UCONN | COLLEGE OF AGRICULTURE, HEALTH AND NATURAL RESOURCES

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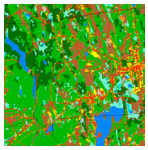
CLEARscapes



CLEAR

A Newsletter of the Center for Land Use Education and Research at the University of Connecticut.

Teaching/Outreach

Climate Corps will Harness the Power of Students to help Towns Plan for Climate Change

Students are increasingly interested in the topic of climate change, which many feel is the environmental issue of our time. At the same time, many communities across Connecticut are struggling with how to adapt to climate change, and how to marshal the resources needed to do so. To address these complementary needs, CLEAR Extension faculty are leading a new multi-departmental collaboration at UConn that will combine classroom

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Photo by the Connecticut National Guard on October 30, 2012, during an aerial assessment of damage caused along the Connecticut shoreline by Hurricane Sandy.

NEMO Program to Help Communities Navigate the New Stormwater Permit

CLEAR's venerable, award-winning NEMO (Nonpoint Education for Municipal Officials) Program is embarking on a five-year program to assist Connecticut communities in complying with the state's revised "General Permit for the Discharge of Stormwater from Small Municipal Separate Storm Sewer Systems," or the MS4 permit. Stormwater runoff is a major source of flooding, erosion and water pollution in Connecticut's waterways, and is expected to become even more of a problem as climate change progresses.

After much negotiation between CT DEEP, Connecticut municipalities and the environmental community, the MS4 underwent a significant expansion and enhancement this July. Eight new towns have been brought into the program, making a total of 121 (almost ¾ of all the municipalities in the state), and for the first time most state and federal institutions are also included. And, while the program remains organized according to its six "Minimum Control Measures," there are important new aspects and requirements involving monitoring, maintenance of town properties, and "disconnecting" impervious areas through Low Impact Development (LID).

The new MS4 permit emphasizes low impact development practices such as this tree box installation on the UConn campus.

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 funding NEMO to develop and implement a multifaceted support program that includes outreach, technical assistance,

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Outreach continued...

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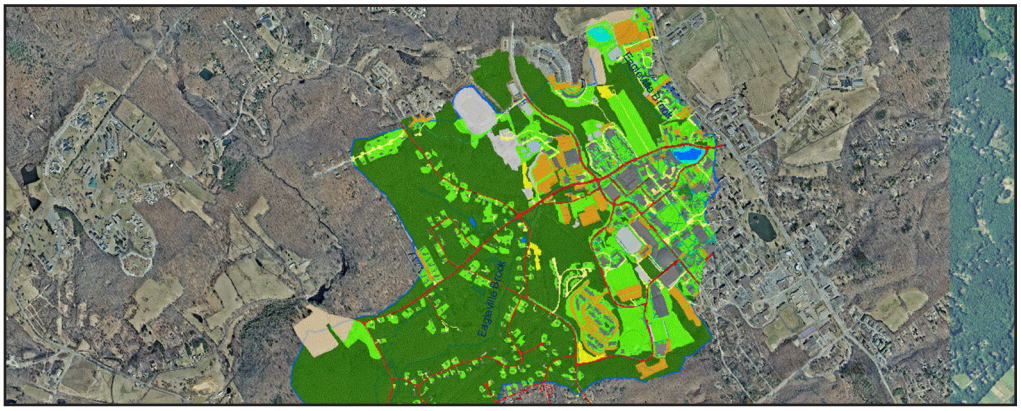
web tools and other resources. To list just a few:

- **MS4 "Circuit Rider"**: a NEMO Extension Educator dedicated to the MS4 support program will conduct workshops, trainings and consultations with towns.
- **MS4 website:** a website far above and beyond the typical regulation website is being developed, as an authoritative and detailed (but not wordy!) guide to MS4 implementation and home for special technical and mapping tools.
- **Webinar series**: CLEAR's webinar series will spin off a special NEMO/MS4 series highlighting different requirements of the regulation and approaches to meet them.
- **Mapping training**: CLEAR's Geospatial Training Program will provide training and tools to help communities meet the new mapping requirements of the permit.
- **Impervious Cover data**: NEMO is working with an outside contractor to obtain high resolution impervious cover data, which will be an enormous asset to conducting the drainage area and impervious area analyses required in the permit.

The CLEAR Water Team (aka NEMO Team) is looking forward to this challenge, and in the process developing a whole new generation of stormwater outreach tools and resources. NEMO will be working with DEEP, regional Councils of Government, and both public and private sector organizations to tackle this issue so important to the health and welfare of the citizens of Connecticut.

