view.asp?a=3139&q=387352) ↩



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CACIWC news, continued from page 2

cuts and elimination of climate change science programs was "...not only irresponsible, but immoral to ignore this science because it puts people's lives at risk."

While the CACIWC Board is committed to remaining non-partisan, we pledge to bring the latest scientific information to our members on habitat preservation, endangered species conservation, invasive species identification, and climate change resiliency. After all, loss of habitats, wildlife population changes, and invasive species threats are not partisan issues. As one of the signs I observed among the 200,000 attendees of the April 29, 2017 Climate Change March in Washington, DC states, "It Does Not Matter if You Are Red or Blue, Climate Change Will Affect You!"

In other news:

1. The Board of Directors is reviewing the many valuable comments and suggestions submitted on our 2016 annual meeting survey. If you did not have an opportunity to complete the 2016 meeting survey you can still contact us with your comments at AnnualMtg@caciwc.org. We welcome any suggestions for workshop topics and speakers that you would like us to recruit for our upcoming 40th Annual Meeting and Environmental Conference, scheduled for Saturday, November 18, 2017; please save the date! Watch for additional conference news in upcoming issues of *The Habitat* and on our www.caciwc.org website.

2. One new goal of our revised strategic plan is improved membership communication including our website and *The Habitat*. To help us maintain the value of our publication to our readers, the CACIWC Board of Directors has been using our newly activated Habitat Advisory Committee to help identify topics and articles for upcoming issues. We will be actively seeking new topics for



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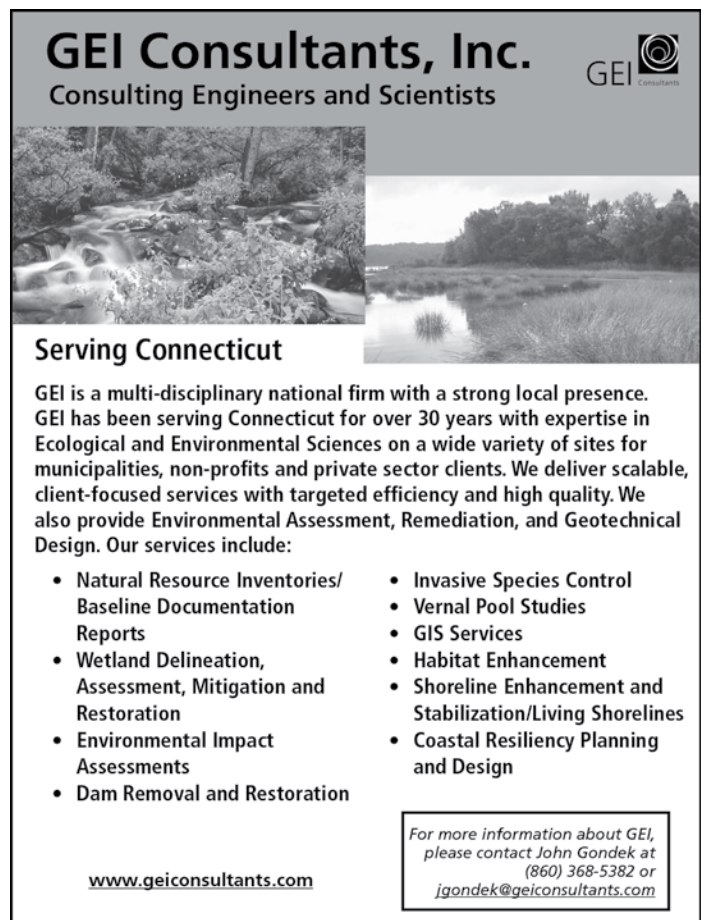
articles from our members, which you can email to us at TheHabitat@caciwc.org along with other suggestions.

3. The Board of Directors appreciated the large number of commissions who renewed their CACIWC membership in association with our 2016 Annual Meeting. For those who have not yet done so, it is not too late to send in your 2016-17 membership dues. A copy of the renewal form and additional information regarding our upcoming 2017-18 membership dues will be posted on our website during June: www.caciwc.org.

We always welcome comments and suggestions on ways to improve our education and outreach efforts. Please do not hesitate to contact us via email at board@caciwc.org if you have questions or comments on any of the above items or if you have other questions of your board of directors. We thank you for your ongoing efforts to protect wetlands and other important natural resources within your town!

