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### New & Noteworthy @ CLEAR

Read about recent projects, awards, websites and other updates.

## Outreach & Training

### "Mashup" Madness New Focus for CLEAR

Chances are that you're familiar with Google Earth and Google Maps. But did you know that these and other "earth browser" technologies can be used in combination with geospatial technologies to allow researchers, outreach professionals and others to share their data, maps and images over the web? This combination of techniques is commonly called a "mashup," a term borrowed from the early days of hip-hop music when existing recordings and sound effects were "mashed" together to form a new creation.



Cary Chadwick of the Geospatial Technology Program helps an attendee of the regional mashup training at Avery Point in Groton, CT this past spring.

Mashup technology holds tremendous promise for broad-based dissemination of a wide variety of research and other information. Basically, any information with a geographic location can be displayed via an earth browser, including data, photos and links to websites and documents. A prominent example is the CT NEMO Low Impact Development (LID) Inventory, a searchable website that uses Google Maps to display information about LID sites across the state. A National LID Atlas, where any of the 32 NEMO programs around the country can create their own entries, just debuted this summer (see related article and image, page 4).

Three CLEAR programs, the Geospatial Technology Program (GTP), the CT NEMO Program and the National NEMO Network, have collaborated to develop mashup training for colleagues in the state and the region. The prototype of the one-day workshop was tested in 2007 with colleagues from the National NEMO, USDA, NGTEN, Land Grant and NOAA Sea Grant networks, and has been fine-tuned in the intervening time. An advanced mashup class for Connecticut professionals was

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## Research

### CLEAR Unveils New Forest Fragmentation Website

Forest fragmentation—the breaking up of large forested blocks into smaller and smaller pieces—is considered by forestry, wildlife, water and social experts alike to have serious implications for the condition of our natural resources, character of our communities and health of our citizens. Researchers, natural resource managers and communities can get a clearer picture of this problem with the release of a new section of CLEAR's "Connecticut's Changing Landscape" project, focusing on forest fragmentation.

The Changing Landscape project, which was recently updated and enhanced, charts changes to the state's landscape between 1985 and 2006. Until now, the project has focused on straightforward change information, including maps and statistics for the major land cover categories of developed land, turf, agricultural fields and forest. The forest fragmentation study goes one step further, using a model that extracts information from the basic land cover about the form (and thus probable function) of the forest as development progresses.

In a sense, while the basic land cover

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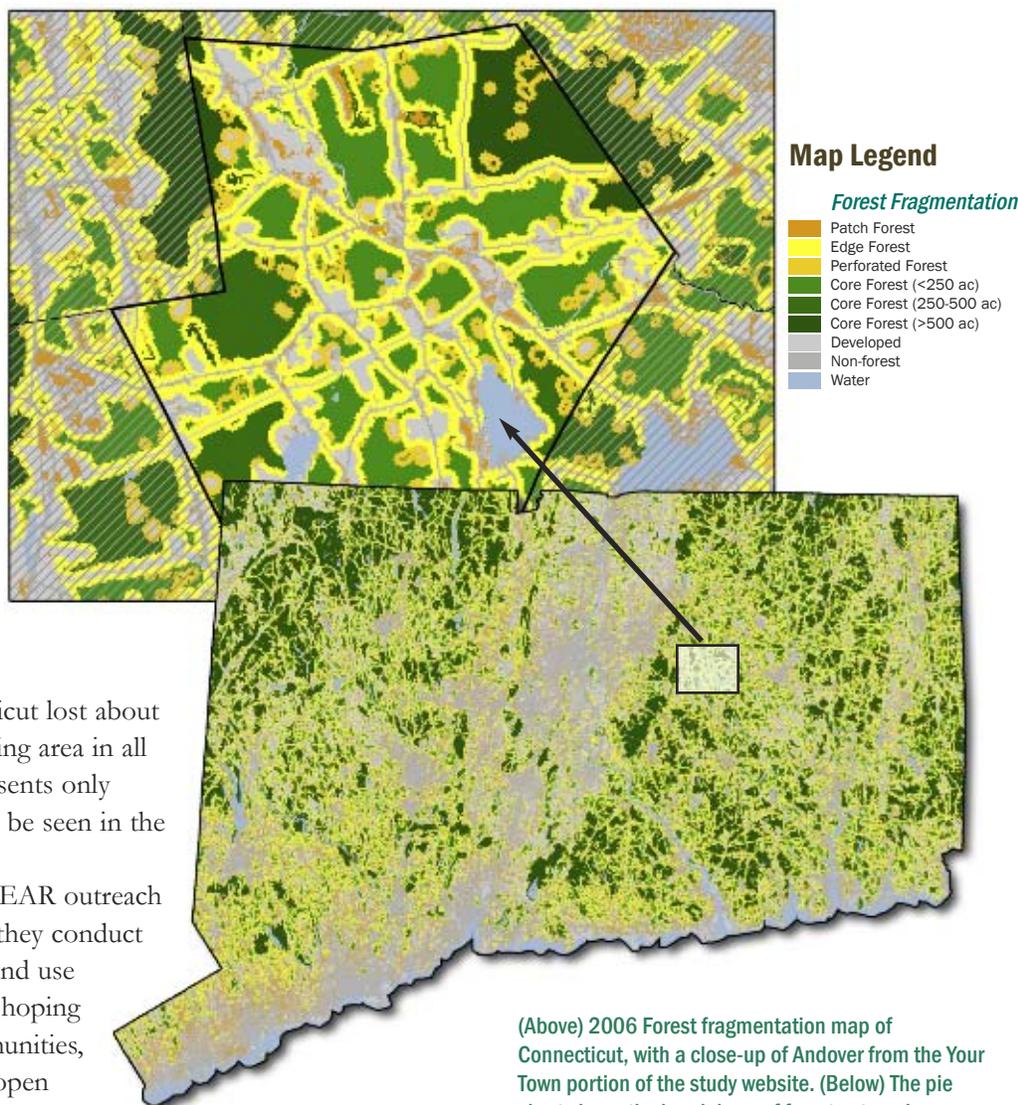
Forest Fragmentation article continued from cover. . .

