

UMass and DCR Receive USDA Grant to Monitor Invasive Species Using Smartphones

AMHERST, Mass. – Through the use of popular mobile phone technology, a UMass professor of environmental conservation and public policy and the Massachusetts Department of Conservation and Recreation (DCR) are collaborating to engage more people in governmental and scientific efforts to collect valuable data about invasive species.

Charles Schweik, associate professor of environmental conservation and public policy at the University of Massachusetts Amherst, and Jennifer Fish, director of DCR's Service Forestry program in Amherst, have received a grant from the U.S. Department of Agriculture to enlist the help of "citizen scientists" to map invasive species using smartphone technology.



The new Outsmart Invasive Species Project iPhone application will provide a watch list of invasive species that volunteers can look for in their communities, and the tools they need to identify and report them.

The application will be available through iTunes in mid March.



A tree infested by the Asian longhorned beetle in Worcester, Mass., in 2008, shows the severe damage that can be caused by an invasive species. (Massnrc.org)

"Invasive species can hurt the environment, businesses and communities," Fish said. She pointed out that the 2008 outbreak of the Asian longhorned beetle in Worcester led to the loss of 30,000 trees, a costly blow to the city and the urban canopy. "With more people equipped with the tools to identify and report invasive species in their hands while out in the field, we hope to prevent destructive outbreaks like these," she said.

The new Outsmart Invasive Species Project lets people learn about, identify and report invasive species in their own time, using the Outsmart Invasive Species iPhone application, which will be available for free through iTunes in mid-March. It's like a scavenger hunt, but for plants and insects that threaten native habitat. Citizen lookouts will be able to cover more ground than scientists could alone, thereby improving invasive-species monitoring throughout Massachusetts.

Schweik said having extra sets of eyes in the field is particularly important for spotting invasive species that are not yet prevalent, but pose an imminent threat, such as the Asian longhorned beetle and the emerald ash borer.

"We're trying to build a 'citizen militia,' much like the Minutemen who mobilized in Massachusetts during the Revolutionary War," said Schweik. "But today the enemy is invasive species, and citizens can be the Paul Reveres, armed with iPhones or digital cameras rather than muskets."

Unlike programs where volunteers must receive time-intensive training on how to identify invasive species, anyone who spends time outdoors and has an iPhone or a digital camera and access to the Web can take part in the Outsmart Invasive Species Project without a formal commitment.

After downloading the free Outsmart Invasive Species application, participants simply keep a look out for the species on their target lists. The application provides images and descriptions of each species, and enables participants to take photographs tagged with GPS coordinates to submit to an online database. Expert biologists will then review the observations.

Participants who don't have iPhones but do have digital cameras and World Wide Web access can submit data by registering through the free Early Detection and Distribution Mapping System at www.eddmaps.org/outsmart/join.cfm. All Massachusetts data submitted through this website will be sent to the Outsmart project team.

In addition to collecting a wider range of data than scientists could alone, the Outsmart Invasive Species Project aims to connect organizations that are already involved in monitoring in the state and beyond.

“Given the tough economic times, it is increasingly important that government agencies at all levels work together, as well as with nonprofit and citizen groups, to tackle environmental conservation issues,” said Schweik.

The project team at UMass collaborated with developer Chuck Barger on at the University of Georgia’s Center for Invasive Species and Ecosystem Health to create the Outsmart application specifically for Massachusetts. The project has also received technical support from UMass Extension’s Mass Woods Forest Conservation program. Other collaborators include the U.S. Fish and Wildlife Service and the nonprofit Trustees of Reservations.

To learn more about how you or your organization can get involved — even if you don’t have an iPhone — visit the project website at www.masswoods.net/outsmart. You can also check out Outsmart Invasive Species Project on Facebook, contact the project team by e-mail at outsmart@eco.umass.edu, or subscribe to the Twitter feed @outsmartapp.

CPPA is the hub of interdisciplinary public policy research, teaching and engagement at UMass Amherst. Its faculty and alumni are effective policy leaders, from the local to the global levels, in addressing topics such as family and care policy, environmental issues, emerging technologies, social inequalities and governance.

The CPPA program is the 2011 recipient of the National Association of Schools of Public Affairs and Administration’s Social Equity Award, created to honor a public administration, affairs or policy program with a comprehensive approach to integrating social equity into its academic and practical work.



The Outsmart Invasive Species Project is a collaboration between UMass Amherst, and the Massachusetts Department of Conservation and Recreation.

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