

Wildland Weeds

SUMMER/FALL 2012





Call for Abstracts

We invite abstract submissions for contributed oral or poster presentations at the 2013 FLEPPC/SE-EPPC Joint Annual Symposium. This year's theme is Plant Wars: The EPPC's Strike Back. The meeting will be held Tuesday, May 21st through Thursday, May 23rd at the Edgewater Beach Resort in Panama City Beach, Florida.

Deadline for Abstract Submissions: February 15, 2013

Program Topics: Submissions are welcome for any area of invasive plant species investigation, including but not limited to:

- Ecology
- Economics
- Management
- Restoration
- Risk Assessment
- Policy and Regulation
- Evolutionary Biology
- Interdisciplinary Projects

Student Poster Competition: All student posters presented at the annual meeting are eligible for consideration. Posters may have multiple authors, but the first author must be a graduate student. A team composed of representatives from each SE-EPPC chapter will judge student posters, based on scientific merit, design, and poster discussion with judges.

Awards:

1st place: \$150; 2nd place: \$100; 3rd place: \$50.

To participate, send an email indicating interest by 5 pm January 31st, 2013, to Dr. Nancy Loewenstein, loewenj@auburn.edu
Please include SE-EPPC Student Poster Award in the subject line.

SUBMIT YOUR ABSTRACT ONLINE!

www.fleppc.org/Symposium/2013/abstractsubmission.html

Abstracts must include the following information:

- Title of the proposed paper or poster
- Full name and professional title of the author(s), affiliation, mailing address, phone number(s), and email address
- If there are multiple authors, please provide the above information for each.
- Text of the abstract (limit of 400 words)

If web access is not available, please submit abstracts to: Sherry Williams, Seminole County Natural Lands Program, 3485 N. CR 426, Geneva, FL 32732; phone: 407-349-0551, Email williams02@seminolecountyfl.gov

Notification of acceptance or rejection will be emailed to author(s) by March 1, 2013.

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The mission of the Exotic Pest Plant Councils is to support the management of invasive exotic plants in natural areas by providing a forum for the exchange of scientific, educational and technical information.

An **exotic plant** has been introduced, either purposefully or accidentally, from outside of its natural range. A **naturalized exotic plant** is one that sustains itself outside of cultivation (it is still exotic; it has not "become" native). An **invasive exotic plant** not only has become naturalized, but is expanding its range in native plant communities.

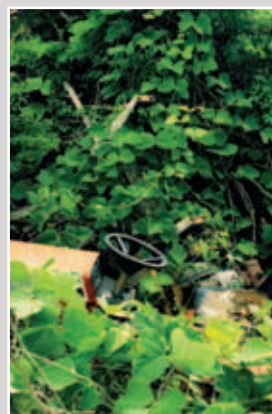
Wildland Weeds (ISSN 1524-9786) is published quarterly by the Southeast Exotic Pest Plant Council (SE-EPPC) and distributed to members to provide a focus for the issues and for information on exotic pest plant biology, distribution and control. The Charter issue of *Wildland Weeds* was published by the Florida Exotic Pest Plant Council in Winter 1997.

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Please contact your EPPC chapter secretary for mailing address changes:
www.se-eppc.org



On the Cover:

Kudzu, the weed that gives us some of our best invasive plant photo opportunities, demonstrates its remarkable growth capacity. It was the second most commonly reported species in a Tennessee expenditure survey (see article on page 4). Also see a report on the kudzu bug on page 11. Photo by Ann Murray, courtesy of the UF/IFAS-Center for Aquatic & Invasive Plants.

Direct Costs Associated with Invasive Non-Native Plants in Tennessee

By *Alix A. Pfennigwerth and Sara E. Kuebbing*

Introduction

Plant invasions pose a serious problem to resource managers, horticulturalists, and policy makers in Tennessee. While many introduced non-native plants are highly viable commodities in the nursery and horticulture industry (i.e., periwinkle cultivars *Vinca major* and *Vinca minor*); privet species (i.e., *Ligustrum vulgare* and *Ligustrum sinense*); and English ivy (*Hedera helix*), they are just a few prominent examples of the 135 non-native plant species listed as invasive or potentially invasive by the Tennessee Exotic

Pest Plant Council (TNEPPC). Many of the TNEPPC listed species pose a serious threat to natural areas in the state now or in the future (TNEPPC 2009). While exotic plant species can be attractive, low-maintenance additions to cultivated landscapes, about 1% of all introduced species will escape from lawns and gardens to

become invasive in our state's fields and forests, decreasing native plant diversity and turning an aesthetic landscape into a management nightmare (Williamson 1993).

While the ecological impacts of invasive plants have been relatively well addressed (i.e., Pejchar & Mooney 2009, Pyšek *et al.* 2012, Vilá *et al.* 2011), estimating the economic impact of invasive plants can be extremely complex; hence, dollar estimates vary greatly depending on methods used. In fact, the U.S. General Accounting Office (GAO) wrote that economic analyses of invasive plants are "hampered by a lack of data...and a lack of economists assigned to assessing their economic impacts on commercial activities and natural ecosystems" (2002).

Since the time of the GAO report, researchers have estimated economic costs of invasive plant species on a national basis (Colautti *et al.* 2006, Olson 2006, Pimentel *et al.* 2005). Most notably, Pimentel, Zuniga and Morrison of Cornell University estimated that invasive plant species

cause \$25 billion in damages to the United States (2005). However, this study has been criticized due to its methods, and shows the difficulty in collecting and extrapolating data to understand economic costs.

While such large figures serve to demonstrate the vast scale of impact, refining estimates regionally and statewide can be useful when addressing local- and state-based policy and management. The California Invasive Plant Council (CAL-IPC) conducted a study of the direct costs of invasive plants (costs including direct control, mapping and outreach) and found that invasive plants cost California at least \$82 million annually (Brusati 2009). The findings of this CAL-IPC study, as well as the ongoing dichotomy between horticulture's introduction of non-native plants and management's removal and control of non-native invasive plants, served as an impetus for TNEPPC's cost assessment of invasive plants in Tennessee.

Methods: Expenditures Survey

With support from a Southeast Exotic Pest Plant Council research grant, we conducted a study to quantify direct expenditures in the state of Tennessee on invasive plant management. We emailed a survey to federal agencies (i.e., National Park Service, US Fish and Wildlife Service), state agencies (i.e., TN Wildlife Resources Agencies, TN Department of Environment and Conservation), non-profits (i.e., nature centers and advocacy groups), and private commercial landowners to query how much they spent annually between 2009-2011 on invasive plant management. We asked respondents to consider "management" any activity comprised of direct control measures (biological, chemical and mechanical methods), mapping and monitoring, and outreach and education programs. Respondents could choose any combination of categories. We also asked respondents to include any in-kind contributions (i.e., volunteer hours) put towards invasive plant work, and multiplied this hour count by the Independent Sector's estimated value of volunteer time (Independent Sector 2012).

In addition to budget figures, we asked survey respondents to list the three most problematic plant species in the area they manage, the acreage of land infested by and/or managed for invasive plant species, the percentage of their total budget dedicated to invasive plant management, and the sources of their funding (general budget, private or government grant, visitor/member fees or other source).

"We found federal agencies, state agencies, municipal parks and governments, non-profit organizations, and private land managers spend on average \$2.6 million annually on invasive plant management in Tennessee."

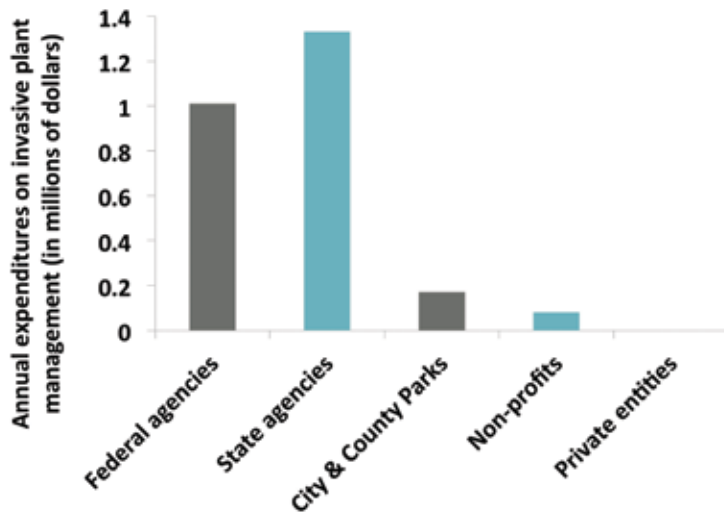


Fig. 1

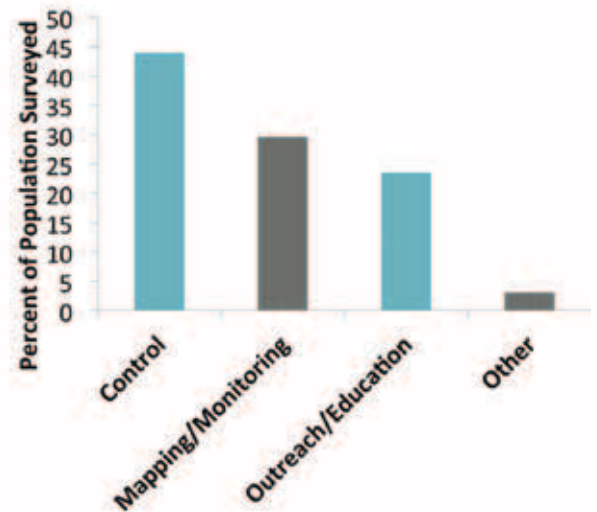


Fig. 2

Results and Discussion

We sent our survey to approximately 188 agencies and organizations working in Tennessee, and received roughly a 56% final response rate. While federal agencies, state agencies, non-profits, and private property managers were well represented (50-75% response rate), municipal and county park systems responded only 5% of the time. Counting the total expenditure on invasive plants of a given agency is often not as easy as reading a budget line; in fact, most agencies are not required to explicitly track spending on invasive plant management. Because of this, land managers often provided us with their *best estimate* of costs and expenditures (see Figure 1).