Alan J. Siniscalchi, President

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*enforcing, continued from page 3*

are neither set out in the statute nor defined by explicit procedural steps. The formal actions are provided for in the statute and municipal regulations. The action of final resort is the last action on the formal spectrum: going to court or GO. One step removed is ROW: the regulatory actions of (1) issuing a cease, desist and restore order and (2) suspending or revoking a permit.

are simply semi-resistant, such people may need face-time with the agency. Even if they are challenging the agency’s authority or jurisdiction, if they are willing to stop their actions voluntarily, i.e., without the issuance of an order, they are candidates for informal action. Such people can be asked orally or in writing to attend the next regularly scheduled meeting to discuss their construction/activities. The letter is a request for them to appear. At the meeting the chair should lay out the

***Informal actions*** →

⇐ ***Formal actions***

<b>THROW</b> Staff contact alleged violator: telephone/at site/in office	<b>TOW</b> Alleged violator appears before agency to discuss and resolve by agreement	<b>ROW</b> Issuance of cease, desist and restore order or suspension or revocation of a permit and all procedure that follows (hearing to be held; burden of proof on agency to establish violations)	<b>GO</b> Go to court to seek “immediate” court order pending trial (burden of proof on agency)
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In a water rescue the risk is to the rescuer when entering the water to undertake a rescue. In a wetlands enforcement scenario the commission assumes more “risk,” when engaging in formal enforcement activity since the burden of proof is on the commission.

**Informal: staff-initiated** [“Throw”]

The most basic approach is for the commission’s staff person to contact the person or company engaging in the activity (1) without a permit or (2) not in compliance with a permit. If you start with anything but this, you’ll never know if a staff phone call or visit would have sufficed to bring the person in compliance. This is the equivalent of throwing a life preserver to a struggling swimmer who will do just fine with a little assistance of how to get back to shore — or the proper way of conducting the activity. Swiftly resolved, no risk (additional burden of proof) on the agency. Staff will report efforts and response from the violator to the agency while monitoring future compliance. Your goal is: “in and out.” In compliance, and out of your regulatory concern.

**Informal: violator appears before the agency prior to/without issuance of a cease and desist order** [“Tow”]

If the staff isn’t successful at persuading someone that they are conducting a regulated activity and need a permit, or that an exempt activity can’t be undertaken until the agency rules that the activity is exempt, or they

commission’s position of how the activity is a regulated activity or if it may be exempt, how the agency needs to review the request for determination of exemption prior to undertaking the potentially exempt activity. I recommend that the tenor of the discussion be inquisitive and informative against the backdrop of the regulatory requirements. I would not treat the person who voluntarily appears before you as if you were shaming them in the public stocks. If you humiliate someone who voluntarily appears before you, how often do you think others will step up, admit their actions and get back in compliance? That’s right, not many. Remember your job is to get them “in and out.”

If the person does not appear, they have not violated the letter. The letter is an informal action and is not proof of violation. Time to consider formal action.

**Formal: (1) issuance of a cease, desist and restore order or (2) revocation or suspension of a wetlands permit** [“Row”]

If your staff has tried (1) to reason with the person conducting a regulated activity without a permit and (2) the person has appeared before your agency and still been resistant — or (3) has agreed to do something/stop doing something and hasn’t — or (4) hasn’t voluntarily appeared at a meeting, it’s time to step over the divide into formal action. The wetlands statute, with likely

*enforcing, continued on page 13*

*enforcing, continued from page 12*

identical procedures set forth in your municipal regulations, establishes two different methods for an agency to undertake formal enforcement. Which mechanism you choose depends on whether the agency has already issued a permit.

*If no permit has been issued, no permit can be suspended or revoked.*

The only option is to issue a cease and desist order (if stopping the action is sufficient and no remediation or restoration needs to occur) or a cease, desist and restore order (if stopping an action must be accompanied by positive actions of restoring or remediating the property).

*If a permit has already been issued, you have a choice.*

If the permit-holder wants to continue construction, an action to suspend or revoke the permit will get the permit-holder's attention. Revoking the permit can stop the activity, but it can't restore the property. This is effective if the permittee has acted outside of the area it was authorized to undertake the activity. If you want restoration, you will also have to issue a cease, desist and restore order.

Sometimes financing or construction has stalled and the permittee may not care about the permit. Your option will be to proceed with an order.

As space is limited, all of the details of the procedure can't be set out here. It is important to note that you should take deadlines in your regulations seriously. If an order is issued and the agency is not scheduled for a regular meeting in the following ten days, the agency will have to convene a special meeting. The details of the alleged violations that give rise to suspending

or revoking the permit or to the issuance of the order must be in writing in the corresponding legal document (order or revocation notice). At the hearing on each of these, the agency "goes first" and presents the case against the alleged violator. If the agency doesn't establish the violations, there is nothing for the alleged violator to refute and the agency cannot vote to uphold the order.