# Connecticut's Forest Fragmentation

tells us where the *trees* are, the new analysis tells us where the *forests* are. The model was adapted from a U.S. Forest Service model by CLEAR remote sensing specialists James Hurd and Jason Parent, and categorizes forested areas based on how extensively they are divided by development, and other non-forested areas. The categories go from “core” forest relatively unaffected by development, to “edge” and “perforated” forest,” to “patch” forest completely surrounded by development or non-forest. (images, right). Based on existing research, the model uses 100 meters (300 ft) as the distance into a forested area typically influenced by non-forested land uses.

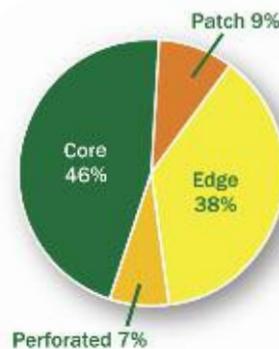
During the 1985 – 2006 period, Connecticut lost about 264 square miles of core forest, while gaining area in all the other categories. This core forest represents only about 46% of the total forest cover, as can be seen in the pie chart (bottom right).

In addition to the website, of course, CLEAR outreach staff will be using the new information as they conduct workshops with Connecticut community land use decision makers and forest owners. “We’re hoping that this information will be used by communities, land trusts, and other entities as they plan open space protection,” says Connecticut NEMO Director John Rozum. Because forest resources, both public and private, provide essential public benefits such as water source protection, carbon sequestration and a myriad of habitat features, communities must plan for growth with conserving these benefits in mind. “This tool will give community leaders a better feel for where to protect, where to restore, and even where to reforest,” adds Extension Forester Tom Worthley. ●



(Above) 2006 Forest fragmentation map of Connecticut, with a close-up of Andover from the Your Town portion of the study website. (Below) The pie chart shows the breakdown of forest categories, statewide, in 2006.

Statewide Forest Types, 2006



Visit Connecticut's Changing Landscape Website at:  
[clear.uconn.edu/projects/landscape/forestfrag](http://clear.uconn.edu/projects/landscape/forestfrag)

# New & Noteworthy @ CLEAR

► **Groundbreaking water protection project begins on UConn campus.** In July, CT NEMO began field work on a project to improve Eagleville Brook watershed, which is located in Mansfield and includes much of the UConn campus in its upper reaches. The project is in response to a “Total Maximum Daily Load” (TMDL) developed by CT DEP for Eagleville Brook. TMDL’s are part of the Clean Water Act, and are usually written using target levels of specific pollutants, like nitrogen or bacteria. In the case of Eagleville, which testing showed to have overall impairments due to stormwater runoff, CT DEP developed an impervious cover TMDL which targets reductions in the amount and impact of impervious surfaces in the watershed. It is the first of its kind in the entire nation, and many believe the wave of the future in water regulation for urbanized watersheds suffering from stormwater-generated maladies. Stay tuned....