Types of Management

Respondents utilized all types of management activities, including direct control (44%), mapping and monitoring of invasive plant species (30%), education and outreach programs (23%), and “other” management such as consultation services (3%; see Figure 2). Though the bulk of management activities were focused directly on controlling existing infestations, 53% were focused on mapping and education on plant invasion, which indicates that agencies are not only managing existing problems, but also working to prevent and raise awareness of possible future invasions.

Most Problematic Species

Respondents reported a total of 29 non-native species. The three most commonly reported species, in order of decreasing frequency, were privet species (*Ligustrum vulgare* and *L. sinense*), kudzu (*Pueraria...*

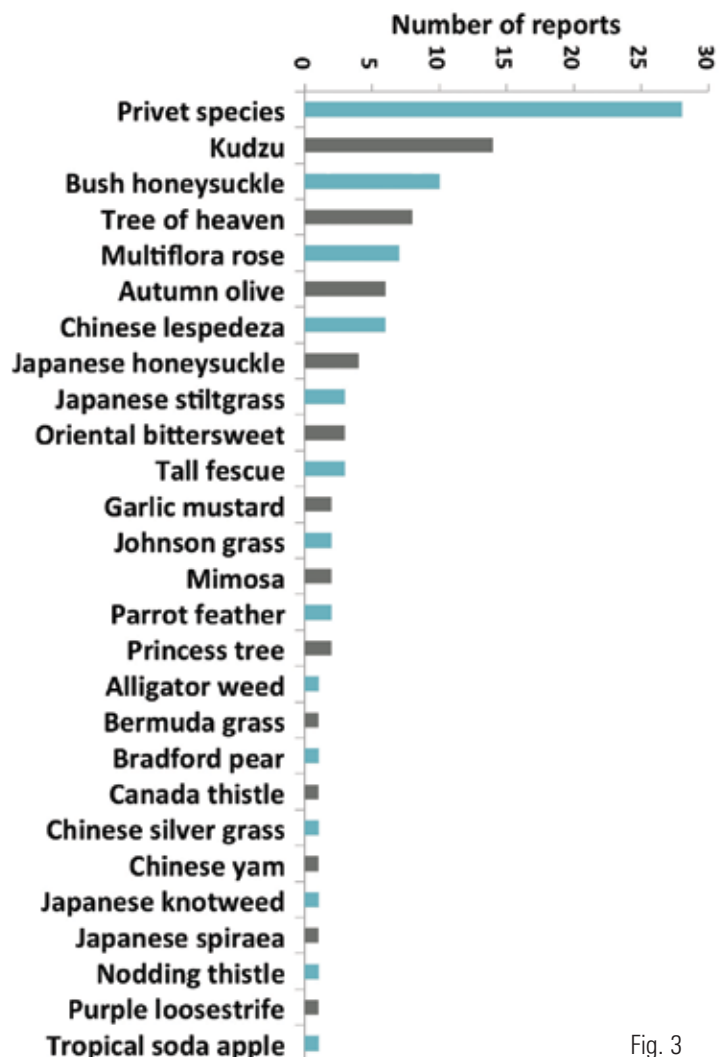


Fig. 3



Amur bush honeysuckle
(*Lonicera maackii*)

montana var. *lobata*), and Amur bush honeysuckle (*Lonicera maackii*). See Figure 3 for frequencies of all species reported.

Interestingly, 16 of the reported species (55%) are currently listed by TNEPPC as “Severe Threats,” which are invasive species of highest concern that spread easily into native plant communities and displace native vegetation. Eight of the reported species (25%) are listed as “Significant Threats,” which are species that possess invasive characteristics but are not considered to displace native vegetation as easily

as Severe Threat species. Two species reported, burning bush (*Euonymus alatus*) and English ivy (*Hedera helix*) are listed by TNEPPC as “Lesser Threats” which are species that spread into disturbed areas but are not considered a threat to native plant communities. Two other species reported, Bradford pear (*Pyrus calleryana*) and Canada thistle (*Cirsium arvense*), are listed as “Alert” which indicates species known to be invasive in similar habitats *outside* of Tennessee (TNEPPC 2009). One reported species, Bermuda grass (*Cynodon dactylon*), is not currently listed by TNEPPC as invasive. While the Severe and Significant Threat species would be expected to be highly problematic, the latter three groups reported—Lesser Threat, Alert, and Not Listed—may merit special monitoring in the future to ensure they do not become more highly invasive.

Expenditures on Invasive Plant Management

We found federal agencies, state agencies, municipal parks and governments, non-profit organizations, and private land managers spend on average \$2.6 million annually on invasive plant management. State agencies spent the most on invasive plant management: roughly \$1.33 million per year. Federal agencies spend about \$1.01 million per year (this figure would likely be higher if such key respondents as the Tennessee Valley Authority were to respond to the survey); municipal parks and governments spend approximately \$170,000 per year; non-profits about \$80,000 per year; and private land managers, less than \$10,000 per year. It is important to stress once again the conservative nature of this figure: not all of the population responded to this survey, and many of those

who did commented on the lack or complete absence of funding for invasive plant management projects in the past three to five years. This indicates that the true, comprehensive cost of invasive plants to the state of Tennessee is likely much higher than the estimated \$2.6 million. We encourage other EPPC chapters to conduct a similar cost assessment for their state. Contact the corresponding author or visit www.tneppc.org/ to learn more.

Acknowledgements

We would like to thank Southeast EPPC and Tennessee EPPC for funding this project. In addition, we would like to give a special thanks to Dr. Mark Fly, Karin Linnen, Dr. Wayne Morse, Cara Pfennigwerth, Candi Rawlins, and Kevin Willis for making this project more enjoyable and meaningful.

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Alabama Invasive Plant Council / Alabama Plant Conservation Alliance Haines Island Park Project

By Gena Todia

Haines Island Park is comprised of 480 acres of land located on the Alabama River in Monroe County. It is owned and managed by the U.S. Army Corps of Engineers (Corps) as part of the Alabama River Lakes Water Resources Development Project. The park is situated in the Southern Red Hills region of the East Gulf Coastal Plain and is home to some rare plant and animal species, including the Red Hills salamander, a federally-listed species.

Botanically and otherwise, the park is a very rich and interesting place. A few species that occur in the park and general vicinity include Piedmont rhododendron (*Rhododendron minus*), Alabama azalea (*R. alabamense*), Red Hills azalea (*R. colemanii*), bottlebrush buckeye (*Aesculus parviflora*), mountain laurel (*Kalmia latifolia*), eastern green violet (*Hybanthus concolor*), northern spicebush (*Lindera benzoin*), cucumber-tree (*Magnolia acuminata*), bigleaf magnolia (*Magnolia macrophylla*), Carolina holly (*Ilex ambigua*), eastern leatherwood (*Dirca palustris*), trilliums, and many more.

In 2009, the Alabama Invasive Plant Council (ALIPC) and the Alabama Plant Conservation Alliance (APCA) decided to partner on a project to accomplish several goals toward preserving the ecological integrity within the park, including the following:

- Schedule a series of work days for locating and removing invasive exotic plants from the park.
- Conduct a comprehensive plant survey within the park and provide the list to the Corps and others who may find it useful.
- Make recommendations to the Corps on addressing issues that are exacerbating the exotics problem.

Invasive exotic plants are in the early stages of becoming established in a few areas of the park. Exotics include silktree (*Albizia julibrissin*), Chinese privet (*Ligustrum sinense*), thorny olive (*Elaeagnus pungens*), Japanese climb-

ing fern (*Lygodium japonicum*), kudzu (*Pueraria montana*), and Chinaberry (*Melia azedarach*).

After coordination with Corps of Engineers Resource Manager, Jason Haynes, a joint APCA/ALIPC work day was held to kill invasive exotics. Although the group of participants was small, a lot of work was accomplished. However, it became obvious that additional, on-going efforts would be required to control invasive exotic species in the park.