Look for an announcement of the website soon. In the meantime you can view the CT DEEP MS4 Fact Sheet online (s.uconn.edu/ms4). Questions should be directed to Dave Dickson (david.dickson@uconn.edu) or Mike Dietz (michael.dietz@uconn.edu). ●



An impervious cover map covering a portion of the UConn campus. Similar mapping is a new requirement of the revised MS4 permit.

Climate Corps will Harness the Power of Students to help Towns Plan for Climate Change pg 1...

instruction and service learning to create a unique assistance program for Connecticut communities confronting climate change.

Students in the Environmental Studies, Environmental Science, and Environmental Engineering majors will be recruited to enroll in a one-year program, the UConn Climate Corps, consisting of classroom teaching during the fall semester and in-the-field work with town officials during the following spring semester. The formal class will be team-taught, and focus on the local and practical impacts and issues involving climate change. In the spring the students will break up into teams of 3 students, each team working with Extension faculty and town leaders to conduct vulnerability assessments, evaluate adaptation options, and plan outreach strategies for the town. This part of the program, called the Municipal Adaptation Assistance Program, or MAAP, builds upon the ongoing work of CLEAR's climate team, Bruce Hyde of Extension and Juliana Barrett of Sea Grant. Interest in MAAP will be solicited during the ongoing Climate Adaptation Academy series of workshops.

The coming year will be spent developing all aspects of the program and developing the curriculum for the formal class. The first full year of the program, which will cover academic year 2017-2018, is expected to include 12-15 students and 4 towns, and expand from there. The new Climate Corps/MAAP program is supported by a grant from the UConn Provost's Office, in support of the Academic Plan goals of Excellence in Undergraduate Education and Public Engagement.

Program website coming soon! Keep your eyes glued to clear.uconn.edu for more details. Questions on the program should be directed to Bruce Hyde (bruce.hyde@uconn.edu) or Chet Arnold (chester.arnold@uconn.edu). ●

Program Updates

Geospatial Training & Technology Programs

- Cary Chadwick, working with (then) PhD student Mike Evans (congrats on the doctorate, Mike!) has conjured up a gorgeous story map based on Mike's research, called ***The Bears are Back: Getting to Know Connecticut's Bears.*** s.uconn.edu/bears.
- The state now has a **complete, seamless lidar elevation dataset**, thanks to CLEAR's Emily Wilson. And even better, the data can be viewed in a number of ways on the **interactive elevation viewer on the CLEAR/DEEP CT ECO** website. cteco.uconn.edu/lidar.
- Dave Dickson and Cary Chadwick are closing in on a beta version of their **new smartphone app *TractNotes***, which simplifies the task of mapping and annotating field data in one fell swoop. Developed with land trusts in mind, they feel that the applications of the app will eventually expand way beyond mapping land properties. The app was developed by students in the UConn Computer Science Department.

Water Programs

- Dave Dickson and Bruce Hyde completed a project for CT DEEP that focused on the **implementation of low impact development (LID) practices in towns of the West River watershed in south central CT**. The project supported the impressive local efforts in the watershed, provided communities with detailed land use recommendations, and helped to polish some new outreach/planning tools for the upcoming "MS4" campaign (front page).
- LID guru Mike Dietz has branched out to look at **water availability for agricultural producers in the state**. Mike is part of at team working on a project funded by USDA and led by CAHNR Associate Dean Mike O'Neill.
- The CLEAR water team of Chet Arnold, Mike Dietz and Dave Dickson each **presented a paper at the Northeast Non-point Source conference in Hartford**: Arnold on LID on the UConn campus, Dietz on his research on salt pollution of groundwater, and Dickson on the NEMO social research on the state of LID adoption in Connecticut.

Land & Climate Programs

- The **Land Use Academy** rolls on. Ten "basic" sessions and one "advanced" session have been held in the first half of 2016, in collaboration with Councils of Government and individual towns throughout the state. clear.uconn.edu/lua.
- The **Climate Adaptation Academy** has been focusing of late on the legal intricacies of climate resilience. A sold-out session in late 2015 resulted in a long list of priority legal issues that are even now being doggedly brought to ground by the CLEAR/Sea Grant climate team of Bruce Hyde and Juliana Barrett. clear.uconn.edu/climate.
- Bruce and Juliana are also conducting a **series of interviews with town officials**, as part of a CIRCA project funded by the US Department of Housing and Urban Development (HUD). The goal is to gain a fuller understanding of the most pressing topics facing town leaders at the local level.
- Our partners at CT Sea Grant have just launched ***Connecticut Beaches and Dunes: A Hazard Guide for Coastal Property Owners,*** **a website** to assist beach property owners and associations deal with the impacts from storms and associated erosion and flooding. The site is based on Maine Sea Grant's Coastal Hazards site and adapted to Connecticut. beachduneguide.uconn.edu.