In July, CT NEMO staff and partner’s poured over maps and looked into a lot of storm drains as part of the TMDL project.

► **CT ECO is on the way.** A new, cutting-edge interactive mapping website will be unveiled soon that will allow Connecticut residents to access a wide array of digital information about their neighborhood, watershed or town. Connecticut Environmental Conditions Online, or CT ECO for short, is a partnership between CT DEP and CLEAR, funded in part by the Office of Responsible Growth of the CT Office of Policy and Management.

► **Land Use Academy: Down but not out!** The state budget crisis funding axe fell on CLEAR’s Land Use Academy after

three years of funding through the Office of Responsible Growth at CT Office of Policy and Management. The Academy, a partnership of CLEAR, the CT Bar Association, and the Connecticut Chapter of the American Planning Association, provides training for local land use commissioners on basic skills needed to make sound land use decisions. With support from the University, the Academy will continue at least through 2009, albeit at a reduced level. We hope to restore and even enhance the Academy in the future.

► **A new publication on riparian buffers** is available from the CT NEMO and Sea Grant programs for coastal landowners. The pamphlet, “A Planting

Guide for Riparian Sites along the Connecticut Coast,” describes Connecticut’s coastal habitats, the functions and importance of buffers to these habitats, and how to plant a buffer. A companion piece listing plants appropriate for a variety of coastal habitats will be available soon.

► **CLEAR associate director receives national recognition.** The Association of Public Land Grant Universities (APLU) has selected CLEAR Associate Director Chet Arnold to receive the Excellence in Extension award in the Northeast Region. The award is presented annually to an individual who has strived throughout his/her career to achieve benchmarks reflective of excellence in extension educational programming. Chet is being recognized for his work in co-founding and running the CT NEMO program, the National NEMO Network and CLEAR.

He is the first recipient of this award from UConn or even New England.

► **Two CLEAR stalwarts retire.** The state retirement incentive plan claimed two of CLEAR’s most accomplished educators, Jim Gibbons and Sandy Prisloe. Jim, a Land Use Planning Educator, was with UConn Extension for 35 years, concentrating on helping land use decision makers across the state on issues from basic responsibilities to open space planning to farmland protection. Jim was also the co-founder of the NEMO Program, and a principal of the Land Use Academy. Sandy, the University’s Geospatial Technology Extension Specialist, was a pioneer of GIS (geospatial information systems) technology in the state and the region, and founded CLEAR’s Geospatial Technology Program. Although much of their educational programs will continue in some fashion, the absence of Jim and Sandy will be felt in CLEAR programs for a long time. ●

## CLEAR Website

[clear.uconn.edu](http://clear.uconn.edu)



The CLEAR website has been undergoing some renovations over the past few months and should be completed this fall. Some advantages to the updated website include faster page loading times, greater accessibility (for persons with disabilities), simplified page navigation and of course, a snazzy new look. Check it out!