Several months later, a group of 10 ALIPC and APCA members and Corps Park Ranger Jason Ledbetter participated in a second very productive work day. Participants were Dr. Harry Larsen, Fred Nation, Michael Jordan, Dee Smith, Patrick Thompson, Graves Lovell, Dana McReynolds, Bobby Green, Dr. Bob Boyd, and Gena Todia. Invasive plant species control efforts concentrated primarily on silktree, Chinese privet and thorny olive. With the assistance of Fred and Patrick, Dr. Larsen began compiling a list of plant species that occur in the park. This list will be expanded on subsequent trips as this project continues.

The following summer, eight hard-working, enthusiast folks affiliated with ALIPC and/or APCA returned to the park to continue invasive exotic plant control efforts. Participants were Dr. Bob Boyd, Dee Smith, Patrick Thompson, Fred Nation, Michael Jordan, Luis Cruz-Arroyo, William Bodiford, and Gena Todia. Species targeted were primarily Chinese privet and thorny olive. The group moved beyond areas previously cleared of exotics into new areas along the Alabama River. Excellent progress was made.

ALIPC and APCA thank Jimmie Cobb and Dow Agro-Sciences for donating herbicide for this project. Plans are to return for another work day next spring when exotics control work will continue along with work on the plant inventory.

For additional information, contact Gena Todia at jaget@zebra.net.

FLEPPC's Kathy Craddock Burks Education and Outreach Grant Program

By Jennifer Possley, FLEPPC Education Grant Committee Chair

INTRODUCTION

Eleven years since inception, FLEPPC's Kathy Craddock Burks Education and Outreach Grant program is still going strong. To date, the program has provided funding for more than 65 different invasive plant education programs. Each year, grant committee members carefully consider all applications, looking for projects that creatively engage the public. In this issue of *Wildland Weeds*, we feature reports from six previous recipients. More information on the program can be found at <http://www.fleppc.org/edgrants.html>.

1. Know the Enemy – Exotic Invasive Plants of Colt Creek State Park

By Scott Spaulding, Park Manager, Colt Creek State Park,
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Colt Creek State Park, formerly known as the C. M. Overstreet Ranch, was purchased from the Overstreet Family in 2006 and opened to the public as Florida's 160th state park in January of 2007. As we began to manage the park we encountered numerous exotic invasive plant species. Through the course of treating and removing them we felt it necessary and prudent to inform the public of what we were doing and why. Therefore, with the money we received from the FLEPPC's Kathy Craddock Burks Education Grant, we were able to purchase and install two custom made interpretive signs. One sign titled "Know the Enemy" describes four of the most prevalent and invasive plant species found in the park, while the second, "Know the Friends" sign describes six native plant species found throughout the region. In addition we planted samples of the native species below the sign and mounted a box which holds brochures produced in conjunction with the Department of Environmental Protection, Florida Fish and Wildlife Conservation Commission and the University of Florida IFAS Extension. The brochures titled "Invasive Plants You Should Know" identify the same invasive plants as seen on the interpretive sign and can be taken home by visitors for future reference. We are grateful for the funding we received as it made this form of public education and outreach possible.

2. Seminole County Natural Lands Program

By Sherry Williams, SCNLP Biologist
swilliams02@seminolecountyfl.gov

The Seminole County Natural Lands Program (SCNLP) was established in 1990 and currently manages 13 properties totaling over 6,000 acres. Since inception, SCNLP has been



SCOTT SPAULDING

The FLEPPC education grant-funded sign is prominently featured at Colt Creek State Park.

educating the public on exotic invasive species. SCNLP's Ed Yarborough Nature Center provides environmental education programs for Seminole County public and private schools by request. Part of the education program discusses exotic invasive species and how they disrupt the normal functions of the ecosystem.

One of the most prevalent exotic invasive species in Seminole County is air potato (*Dioscorea bulbifera*). In 2002, SCNLP began holding an "Air Potato Raid" at Spring Hammock Preserve to help remove this species from the property and to educate the public about exotic invasive species. The event combines volunteer work and education with a celebratory atmosphere, and includes prizes for the most pounds of potatoes collected, the hairiest potato, the largest potato, etc. Many participants return every year, bringing new volunteers with them. Over the past 10 years more than 40,000 pounds of air potato have been collected during our Air Potato Raid.

In 2010, SCNLP received FLEPPC's Kathy Craddock Burks education grant to expand their air potato outreach. A brochure focusing on air potato identification and removal was developed and distributed at various environmental events including Earth Day, Native Plant Awareness Day and the 2011 Air Potato Raid held by Seminole County and the Central Florida Cooperative Invasive Species Management Area. This latter event included both Seminole and Orange County properties as well as the Cities of Orlando, Casselberry, Altamonte Springs, and Winter Springs. A total of 706 volunteers collected 7,138 pounds of air potato and all received an air potato brochure.



SHERRY WILLIAMS

Potato Raiders from Lake Howell High School at Spring Hammock Park as part of the CF-CISMA Air Potato Mega-Raid.

3. “It’s A Jungle Out There” Invasive Plant Workshop And Tree Giveaway

By Linda Dye, Florida Master Gardener Volunteer and Fund Raising Chair of UF/IFAS Santa Rosa County Master Gardener Association
ldye@uwf.edu

**“It’s a jungle out there
Disorder and confusion everywhere
No one seems to care
Well I do.”**

Taking its theme from the Randy Newman lyric “It’s a Jungle Out There,” the UF/IFAS Santa Rosa County Master Gardeners conducted a two-hour invasive plant workshop and tree giveaway on November 5, 2011 at the UF/IFAS Santa Rosa County Extension Office in Milton. The event was publicized in varying formats, including newspaper articles, posters, flyers, and the Internet. Specific goals for the event included: (1) increasing awareness of common invasive trees and plants in area landscapes, (2) educating participants regarding control options for invasive plants, (3) encouraging the use of native trees and plants, (4) providing each participant two quality trees to replace invasive ones, and (5) assessing the workshop’s impact through pre- and post-tests.

“It’s a Jungle Out There” began with a workshop conducted by Theresa Friday, Residential Horticulture Extension Agent for Santa Rosa County. In her presentation, Friday emphasized the impact of invasive plants on biodiversity, wildlife habitat, and the economies of Florida and the U.S. She then went on to describe 16 invasive plant species common to Santa Rosa County, taught proper removal and disposal techniques, and gave suggestions for replacement plants. In addition to seeing photos of the featured invasive plants, seminar participants viewed live specimens. Participants were asked to “think locally and act neighborly” by telling friends, family, neighbors and others about invasive species.

Each member of the capacity audience of 104 participants received a folder of educational materials and two native trees. All printed materials were funded by FLEPPC’s Kathy Craddock Burks Education and Outreach Grant. Native trees were funded by a grant from International Paper and purchased from a local wholesaler at a reduced cost. Each participant was able to take home a 3-gallon tree and a 1-gallon tree from a choice of seven different species.

This program was both fun and effective. The auditorium was decorated with invasive plant specimens and inflatable jungle animals. Educational door prizes were provided as well. Workshop participants were given a pre-test and post-test to measure the effectiveness of our program. The mean score on the pre-test was 68% and the mean score on the post-test was 92%. More than three fourths of workshop participants scored 100% on the post-test. Ninety-eight participants took a written pledge to scout their landscapes, remove invasive species and properly dispose of them.

4. Plant This, Not That! Invasive and Native Plant Family Education Day at Gamble Rogers Memorial State Recreational Area

By Lauren Swanson, Parks Services Specialist
Lauren.Swanson@dep.state.fl.us

On March 10, 2012, Gamble Rogers Memorial State Recreation Area hosted a one-day event entitled “Plant This, *Not That!*” The family-friendly event provided several opportunities for residents of Flagler and other nearby counties to learn about the benefits of removing non-native invasive plants and planting Florida’s native flora.

The day began with a seminar with attendance by over 50 guests. Park Service Biologist Alice Bard informed people of native alternatives to landscaping, the benefits of native planting, and convinced everyone you can have a beautiful, colorful yard all year long with native Florida plants! Many guests stayed for the hike along the Joe Kenner Nature Trail at the park. The hike demonstrated a wide array of plants and gave visitors a chance to see up close and personal the wide variety of natives in the area. The event wrapped up with a wonderful watercolor workshop featuring paintings of beautiful native wildflowers.

The park was awarded funds from FLEPPC’s Kathy Craddock Burks Education and Outreach Grant to help fund the program. With these funds we were able to publicize the event with posters, purchase copies of the UF/IFAS publication “Invasive and Other Non-Native Plants Recognition Guide,” which were given out to the first 30 guests, and provide each guest with their very own Florida native plant, *Gaillardia pulchella*.

The event successfully reached out to guests by using recreation, information and the arts while instilling the importance of protecting Florida’s ecosystems with natives!