### ***Formal: Go to court ["Go"]***

To someone unfamiliar with the court system, this may seem an efficient, expeditious way to take care of a wetlands violation. NOT. Except for the handful of cities and towns with in-house attorneys it is expensive. At the outset, the town's attorney will expend (lots of) time preparing legal documents. In addition to that cost, the town will pay the court filing fees, the marshal's fee for service on the parties and ongoing attorney's fees. Yes, there is the opportunity to recoup those costs at the end of the litigation. And perhaps the alleged violator, the defendant, will be encouraged to settle quickly because of the mounting costs. But then again, the same may be true for the town leaders who do not want to pay for the lawsuit as it unfolds.

In addition to the burden of proof being on the agency — as is true in the order/revocation proceedings, the formal rules of evidence apply. While in proceedings before the agency hearsay can be considered (statements made outside of the hearing process, whether oral or in writing, such as "She said . . ." or the emails between two neighbors writing about the alleged violator's action), such statements won't be admitted in court unless they fall into certain exceptions.

However, a court order, if it is needed, will accomplish what you want, as long as there is a person or viable corporate entity with funds to fund the steps in the court order.

Going to court is time-consuming, costly and places higher burdens on the agency. Sometimes it will be necessary to go to court. I hope I have convinced you that you should first explore "throw, tow and row," before you "go."

*Janet P. Brooks practices law in East Berlin. Read her blog at: [www.ctwetlandslaw.com](http://www.ctwetlandslaw.com) and access prior training materials and articles at: [www.attorneyjanetbrooks.com](http://www.attorneyjanetbrooks.com).*

(Endnotes)

<sup>1</sup>Thank you, David Wrinn. 🍀

## The Traffic Engineer

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*vernal, continued from page 16*

regulators. They also express professional opinions about the potential impact the development will have on the physical characteristics of the pool(s) and the amphibians that breed and develop there.

Unfortunately, these professionals rarely have an opportunity to revisit the pools after an application is approved, and a project is constructed. Thus, it is impossible for anybody to know whether these predictions were accurate, or how the amphibians fared post-development. Lacking this information, wetland professionals cannot refine their understanding of how pool-breeding amphibians respond to different types and scales of landscape alterations.

To try and help fill this knowledge gap, in 2007 the Connecticut Association of Wetland Scientists (CAWS) created the “Vernal Pool Monitoring Program.” Each year CAWS members volunteer their time and visit pools that have been enrolled in the program by cooperating landowners, or which are on public lands. Among the data they collect is an estimate of the number of egg masses laid by spotted salamanders and wood frogs, the two most common pool-breeders in Connecticut. Each egg mass typically contains from one hundred to several hundred individual eggs. Approximately 40 pools are currently enrolled in the program.

To date there has been no formal analysis of the data that have been collected under the program. However, we have learned a few lessons:

1. Tree-clearing, grading, and construction have occurred in close proximity to a number of the pools in the program, and we have documented negative impacts including turbidity resulting from sediments exported to the pools during construction, growth of invasive cattails beneath an opened canopy, algae blooms, and the reduction or elimination of pool-breeding amphibian populations. We have also observed that once sediments enter a pool they remain trapped there and are subject to resuspension in subsequent years, causing chronic turbidity. These observations highlight the importance of preserving a properly sized vegetated buffer around a vernal pool to protect it from alterations of critical physical (water) characteristics (e.g., temperature, water clarity, nutrient levels) that can otherwise significantly impact its ability to serve as breeding habitat for obligate amphibians.

2. We have documented a dramatic decline in the wood frog breeding population at one pool where the amount of landscape development during our monitoring has been rather modest. In the spring of 2007 we estimated

that there were 1,000 – 1,250 wood frog egg masses in this pool. That number declined steadily over the years, and since 2011 we have not observed more than 75 wood frog egg masses in the pool. One possible explanation is that a road that was constructed during that time period severed the connection between the pool and previously available terrestrial breeding habitat. If this is true, it highlights the importance of identifying critical terrestrial habitat, and maintaining landscape connections so that these amphibians can freely migrate between the pool and their non-breeding habitat.

Another possible explanation is that, even in pools on stable landscapes, the number of breeding adult amphibians can fluctuate from spring to spring, sometimes dramatically, due to factors such as weather and precipitation patterns in previous years. For this reason we have committed to long-term monitoring of our pools, so that we can better distinguish permanent population declines, if they occur, from natural variability in year-on-year breeding population size. Also, we are monitoring a group of “reference” pools on protected lands to help us better understand whether any population reductions we observe in pools on developing landscapes are due to cover type alterations, or to larger scale factors such as regional precipitation patterns.