# Tools

## A National Low Impact Development Atlas Online

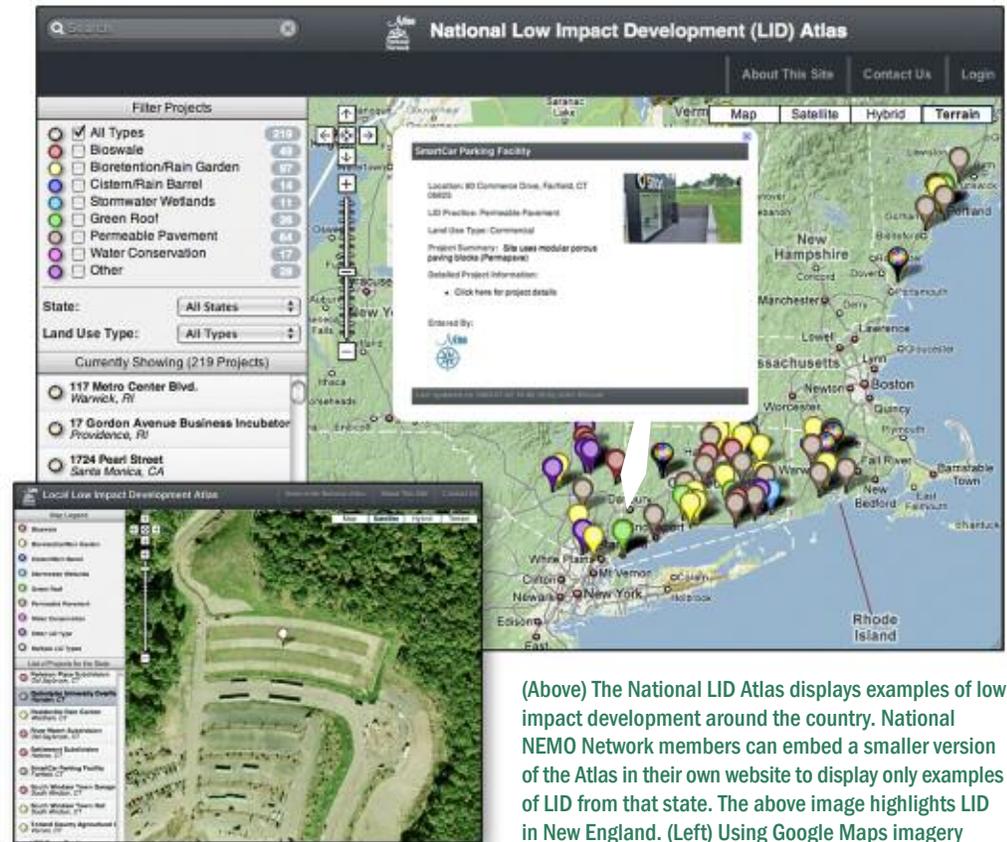


CLEAR's National NEMO Network has recently launched the Low Impact Development (LID) Atlas, a sophisticated website that is intended to show

LID practices from around the country in a unique, interactive way. LID refers to a number of stormwater management practices, like grass swales, rain gardens, permeable pavements and green roofs that reduce runoff and help to protect water resources from the impacts of nonpoint source pollution.

The new Atlas is a “mashup,” using Google Maps in combination with local data to create a searchable map that covers the entire country (see related cover article, “Mashup” Madness). The Atlas was developed by a partnership of the Connecticut and California NEMO programs, and is coordinated by the National NEMO Network “Hub” at CLEAR. The NEMO Network is now comprised of 32 programs in 30 states, all adapted after UConn’s original NEMO program.

The most advanced feature of the Atlas is that all 32 NEMO programs and their partners can enter data, photos and links



(Above) The National LID Atlas displays examples of low impact development around the country. National NEMO Network members can embed a smaller version of the Atlas in their own website to display only examples of LID from that state. The above image highlights LID in New England. (Left) Using Google Maps imagery users can zoom into a birdseye view of the practices. Seen here is Quinnipiac University's permeable overflow parking lot.

for LID practices in their own state, and have them immediately appear on the national site. Thus, the hope is that within a year's time the national map will be festooned with the many-colored markers that mark the spot of an LID practice. “We're hoping for at least 500 entries by the end of the year,” says Dave Dickson, NEMO Network coordinator. He adds that “this is an excellent example of the

power of the Network to create unique educational products. Not many organizations could pull off something like this, and we did it with a minimal budget, just using the collective abilities of our network members.” ●

Visit the National LID Atlas at: [clear.uconn.edu/tools/lidmap](http://clear.uconn.edu/tools/lidmap)

*“Mashup” Madness continued from cover . . .*

conducted in the spring by GTP, and a Northeast Region workshop for Land Grant and Sea Grant staff was held at the UConn Groton campus this past June. The workshop was a big success, and another is planned for Portsmouth, New Hampshire in October.

“Mashup technology is relatively easy to learn, even if you're not a GIS expert, and

it's so flexible that it can be used for a whole range of applications,” says Cary Chadwick, GTP's principal mashup trainer. CLEAR hopes to obtain funding to continue these workshops, both instate, regionally and even nationally.

For more information, contact Cary Chadwick at: [cary.chadwick@uconn.edu](mailto:cary.chadwick@uconn.edu) ●

Contact CLEAR at: University of Connecticut, CES, 1066 Saybrook Road, P.O. Box 70, Haddam, CT 06438 • Phone: (860) 345-4511  
• Email: [clear@uconn.edu](mailto:clear@uconn.edu) • Web: [clear.uconn.edu](http://clear.uconn.edu)  
• Editor: Chet Arnold • Designer: Kara Bonsack

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