5. Flip: A Florida Invasive Plant Species Mobile Field Guide

By Marcia Anderson Clark, Senior Environmental Specialist,
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When trying to identify invasive plant species in Florida, wouldn't it be nice to have a user-friendly field guide at your fingertips? Now you can, by accessing a new web-based application called FLIP. The FLIP project was funded by the FLEPPC 2011 Kathy Craddock Burks Education and Outreach Grant awarded to the Orange County Environmental Protection Division for the development of a web-based application that would allow for easy identification of common invasive plant species. FLIP stands for Florida Invasive Plants and is designed to be a mobile field guide that can be accessed by a computer, smart phone, tablet, or other device with internet browser capability.



Developed in partnership with the University of South Florida (USF), FLIP contains 19 of the 2011 Category I invasive species and one Category II species, as designated by the Florida Exotic Pest Plant Council (FLEPPC). The

FLIP application combines valuable information from the USF Atlas of Florida Vascular Plants, as well as Orange County staff knowledge, descriptions and photographs. It is intended to reach 10,000 people or more in an average year.

From the homepage, you can search for an invasive plant by common name, scientific name, or by using a set of characteristics (i.e. flower color). Each species has an information page with the following details: origin, ecological impact, description, identification tips, plant history, range, and prevention/management strategies. Scroll down the page further to find photos to help with identifications. Don't know what the term "rachis" means? Just click on the glossary button to find the definition. This application is designed for everyone, from the average student to the experienced plant enthusiast or professional. It also has the ability to be expanded in the future to include all of the species included on the FLEPPC invasive plant list.

FLIP can be accessed from the Orange County Water Atlas at www.orange.wateratlas.org

6. Spreading the Word About Invasive Plants to the Town of Hastings

By Shelby E. Jack, Hastings Town Manager, tohclerk@windstream.net

Shelby E. Jack, Hastings Town Manager, gets asked all sorts of questions throughout her day. When many questions took the form of, "I think I have Kudzu (*Pueraria montana*) taking over my land" or "I have a vine that grows potatoes" or "I have an evergreen shrub with these red lingering berries" or "I have a

plant coming up with thorns that produces a fruit like a small watermelon," she knew some education was in order for herself and her residents.

The rural Town of Hastings is the Potato capital of Florida and is located in St. Johns County. In 2011, Shelby E. Jack partnered with Amy Meide of the St. Johns County Environmental Division to apply for a Kathy Craddock Burks education grant from the Florida Exotic Pest Plant Council. The \$500 award they received was used to create a single page informational sheet on the Top Four invasive plant species in the Town of Hastings: Air Potato (*Dioscorea bulbifera*), Japanese Climbing Fern (*Lygodium japonicum*), Coral Ardisia (*Ardisia crenata*), and Tropical Soda Apple (*Solanum viarum*). The one-page fact sheet provided color photographs on these species and information about identification, origins, and control methods.

To distribute the fact sheet, Ms. Jack turned to a means most all of her residents would receive, utility bills. The fact sheets were included in Hastings Utility Bills for the month of September, 2011 and also available at the Town Hall, Hastings Branch library and Post Office community board. Tony Cubbedge, Land Resource Manager for St. Johns County provided information about the grant and the top four invasive plants at the October 10, 2011 Hastings Town Hall Meeting. Mr. Cubbedge answered several questions about the origin and best treatment methods of these invasive plant species. A treatment day for air potato followed on October 25, 2011 at the Cora C. Harrison Preserve, a park site recently acquired with grant funding from the Florida Communities Trust.

With many small governmental organizations strapped for funding, the Kathy Craddock Burks education grant allowed the Town of Hastings to spread the word about some of the aggressive invasive plants residents were encountering and the best methods to control them. To learn more about the Top Four invasive plant species in Hastings or to receive a fact sheet, contact Ms. Shelby E. Jack at 904-692-1420.

Congratulations to the 2012 Grant Recipients!

- Rosalind Rowe, *Florida guidelines for disposal of terrestrial invasive plants.*
- UF/IFAS Extension, Calhoun County, via applicant Judy Ludlow, *Invasive plant management workshop & tradeshow: "Tools of the trade for the private landowner."*
- Miami-Dade County, Dept. of Parks, Recreation and Open Spaces, Natural Areas Management Division, via applicants Joanne Case and Eduardo Salcedo, *Natural Areas Management and TERRA Environmental Academy partnership for the management of Kendall Indian Hammocks Park.*
- Central Florida CISMA, via applicant Sherry Williams, *CF-CISMA Tabletop display.*
- Anglers for Conservation, via applicants Karen and Rodney Smith, *"Escape the invasive invasion" [invasive plant videos].*

Kudzu Bug

By Joseph LaForest and Wayne Gardner

The southeastern U.S. has been afflicted with a new invasive insect, *Megacopta cribraria*, commonly known as the kudzu bug because of its preference for the invasive kudzu weed. Unfortunately, its impact extends to many other targets including soybean crops, homes and people.

The kudzu bug was first discovered in nine northeastern Georgia counties in October 2009. This was the first record of its occurrence outside its native range in Asia. The insect has rapidly spread over 500,000 km² in the southeastern United States. Surveys now confirm its occurrence in all of South Carolina, most of Georgia and North Carolina, a substantial portion of Alabama, and in some areas of Virginia, Tennessee, Mississippi and Florida.

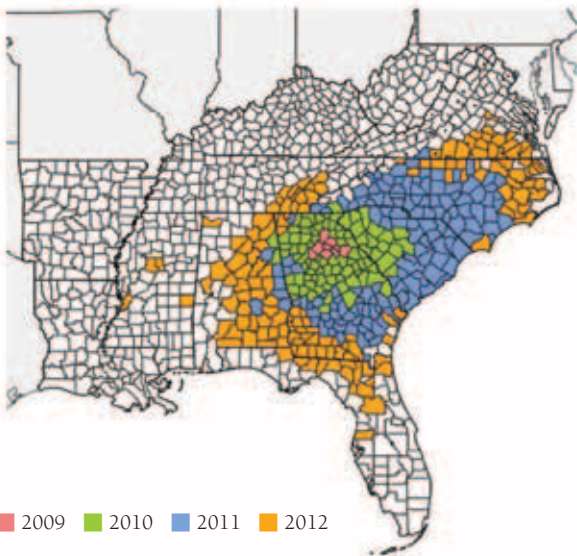
The adults are highly active in the fall and spring, aggregating on lightly-colored surfaces including homes, vehicles and clothing. They produce a defensive chemical that has a mildly offensive odor, can stain clothing and other fabrics, and causes localized skin irritations on some individuals.



JOE EGER, DOW AGROSCIENCES, COURTESY OF BUGWOOD.ORG (UGA)

Kudzu bug (*Megacopta cribraria*) is 3–5 mm long.

DISTRIBUTION MAP

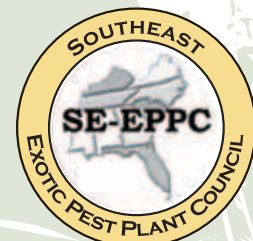


The kudzu bug's preferred plant host in the southeastern U.S. is kudzu, but it also feeds on other legume plants including soybean. Soybean yield reductions averaging about 20% have been recorded in field studies conducted in 2010-13. Trading partners in Central America are concerned about the insect invading their region via exports from infested areas in the United States. Interceptions of insects on container shipments and commercial air flights have impeded trade and commerce. This threat to international trade has trumped the impacts of the bug on kudzu. Researchers reported a 1/3 reduction in kudzu biomass over the 2010 growing season.

UGA's Center for Invasive Species and Ecosystem Health launched its Kudzu Bug (www.kudzubug.org) website on June 28, 2012 to provide up-to-date information on kudzu bug. The website works together with the Southeast Early Detection Network smartphone app (<http://apps.bugwood.org/seedn.html>) to let people report new sightings and have them verified by experts. Real-time reporting from the field combined with new research on how to manage this pest in the landscape is our best hope for minimizing the losses from this new invader.

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**Help protect *your* natural areas
from exotic pest plants – join an
Exotic Pest Plant Council in your state!
www.se-eppc.org**



The IFAS Assessment of Nonnative Plants in Natural Areas of Florida: Florida's Land Grant College Answer to Plant Use Recommendations and Invasive Characteristics

By Kenneth A. Langeland, Stephen Luke Flory and Aimee L. Cooper

Introduction

Botanical exploration was a major focus of the United States Department of Agriculture (USDA) during the early part of the 19th century and early 20th century. Their mission was “---- to help find the plant which will produce the best results of any that can be grown, on every acre of land in the United States” (Fairchild 1911). USDA botanical explorers were dedicated to their task and highly successful. David Fairchild, an early botanical explorer (namesake of Florida's Fairchild Tropical Botanic Garden), reported that “over a dozen new things a day are entered in the list of new arrivals” (Fairchild 1906). Over 31,000 “plant immigrants” had been introduced by the early 1900s (Fairchild 1911). That any of these plants would cause economic and/or environmental problems in the future was not foreseen.

