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Smart Phone App Puts Rain Gardens into Mobile Tech Mode

Margaret (Peg) A. Van_Patten Ms.
University of Connecticut, peg.vanpatten@uconn.edu

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by Peg Van Patten

Can you prevent pollution and help deal with climate change while enjoying the pleasant pastime of gardening? You bet you can! Thanks to a new free smart phone app, Rain Garden, it's now easy. The app was funded by the NOAA Sea Grant Climate Change Adaptation Capacity Building Initiative via Connecticut Sea Grant.

Mike Dietz, Sea Grant extension educator, and David Dickson, National NEMO coordinator, who are partners in the Center for Land Use Education and Research (CLEAR) in UConn's College of Agriculture and Natural Resources (CANR), developed the new rain garden app. A UConn computer science doctoral student provided the programming power.

The free app debuted in January 2013 in Apple's iTunes store for iPhone and iPad, and is now also available for Android. The "Rain Garden" app is designed for use by landscapers, contractors and homeowners to help them design, install, and maintain rain gardens. Nearly half of all adults in the U.S. now use smart phones.

Why climate? Quite simply, the model projections predict a greater amount of precipitation and extreme weather events for the Northeast U.S. Flooding from sea level rise combined with storm surge is a big concern now. Polluted runoff is a problem nearly everywhere, and can damage estuaries, bays, and bayous.

Whenever it rains, pollutants in the runoff from rainwater are transported. Rain gardens are created in a depression in the landscape, and they collect water from rooftops, yards or driveways and allow it to infiltrate the ground where selected plants have been placed and topped with mulch. By building an attractive rain garden,

Get the app!

iphone: http://s.uconn.edu/rgios

android: http://s.uconn.edu/rgandroid

you can reduce the amount of pollutants that could otherwise enter nearby water bodies, using attractive and healthy native plants. Meanwhile, you also prevent erosion, remove standing water, and create habitat for wildlife such as butterflies and birds. They work well in urban as well as residential areas; for example, at hospitals, offices, and school settings.

The new app includes sections on how to install a garden, native plant selection guidelines, soil drainage maps, and information on how to pick a site and size a garden. The app can use GPS right down to the location of individual addresses, making planning specific to a localized plot of land, not just a general area. There are six video tutorials and a searchable plant database.

Among the gold mine of tools provided in the app is a calculator to show what size watershed will be drained by a specific garden dimension, what the soil and water characteristics are, and how much the project will cost. The user can delight in selecting plants to suit them; for example, request "shrubs in part sun with colors blue and orange." A list of native plants fitting the criteria will pop up, with photos and characteristics to care for each plant. Tutorials guide users from design, planning and installation to maintenance. A user can plan multiple gardens on the phone and save them for future reference or sharing, if desired. When users export their garden information to the developers, they can quantify how much storm water will be treated and estimate pollutant load reductions achieved.

An earlier climate adaptation grant to them from NOAA Sea Grant, facilitated rain garden training sessions and demonstration projects. One

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good example is the rain garden installed in 2010 behind the Bridgeport Aquaculture High School in Captain's Cove, facing Long Island Sound. The school, in a coastal city that experiences frequent flooding and is only 2 feet above sea level, stayed dry throughout Tropical Storm Irene in 2011. Done properly, a rain garden can redirect a tremendous amount of rainwater.

Rain gardens are a popular subject for Sea Grant and the Cooperative Extension System. Oregon Sea Grant has a wonderful how-to publication, for example. Maryland Sea Grant also does rain garden training and projects, and has posted the information on Angie's list, where contractors and customers can see it. They have a Green

Jobs program employing young adults to install rain gardens at community buildings and houses of worship. Texas Sea Grant has partnered with volunteers, including Girl Scouts, to build rain gardens at Armand Bayou, Dickinson Bayou, and several more in the greater Houston area. The app was a logical next step, putting training and examples literally in people's hands.

Although the current content is focused on Southern New England, the UConn app team hopes to work with partners to create a national version of the app.

Note: David Dickson and Mike Dietz contributed to this article.