The Bears are Back: Getting to Know Connecticut's Bears


Connecticut's Coast: Then and Now


The State of Low Impact Development in Connecticut


Connecticut's Changing Landscape


UConn Campus Green Infrastructure Tour


Modeling Site Suitability of Living Shorelines

The CLEAR website now has a Story Map Gallery replete with story maps of many kinds.

Check it out!!!
clear.uconn.edu/storymap

Announcements & Shout-outs...

CLEAR Co-Director Dan Civco.

Geospatial guru Joel Stocker.

Award-winner Emily Wilson.

- **RETIRED:** CLEAR Director for Research Dan Civco is retiring after a career at UConn that was as productive and impressive as it was long. Dan recently celebrated his 40th (not a misprint!) year at the University. He has won a number of teaching awards (including prestigious national awards) and been the go-to remote sensing expert at UConn for decades, including serving as the godfather of Connecticut's Changing Landscape, CLEAR's foundational land cover research project. We knew this day would come, but….ACK!!
- **RETIRED:** Also departing and greatly missed is geospatial wizard and Extension Educator Joel Stocker, who retired in July. Joel has been with UConn for over 25 years and, as a graduate student (of Dan's) in the early 1990's, provided the GIS and remote sensing expertise that made the NEMO program so effective and nationally unique. Joel's latest expertise has been in the use of Unmanned Aerial Vehicles, more commonly known as drones. CLEAR's CGQ (Collective Genius Quotient) just dropped precipitously, although it's far from anemic–see below.
- **CONGRATS** again to Emily Wilson, who, for the second year in a row, won first prize in ESRI's Annual Story Map contest in the Science, Technology and Education category for *CTs Coast: Then and Now*. This year there were more than 1,000 entrants vying for the five first prizes.
- **CONGRATS** to all the students, parents and instructors of the 5th Natural Resources Conservation Academy (NRCA), a unique program for high schoolers around the state run out of the Department of Natural Resources and the Environment (NRE). CLEAR faculty comprise about half of the NRCA teaching cadre. Congrats especially to NRCA creator John Volin of NRE and indefatigable NRCA Coordinator Laura Cisneros. ●

Attack of the Interns

CLEAR had four undergrad interns this summer working on a range of projects involving all three CLEAR program areas. And heeeeeere they are:

Luke Gersz is a senior at UConn, pursuing a dual degree in Natural Resources and History. Luke worked with Cary Chadwick and Emily Wilson to create high quality maps and information for the CT ECO website. Luke also catalogued the availability of open space information and data layers for Connecticut's 169 municipalities.

Tom Martella, a senior in Cognitive Sciences, proved to be the king of multi-tasking. Working with Juliana Barrett, Martella did everything from planting a dune restoration project to helping develop content for a new climate adaptation website.

Will Teas is a senior in Natural Resources and the Environment. Will did stellar work with the CLEAR Water Team, helping to set up CLEAR's upcoming program in support of the new "MS4" stormwater permit just issued by CT DEEP. He also helped expand CLEAR's rain garden app to 10 more states and tested out the new Mobile LID Atlas (still in development).

Joan Bosma is a junior with a major in Environmental Sciences and a minor in Economics and Pre-Law. Joan worked with Bruce Hyde conducting research critical to the launch of the UConn Climate Corps program, which will create an ongoing pool of student-based assistance to help municipalities prepare vulnerability assessments and climate action plans. ●

Summer 2016 CLEAR interns (From left) Luke, Will Teas, Tom Martella and Joan Bosma.

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The UConn Center for Land Use Education and Research (CLEAR) provides information, education and assistance to land use decision makers, in support of balancing growth and natural resource protection. CLEAR is a partnership of the Dept. of Extension and the Dept. of Natural Resources and the Environment at the College of Agriculture, Health and Natural Resources, and the Connecticut Sea Grant College Program. Support for CLEAR comes from UConn and from state and federal grants.

CLEAR