Land Grant Colleges were established by Federal legislation in 1862 to provide broad-based education and public benefit; and the Cooperative Extension Service was established in 1914 as the outreach arm of Land Grant Colleges with the role of bringing the results of agricultural research to end users. Early efforts focused on rural agriculture but the role of Extension evolved through the years to include urban and suburban audiences and one of our traditional roles has been recommending plant species for agricultural and landscape uses. We have had the luxury of a rich palette of plant material that began with the many introductions of the early botanical explorers. We have also had, for many years, the luxury of recommending plants without concern for their invasive potential.

While problems associated with weeds (plants growing where they are not wanted) in agriculture, landscapes, rights-of-ways, and waterbodies have long been recognized, the concept of invasive plants or weeds in natural areas is a more recent concern. Scientific concerns were raised in 1958 over the invasion of natural communities by non-native species and the term invasive plant species was introduced (Elton 1958). While weeds have historically been managed for the benefit of crop production, transportation and recreation, it wasn't until the early 1980s that efforts were begun, in earnest, to address problems associated with invasive plant species in natural areas of Florida.

Weed Science has grown to be a major program area of Land Grant Institutions and developing and recommending weed control practices are major roles of Extension, along with recommending plants for agricultural and landscape uses. With growing concerns in the 1980s over invasive plant species in natural areas in Florida, the Institute of Food and Agricultural Sciences (IFAS) within the

University of Florida (UF), Florida's Land Grant College, was called upon to help address the problem.

This article will trace the history of the involvement of IFAS in addressing invasive plant species and explain the IFAS Assessment of Nonnative Plants in Natural Areas of Florida, the basis for our current policy for recommending non-native plant species for use in agriculture and landscapes.

Florida Exotic Pest Plant Council (FLEPPC) List Stirs Controversy

A group of biologists (including IFAS Weed Science faculty) concerned with potential encroachment of melaleuca from the East Everglades into Everglades National Park began meeting in the early 1980s to address this issue. The need to address other weeds in natural areas was realized during these meetings and, as a result, the Florida Exotic Pest Plant Council (FLEPPC) was established in 1982. In their first newsletter in 1991, FLEPPC published a list of 23 plant species considered by the Council to be invasive in Florida's natural areas. In 1993, the list increased to 126 species. Because it contained economically important species, the list became controversial within the horticulture industry and was criticized by IFAS Horticulturists. Industry and academic horticulturists disputed the invasiveness of many species on the FLEPPC list and their major criticism was that it was not clear how FLEPPC determined that these species were invasive. At the same time, IFAS Weed Science faculty were called upon to help develop management practices and Extension information related to invasive species on the FLEPPC list. IFAS administration was asked by FLEPPC (and affiliated state agencies such as the Florida Department of Natural Resources) why IFAS was still recommending species for planting when they were considered invasive by FLEPPC (e.g., Brazilian pepper (*Schinus terebinthifolius*), West Indian marshgrass (*Hymenachne amplexicaulis*), and carrotwood (*Cupaniopsis anacardioides*)). IFAS Weed Scientists were called upon by the administration to resolve these issues.

To answer questions related to invasive plant species, IFAS Weed Science faculty submitted for review in 1995 “Identification and Biology of Non-native Plants in Natural Areas of Florida.” This book provided peer reviewed literature citations, personal communications, and references to various databases that explained why species were considered invasive. Again, because some of these species were economically important to the horticulture industry and reference was made to the 1995 FLEPPC list, opposition

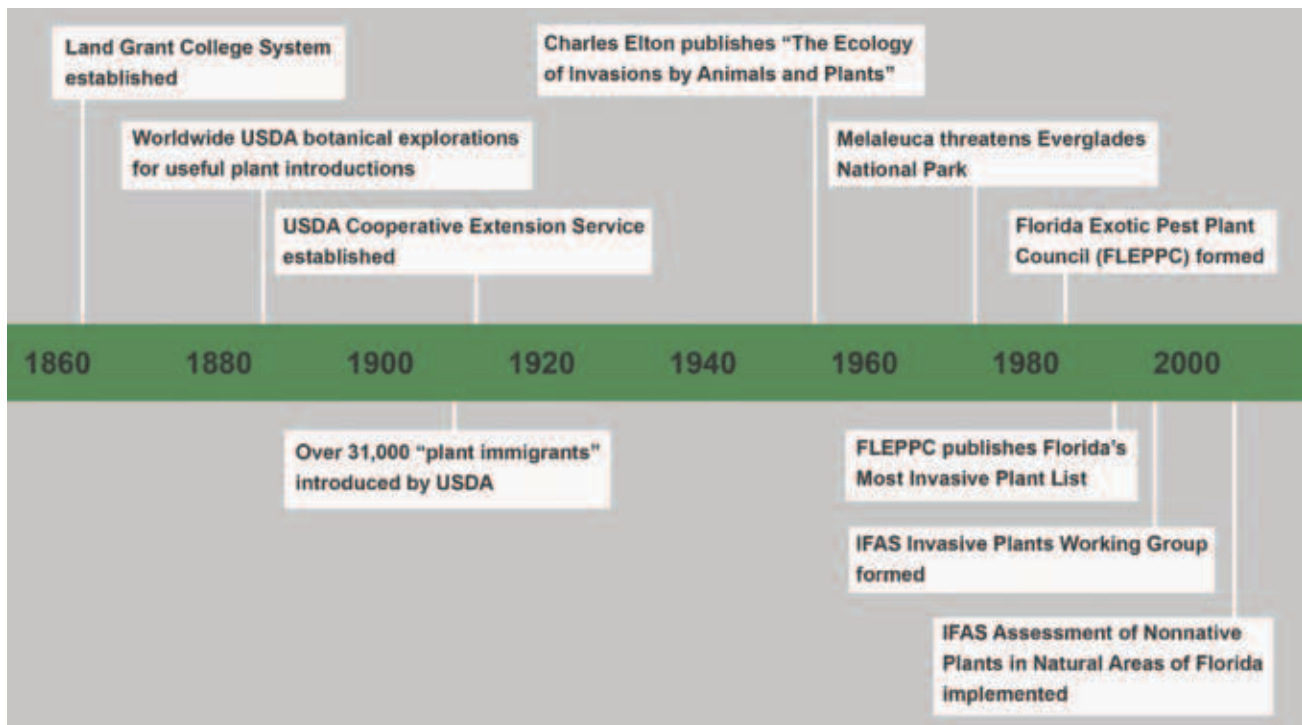


Figure 1. Events leading to development and implementation of the “IFAS Assessment of Nonnative Plants in Natural Areas of Florida.”

to publication of the book arose during the review process among certain IFAS audiences and within IFAS.

IFAS Invasive Plants Working Group is Established

In a 1995 memo from the Associate Vice President of IFAS to the Deans of Research and Extension, it was suggested that a working group be formed to coordinate IFAS research and Extension efforts related to “exotic plant recommendations.” Subsequently, the IFAS Dean of Extension convened a task force to address invasive plant issues within IFAS, “particularly the potential concerns with commercial invasive plants that have escaped cultivation, to identify which plants are of concern, and to recommend research or educational strategies.” A thirteen member multidisciplinary task force was formed with representation from the Departments of Agronomy, Environmental Horticulture, Wildlife Ecology and Conservation, and The Nature Conservancy (Courtesy Faculty in the Botany Department). This task force became what is now the UF/IFAS Invasive Plants Working Group (IPWG) with the original representation as well as the Food and Resource Economics Department and the Florida Nursery, Growers and Landscape Association.

The IFAS Assessment of Nonnative Plants in Natural Areas of Florida

Because the IPWG did not want to rely on outside decisions as to which plant species are invasive and no quantifiable methods existed at the time for determining invasiveness, a subcommittee (comprised of Drs. Alison Fox, Doria Gordon, Joan Dusky, Randall Stocker, and Linda Tyson) was formed to develop a well-defined, transparent

system for distinguishing invasive non-native plant species from those that are not invasive in Florida’s natural areas (Fox et al. 2003). Efforts of this subcommittee and subsequent efforts of the IPWG resulted in development of the IFAS Assessment of Nonnative Plants in Natural Areas of Florida (IFAS Assessment), which consists of three parts: the Status Assessment, the Intraspecific Taxon Protocol, and the Predictive Tool. A separate assessment for aquatic plant species is under consideration. Any IFAS publications, including those developed by county faculty, are required to include a reference to “Conclusions” of the IFAS Assessment and to use terms relative to invasive plant species as defined in the IFAS Assessment when describing features of non-native plants.. Conclusions and detailed information about the IFAS Assessment can be accessed at: <http://plants.ifas.ufl.edu/assessment/>.

Status Assessment

The Status Assessment developed by the subcommittee was approved by IPWG vote and became operational in 2001. It is implemented by trained personnel under the supervision of a faculty member and the IPWG. The Status Assessment is applied at the species level and only to those plants that already exist in Florida. It uses information on ecological impacts, potential for expansion, management difficulty, and economic value to determine invasiveness of a species. This information is solicited from qualified land managers. For a definitive conclusion, there must be agreement from at least three respondents; otherwise, the assessment is reported as “incomplete information” for the species. A species may receive one of three major “Conclusions”: 1) “Invasive: Not recommended,” 2) “Caution: may be recommended but manage to prevent escape,” 3) “Not a problem species” (See <http://edis.ifas.ufl.edu/ag234>).