*vernal, continued on page 15*

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vernal, continued from page 14

3. Wood frogs typically begin breeding one to several weeks before spotted salamanders. As a result, their eggs often swell and hatch before spotted salamanders have finished breeding, making it impossible to count or even estimate the number of wood frog egg masses in the pool. This makes it very difficult to schedule a spring inspection at a time when all spotted salamander eggs have been laid and individual wood frog egg masses can still be enumerated. Moreover, often by the time that all spotted salamander egg masses have been laid in a vernal pool, water column transparency has begun to deteriorate due to surface pollen and algae, making it difficult to locate all egg masses in a pool. In some years our monitors cannot estimate the number of wood frog egg masses in a pool because they have already begun to hatch, but can only document that wood frog eggs are present or absent. Ideally, we would monitor our pools on a weekly basis in March and April, but our busy schedules do not allow this.

4. Landowner participation in the program has been somewhat tepid, despite our best efforts to make it easy for them to say “yes.” For example, we pledge to not release data in a manner that would allow it to be associated with a particular pool, so as not to impugn participating landowners. Also, all monitoring is done pro bono by CAWS professionals.

### Commissions Can Help

We do not know how often land-use commissions are requesting applicants to participate in our monitoring program. However, for those commissions interested in promoting our program, there are a number of important considerations to keep in mind. First, the request to participate should be made during the application review process, when there is still an opportunity to modify site plans. Importantly, it is necessary to place the subject vernal pool(s) and an access way within Open Space or a Conservation Easement. Without these provisions, our monitors cannot access the pool(s). Second, land-use commissions can only *request* participation in the monitoring program, they cannot *compel* an applicant to participate by making this a condition of approval. Such action would be illegal.

One can argue that landowners, developers, etc. should have a strong interest in the success of the program, since one of its primary goals is to identify development designs that allow for the conservation of pool-breeding amphibians. If the well-documented declines of amphibian populations in Connecticut continue into the future, it is conceivable that more amphibian species will be added to the Department of Environmental and

Energy Protection Natural Diversity Database (NDDDB). This could result in a significant cost to developers, as they will be required to fund surveys for an ever-increasing number of rare species. If only out of financial self-interest, developers should support the conservation of pool-breeding amphibians in order to avoid their listing on the NDDDB. We hope that the CAWS vernal pool monitoring program may offer some insight to how this can be accomplished without interfering with the right of landowners to develop their property.

We plan to eventually examine the data that we have collected and attempt to identify development designs that either allow for or preclude the conservation of pool-breeding amphibian populations. Factors that we will likely consider include the proximity of tree clearing, grading and development to vernal pools, preservation or elimination of landscape connections, and the amount of terrestrial non-breeding habitat that remains ecologically connected to a vernal pool post-development.

We are always looking to enroll more pools on landscapes where some type of development has been approved. We strongly encourage land-use commissions to ask applicants to consider enrolling in the program. For more information on the program visit [www.ctwetlands.org](http://www.ctwetlands.org), or contact Ed Pawlak at [ecosys88@gmail.com](mailto:ecosys88@gmail.com), or 860-561-8598. 🍁



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### Vernal Pools

#### Monitoring to Understand Post-development Impacts

*by Ed Pawluk, Consulting Wetlands Scientist*

**Editor's Note:** *The Connecticut Association of Wetlands Scientists (CAWS) created the "Vernal Pool Monitoring Program" to better understand development impacts on vernal pool habitat. Conservation and Inland Wetlands Commissions can help by encouraging land owner participation in the program.*

**V**ernal pools, sometimes referred to as "seasonal ponds," are an irreplaceable part of our environmental heritage in New England.

Each year, usually in late winter or early spring, (in some cases, in the fall) they fill up with water from snow melt and precipitation, and retain it for several months. They are typically dry for the remainder of the year. As a result of this very unusual wet-dry hydrology, vernal pools provide breeding habitat for a suite of amphibians during their wet phase. They also provide habitat for at least one invertebrate that cannot successfully breed in much more common permanent aquatic habitats that contain fish. The juvenile amphibians that complete metamorphosis and emerge from the pools travel far and wide across the surrounding landscape. There they form a critical base of many terrestrial food webs. Many mammals, reptiles and avians visit vernal pools in the spring to

feed on their concentrated biomass (adults, eggs, larvae). The small size of most vernal pools belies their very significant ecological value.

Because pool-breeding amphibians require both aquatic (breeding) and terrestrial (non-breeding) habitats, their conservation is particularly problematic. Even if there is no direct impact to a vernal pool, the loss of adjacent terrestrial non-breeding habitat to development, or the severing of critical landscape connections by roads, etc. can eliminate a community of pool-dependent amphibians.

#### **CAWS Monitoring Program**

When the development of a property containing one or more vernal pools is proposed, soil scientists and wetland scientists typically investigate these resources and provide their findings to local, state and federal

*vernal, continued on page 14*