Infraspecific Taxon Protocol

In most cases, the Status Assessment is applied to the “resident species,” which refers to a non-native species that is found in Florida. The Infraspecific Taxon Protocol (ITP) was developed and adopted by the IPWG to determine whether recommendations about a particular infraspecific taxon (cultivar, selection, variety, or sub-species) should be the same or different from the resident species. There are a few examples where only the cultivar, variety or sub-species has been assessed (e.g. *Epipremnum pinnatum* cv. Aureum). For an infraspecific taxon to be assessed with the ITP, the Assessment team must receive a request to do so. The request must include: supporting evidence that the infraspecific taxon is recognized as a distinct entity and can be consistently and verifiably labeled; and reasons for expecting the infraspecific taxon to behave differently and, hence, to have different Conclusions from the resident species. Conclusions of an ITP assessment must be accepted by a majority vote from the IPWG.

The ITP has been used to assess cultivars of *Nandina domestica*, *Lantana camara*, *Ruellia simplex*, and *Eucalyptus grandis*. *Nandina domestica* cultivars: Firepower, Gulf Stream, and Harbour Dwarf have been assessed as non-invasive (“Not a problem species”), while Harbour Belle retains the Conclusion of the resident species (“Invasive: Not Recommended”) because of seed production and viability. Four cultivars of *Lantana camara* (T-2, 3, 4, and 9) have all been assessed as non-invasive. *Ruellia simplex* cultivar, “Purple Showers”, has been assessed as non-invasive, as well as three numbered cultivars, while additional study on seed-production and sterility has been required for one cultivar submitted for assessment. Assessment of five numbered cultivars of *Eucalyptus grandis* received the same conclusion as the parent species (predicted to be invasive from the Predictive Tool) however specific uses were approved by the ISWG, which are described in “Approved Specified and Limited Uses” on the Assessment Webpage (<http://plants.ifas.ufl.edu/assessment/>).

Predictive Tool

The Status Assessment directs the use of the Predictive Tool to assess species that: 1) have not yet been introduced to Florida, 2) are present in the state but have not yet escaped into natural areas and are recent arrivals or are known to cause problems in areas with similar habitats and climate to Florida, or 3) there is a proposed or new use for a species that would result in higher propagule pressure (Lockwood et al. 2005) or commercial cultivation of a species present in Florida for a new use or increase in acreage cultivated. The Australian Weed Risk Assessment and the Pacific Second Screening have been adapted for the Predictive Tool of the IFAS Assessment. A species that is found potentially invasive with the Predictive Tool is given the Conclusion

“Invasive: Not recommended” and footnoted in the Conclusions table that it was found potentially invasive with the Predictive Tool.

The Predictive Tool has been predominantly used to assess invasiveness of proposed biomass crops. The Florida Department of Agriculture and Consumer Services (DACS) promulgated law in 2006 to regulate planting of crops in Florida for biomass production (581.083 (4) F.S., 5B-57.011 F.A.C). The rule requires a permit to plant a biomass crop greater than 2 contiguous acres of any species not exempted by the rule. A species exemption may be granted if DACS determines in conjunction with IFAS that the species is not invasive. DACS has requested that IFAS use the Assessment to determine invasiveness of proposed biomass crops (species and infraspecific taxon). It has been necessary to use the Predictive Tool because these taxa either do not yet occur in Florida or represent a new use that will increase propagule pressure. Fifty-six potential biomass crops have been assessed with the Predictive Tool. Twenty have received Conclusions of “Accept” (i.e., Not invasive, e.g. fifteen *Eucalyptus* spp., energy cane (4x *Saccharum* hybrid), giant miscanthus [*Miscanthus sinensis* x *Miscanthus sacchariflorus*], sugar cane (*Saccharum officinarum*), sweet sorghum (*Sorghum bicolor*). Twenty five have received Conclusions of “Reject” (i.e., Predicted to be invasive, e.g. fourteen *Eucalyptus* spp., giant reed [*Arundo donax*], napiergrass [*Pennisetum purpureum*; individual elephant grass cultivars have not been assessed], castor bean [*Ricinus communis*], grain sorghum [*Sorghum bicolor*]). Eleven have received the Conclusion of “Caution” (i.e., Evaluate further).

Comparison of IFAS Assessment and FLEPPC List

Because the IFAS Assessment came about in response to controversy over the FLEPPC List of Invasive Plant Species, it is interesting to compare the two today. The major differences between the IFAS Assessment and the FLEPPC List are: 1) the purpose of the lists and 2) the methods used to place species on the list or in categories. The purpose of the FLEPPC list is to inform land managers about plants that need to be managed in natural areas and for homeowners to know which plants on their private properties are considered invasive in natural areas by FLEPPC. Plants are placed on the FLEPPC list after all published and observational data is discussed by a panel of qualified botanists and listing of the species is passed by majority vote. The purpose of the IFAS Assessment is, as described, an in-house policy for recommendations made by IFAS. Invasiveness of plant species is categorized using a transparent quantitative method of the IFAS Assessment.

Over 700 species have been assessed using the IFAS Assessment. Of these, 89 have received the conclusion of “Invasive: Not recommended” in at least one zone (north, central, south). Of these 89, 50 “may be eligible for specific

continued on page 15

North Carolina Invasive Weeds Awareness Week Event

By Sunny Himes

In celebration of North Carolina Invasive Weeds Awareness Week, the Land Trust for the Little Tennessee and Friends of the Greenway hosted an educational extravaganza about exotic invasive plants and animals on the Little Tennessee River Greenway in Franklin, NC. Over 300 Macon County public school students strolled along the Greenway, visiting educational booths staffed by personnel from the Great Smoky Mountains National Park, Appalachian Trail Conservancy, Watershed Association for the Tuckasegee River, Western North Carolina Alliance, Land Trust for the Little Tennessee, Macon Early College, and Debby Boots, an independent contractor. Wells Farm goats were also on the Greenway to demonstrate a natural method for removing exotic invasive plants. The event was funded by Duke Energy.

In addition to learning a lot about exotic invasive plants, insects, mammals, fish, aquatic invertebrates and the harm they cause, students got to taste various foods made from exotic invasive plants, jump kudzu vine jump ropes, conduct water turbidity measurements on the nearby river, and pet the goats. It was a lovely day to be outside and fun was had by all!

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John Odell, Resource Management Coordinator with the Appalachian Trail Conservancy, shows Mountain View Intermediate School students how to use various tools to remove exotic invasive plants.



Roger Clapp, Executive Director of the Watershed Association of the Tuckasegee River, a water-advocacy organization based in Bryson City, shows Macon Middle School students how to measure water turbidity.



Plant Use Recommendations continued from page 14

uses if approved by the IPWG” but specific uses have only been approved for cultivars of *Eucalyptus grandis*. Of the 700, 29 have received the Conclusion “Invasive: Not recommended” because they have been predicted to be invasive using the Predictive Tool. 116 species have received the Conclusion “Caution: may be recommended but manage to prevent escape”.

The 2011 FLEPPC list (their most current) has 75 species listed as “Category I” in at least one region (north, central, south). These are defined as “invasive exotics that are altering native plant communities by displacing native species, changing community structure or ecological functions, or hybridizing with natives.” This definition is similar to that of the IFAS Assessment.

It is difficult to directly compare the conclusions of the IFAS Assessment with the FLEPPC List because of differences in zones but, in general, there is good agreement between the two. Twenty species listed as FLEPPC Category I are concluded in the IFAS Assessment as “Not recommended” in any zones where the species is expected to grow based on cold hardiness, and 24 are concluded as “Not recommended” or “Caution” in some zones. Twenty eight are prohibited by State and/or Federal law and, therefore, not assessed with the

IFAS Assessment. There is only one species, *Deparia petersenii*, listed as FLEPPC Category I, which, while determined to be found in undisturbed natural areas, was not concluded to be invasive in any zones. Two species listed as FLEPPC Category I have not been assessed.

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So Long, Florida Weed Men

By Dennis Giardina

If there was going to be a Mt. Rushmore of upland weed control pioneers in Florida, two of the big stone heads would have to be Greg Jubinsky and Drew Leslie. Being in Florida, I know that we'd have to build the mountain in which to sculpt their likenesses, or repurpose an old landfill mound (just kidding, guys!). Drew and Greg are the architects of the Uplands Program of the Florida Fish and Wildlife Conservation Commission's Invasive Plant Management Section. This program annually funds five to ten million dollars of invasive plant control on public lands across the State of Florida and they ran it for fifteen years. Both of them were also involved with the Florida Exotic Pest Plant Council right from the beginning. Greg and Drew decided to retire a couple of months ago, a little earlier than originally planned, from their 30+ year careers in wildland weed control. I thought now might be a good time to ask them to talk a little about themselves and their careers.

The Uplands Program was established in 1997 to address the need for a statewide coordinated approach to the terrestrial (vs. aquatic) invasive exotic plant problem. The Upland Program funds individual exotic plant removal projects on public conservation lands statewide through a system of contracts with public agencies and cost-effective private weed control contractors. Once a year public land managers are invited to develop an exotic plant treatment proposal for their site. They write up a scope of work, using a template provided, and present their proposed weed control project to one of eleven Regional Invasive Plant Working Groups. Each Working Group ranks all the projects using an evaluation form that helps them determine a score. Ranked projects are then considered for funding by the Uplands Program based upon the order of priority. These project ranking meetings are the purest examples of democracy in action that I've ever witnessed. If you would like to read more about the Uplands Program, see *Wildland Weeds* Summer 2007 (available online at www.se-eppc.org).

I have used the names Drew and Greg together so much over the years that I can hardly mention one without the other (think Abbot and Costello or Laurel and Hardy). I wondered how their partnership began and found out it started in the mid-1970s when they came together to work on the evaluation of triploid (sterile) grass carp as biological control agents for submersed aquatic weeds, particularly hydrilla (*Hydrilla verticillata*). They would measure hydrilla infestation levels, then experiment with stocking rates of the sterile grass carp and analyze the results. They did this successfully on half a dozen lakes in Central Florida and that research led to the first large-scale stocking of triploid grass carp for weed control in the U.S., which took place just south of Orlando in Lake Conway. Drew in particular did a lot of promoting for the use of grass carp for weed control by traveling around the state, talking to aquatic weed managers and their agencies



Drew Leslie (left) and Greg Jubinsky

about the results of their research and the potential benefits of using triploid grass carp as part of an effective integrated pest management strategy.

Drew and Greg have shared an office wall for over 30 years. When Greg was selected to be the Research Program Leader of the (then) Department of Environmental Protection's Bureau of Invasive Plant Management in the early 1980s, Drew was the program's lead scientist and they were given pretty much *carte blanche* to recommend funding for pertinent weed control research or provide support for existing weed control studies. They initiated partnerships most notably with the University of Florida – IFAS and USDA – APHIS scientists, assisting them by helping to fund their invasive plant research, especially the testing of herbicide efficacy and the development of biological control organisms. Opposites attract; you hear it all the time and it does seem that most successful partnerships have involved people who want to accomplish the same goal but who would never think to do it the same way. That certainly holds true for Greg and Drew. Greg has always been focused on results in the sense that if something seems to be working, that's good enough for him. Drew's perspective is more scientific; if something seems to be working, he has to be able to explain how and why.

Twenty-five years ago while Drew and Greg were overseeing a multi-year research project on water hyacinth control on the St. Marks River, they both became more convinced of the need for more state-funded upland weed control. They started to push for the creation of an upland weed control program that would do Aldo Leopold proud by using his ethical litmus test: i.e., if a land management action "tends to preserve the integrity, stability and beauty of a biotic community," then it is correct. They built a case for it and in the mid-1990s they were given a provisional million dollar budget to work with. While Greg focused on getting financial support from the legislature, Drew focused on the data associated with operations. He built databases by plant type to figure out costs of control and used those data to justify additional funding to make a meaningful dent

in the state's upland invasive plant problem. They employed Mark Zeller to help build consensus among the state's public land managers to figure out the most equitable way of determining funding priorities.

In retrospect, Greg said he couldn't imagine a better approach to dealing with the huge amount of upland acreage that was infested by exotic plants when they got started. It's doubtful that if the Uplands Program had been structured differently, i.e. with a "top down" dispensation of funding, it would have produced the same level of success. One of the great joys of their program's developmental years was all the networking involved. Greg, Drew and Mark were inspired and challenged by the insightful questions, opinions and suggestions of their colleagues across the state. It was encouraging for them to be able to interact with hundreds of people who were passionate about their land stewardship, who embodied a "can do" spirit and who saw a very real potential for success. Although every successful program has its naysayers and detractors, in this case, criticism was welcomed. They wanted everyone to be able to contribute to the conversation and let their opinions and suggestions be evaluated based upon their rationale and merit.

Before they retired, Drew and Greg provided data to support their contention that the State of Florida needs to spend around 20 million dollars next year to continue the

reduction of infested acres while providing evaluation and maintenance on as much of the approximately 1.5 million acres of public lands previously treated as possible. Their multi-year plan projected exponential decreases in costs and the priority focus; maintenance on the most problematic herbaceous invasives like climbing ferns, other vines such as air potato, grasses like cogon grass, and fast-growing woody invasives such as Brazilian pepper, melaleuca and Chinese tallow. They were working with other state agencies and The Nature Conservancy to match dollar for dollar the Upland Program's expenditures but for whatever reason, the legislature was unable to consider their recommendations before Drew and Greg signed off. Well, guys, you tried. We know you can't win 'em all.

My perspective is that Greg Jubinsky and Drew Leslie did more than their share of the invasive plant control heavy-lifting over the past thirty-something years and got us to where we are today. Now it's our turn. The bunch of us that still work in the Uplands Program will have to take the torch that Drew and Greg handed off to us and run hard with it to be able to leave a legacy of land stewardship anywhere near as impressive as theirs.

Dennis Giardina is FLEPPC Chair and Everglades Region Biologist with the Florida Fish and Wildlife Conservation Commission. Contact him at Dennis.Giardina@MyFWC.com

PLANT THE THE EPPCs STRIKE BACK WARS

Florida Exotic Pest Plant Council Southeast Exotic Pest Plant Council A Joint Annual Symposium

May 21-23, 2013

Panama City Beach, Florida
Edgewater Beach & Golf Resort
www.edgewaterbeachresort.com



SAVE THE DATE

This meeting will provide an excellent opportunity for students and professionals working on invasive species research, management, and control to present results of recent studies, discuss works in progress, and share ideas.

- Oral presentations
- Workshops
- CISMA/CWMA session
- EDDMapS session
- Poster session
- Field trips
- Continuing education and other professional credits

✓ Student poster competition (cash awards)
Student travel grants available



Please visit us on the web at www.fleppc.org | www.se-eppc.org for updates and conference information.



SE-EPPC

By Brian Arnold, President

I hope that all are well upon receiving this issue of *Wildland Weeds*. I always look forward to my issue arriving in the mail, and am thankful for the

work of Karen Brown in putting it together.

I look forward to serving as your president, and thank Nancy Loewenstein for her leadership over the past few years. I'm also thankful to her for serving as a resource to me in these early days.

From those of us fortunate enough to have work, the common theme I hear is how abundant the work load is. Often the abundance is due to shouldering additional responsibilities because of reduced staff or something of that nature. Times remain lean and it's hard to know what the future has in store. As our economy lingers in a vulnerable state, the challenge to bring focus to our common cause increases.

Fortunately, due largely to the efforts of EPPCs, awareness of the threats stemming from nonnative invasive species appears to be making a breakthrough, albeit a painfully slow one. In my state, Georgia, requests to the chapter for information and speakers appear to be on a slow but steady increase, causing me to believe that the message is getting through on some level. Other organizations, seeing the significance of the problem, are featuring nonnative invasive plant topics in their own programs. So I believe that there is reason to be encouraged. And when my encouragement is tempered by looking upon the privet filled woodlot bordering my home, I think about the philosophy used by the Longleaf Alliance, "Better is better." In our case, each parcel of habitat preserved brings about a "better" outcome than that which would occur if that same parcel were lost to invasive plants. So let us not allow the task at hand to overwhelm us, overwhelming as it may seem.

A year ago the Board of Directors initiated a project aimed at increasing state chapter dialogue and sharing of ideas with regards to invasive plants lists. Alix Cleveland, USDA liaison to the SE-EPPC Board and Program Manager with the US Forest Service, secured a Forest Service grant

to fund the effort. The journey met challenges that none of us anticipated but we are now wrapping up the final report. I believe we have a strategy that, when combined with commitment, will serve as a catalyst to improved transparency of invasive plant listing criteria. I hope you will join me in that commitment, and work toward a scenario in which the plant listing criteria of a given chapter is essentially validated by the listing criteria of the others. Doing so will, among other things, aid in defending the credibility of how the respective list was created. It may also ultimately lead to more consistency in regulatory listings of invasive plants among southeastern states. I appreciate the work of Kathryn Wilson, a University of Florida post-masters student (MS-Ag/Natural Resource Communication) for her diligent work on this project and for simply "coming through" for us. A report summary will be included in the next issue of *Wildland Weeds*.

Please consider getting involved with the efforts of the Council. Comments that I frequently hear from both laypersons and professionals within the invasive plant community is something like "I'm not an expert on invasive plants," spoken as though they are unqualified to accept any leadership role in the effort. Having reached the opinion that the need required is far greater than the short supply of invasive "experts" can possibly handle, I suggest to you that your help can in fact have significant impact.

If you're not "connected" to your chapter's board, or to the SE-EPPC board, consider attending a board meeting. In addition to gaining knowledge about issues that the board is addressing, it's a great way to get to know those already involved, and it allows them to get to know you. Then let nature take its course.

Mark your calendar for our Joint Annual Meeting with the Florida EPPC chapter: "Plant Wars, The EPPCs Strike Back" to be held May 21-23 in Panama City Beach, Florida. The FLEPPC folks are putting the wheels in motion for an excellent meeting in a beautiful location. I hope that you'll make every effort to attend.

Lastly, please remember to share our mission with others, and suggest that they join us. For by growing our membership, we strengthen our influence.



KY-EPPC Update

By Beverly James, President

The KY-EPPC has been working on a few projects throughout 2012, with the main focus being an update of our plant list. We have adopted ranking criteria used by the Virginia Department of Conservation and Recreation and sent a

ranking spreadsheet with 191 species to 80 botanists, ecologists, and land managers throughout the state and neighboring states. This will hopefully provide a more rigorous system of ranking based on impact, biology and ecology, distribution, and difficulty of control.

We have once again collaborated with Bernheim Arboretum and Research Forest to produce and distribute this year's "Least Wanted Poster". The invasive species chosen for 2012 was Sweet Autumn Clematis,

SC-EPPC Update

By Travis W. Rogers, President

On Thursday, September 13, 2012 the SC-EPPC held its annual conference at Hobcaw Barony near Georgetown, SC. It was well attended with almost 60 participants. The program was diverse with topics ranging from current and emerging invasive plant threats such as Chinese tallow, cogongrass, and Japanese climbing fern to plant and animal community responses to invasive plant removal, community-based education and NRCS programs, costs associated with invasive plant management, wetland impoundment invaders, and strategies for Early Detection and Rapid Response (EDRR). The one day conference concluded with a field trip to see Chinese tallow management in a longleaf pine forest.

Elections for new board members were held and several new board members will be joining the leadership team. They are Lauren Pile with Clemson University, Lauren Serra with Congaree National Park, Bill Steele with Leroy Springs & Company and Ben Powell with the Clemson Extension Service. We are pleased to welcome them to our board and look forward to their contributions. If you are interested in joining the SC-EPPC board or becoming more involved with our state chapter, please visit www.se-eppc.org/southcarolina/about.cfm and contact one of our board members. New officer elections will be taking place at our next board meeting which will be held before the end of January 2013.



Wade Harper, a plant manager with Applied Aquatic Management, Inc., with a captured Burmese python that has ingested an adult white-tailed deer.

FLEPPC UPDATE

By Dennis Giardina, Chair

FLEPPC had a very successful joint annual meeting with the Florida Chapter of The Wildlife Society (FL-TWS) in Ocala, Florida with approximately 150 attendees. The theme was "Invasion of the Habitat Snatchers — Wildlife Invades!" Florida is a haven for invasive wildlife and many species are found in the same natural areas where invasive plants flourish. This results in a lot of cross-training or simply cross-experience in capturing, dispatching, searching and reporting of everything from Burmese pythons to feral hogs to Nile monitor lizards and green iguanas. FLEPPC and FL-TWS joined forces to provide an interesting menu for the "Beast Feast" banquet that featured southern fried python chops, fried snakehead (fish), and alligator-venison-tegu lizard gumbo among other novel dishes. The hotel chef graciously agreed to prepare these innovative dishes with ingredients furnished by members.

FLEPPC provided Education/Outreach grants to five groups this year and Research Grants to two graduate students.

FLEPPC will be the next chapter to co-host the annual SE-EPPC meeting in Panama City Beach on May 21-23, 2013. We hope to see you there for informative presentations, field trips, workshops, continuing education credits, a silent auction and more. Visit the FLEPPC website, www.fleppc.org, for updates.



with the native alternatives being Passionflower, Dutchman's Pipe and Virgin's Bower. We are currently developing the 2013 poster, which will feature Autumn and Russian olives as the least wanted plants. As an extension of the Least Wanted posters, we are also in the process of developing pocket guides featuring native alternatives to invasive plants. These could be particularly useful for homeowners and landscapers.

Recently, we have been working with the University of Kentucky in planning the 3rd Invasive Species Conference which will be held in April of 2013. Stay tuned for more details and a call for papers.

Finally, three new board members have joined this year: Frank Melton from Bowling Green, Mary Turner from the Garden Clubs of Kentucky, and Larry Brewer from Northern Kentucky University.

TN EPPC Update

By Sara Kuebbing and Marie Tackett



TN EPPC recently elected Marie Kerr Tackett, Botanist for Big South Fork National Recreation Area, as Board President and Sara Kuebbing, graduate student at University of Tennessee, as Board Treasurer.

TN EPPC recently held two invasive species workshops, one in September in Oak Ridge, TN and one in November in Nashville, TN. Workshops focused on identification of Tennessee invasive plants and management options for common species. These workshops will be designed in the hopes that other TN EPPC members can utilize them in their area of the state. Both were well-attended.

TN EPPC completed a survey of federal, state, and private entities to estimate the costs of invasive plant management in the state of Tennessee. The research was completed by our research intern, Alix Pfennigwerth, and was funded through a matching small grant from SE EPPC. [See page 4 for a report on this research.]

TN EPPC assisted with a purple loosestrife survey of the Nolichucky River in eastern TN this summer to assess location and densities of loosestrife levels. The river was divided into 12 sections, on average of 8 river miles each. Eighteen volunteers surveyed half the river sections, totaling 50 river miles. Sixty-nine locations of purple loosestrife were mapped, recorded, and submitted to the EDDMapS project. The data show that loosestrife occurs along much of the Nolichucky watershed; however population levels



KRIS JOHNSON

Participants in the Nolichucky River survey for purple loosestrife.

are generally low and populations are not ubiquitous in distribution. The remaining 6 sections of river will be surveyed in summer 2013 to provide a more complete picture of infestation size and distribution throughout the entire watershed. Control measures should also begin with removal or control of loosestrife where proper permissions allow. The banks of the Nolichucky are owned by a variety of governmental organizations, as well as a patchwork of private landowners, so a coordinated effort will be needed.

TN-EPPC also contributed to *The TDEC* (TN Department of Environment & Conservation) *Erosion Prevention and Sediment Control Manual* by providing native seed-mix alternatives to their current seed-mixes for revegetation (largely composed of non-native and often invasive plants such as *Serecia lespedeza*). TDEC accepted our recommendations and included our native lists as preferred alternatives. Next we intend to contact TDOT and offer our assistance with their seed-mixes.

ALIPC also recently updated the **Alabama Invasive Plant List**. Seven new species were added including pampas grass, Chinese parasol tree, lantana, rattlebox, sweet breath of spring, periwinkle, and Brazilian elodea. Additionally, five new species were added to Watch List A including Japanese chaff flower, Japanese ardisia, sawtooth oak, Australian pine, and water clover. Six new species were added to Watch List B including Japanese barberry, Japanese spirea, Japanese beautyberry, Chinese elm, paper mulberry, and winter creeper. The complete list is posted on the ALIPC web page at www.se-eppc.org/alabama/. ALIPC encourages SE-EPPC members to submit sightings of these new additions to EDDMaps (www.eddmaps.org/) so we may work to implement EDRR strategies where possible for these new problem weeds.

In 2013, ALIPC will be hosting two separate meetings. We will hold our annual conference in Huntsville, Alabama and we will host a second meeting in Weeks Bay, AL. Dates have yet to be set for either conference but look for details soon!



ALIPC Update

By Stephen Enloe, President

The Alabama Invasive Plant Council hosted their 2012 annual conference jointly with the Southeast Exotic Pest Plant Council's annual meeting. The conference was held May 8-10 in Auburn, Alabama, with 174 in attendance. The theme of the conference was "Past, Present and Future of Invasive Plants." In keeping with the theme, the meeting included three keynote speakers who addressed the past (the geologic history of Alabama in relation to Alabama plant communities and invasive plants), the present (current status of forest invasions) and the future (bioenergy and invasive plants). Three field trips also highlighted some of Alabama's most serious aquatic and terrestrial weed problems at Lake Eufaula, Tuskegee National Forest, and the Cypress Nature Park near downtown Montgomery, AL. We received many positive comments on the conference from attendees from several states. Many thanks to the ALIPC board who worked hard to make the conference a success!



GA-EPPC

By Brian Arnold, Past President and Karan Rawlins, President

GA-EPPC continues to educate the general public, as well as industry, about the harm caused by nonnative invasive plants. Using methods proven to be practical and effective public outreach occurs through traditional means including the Annual Conference, invasive plant management workshops and publications. Keeping the GA-EPPC website updated and using social media such as Facebook are helping us to reach new audiences.

A great opportunity for GA-EPPC to communicate its message comes early in the year as an invasive plant workshop is conducted at the Georgia Green Industry Association's (GGIA) "Wintergreen" Conference. Brian Arnold of Songbird Landcare presented "The Problem of Invasive Plants," providing an overview of the environmental harm they cause. Former GA-EPPC President Cynthia Taylor of Elachee Nature Science Center presented "Managing Invasive Plants," covering integrated management strategies and the safe use of herbicides. The workshop was concluded with a presentation on "New Invasive Plant Threats," including a discussion on EDDMapS by President Karan Rawlins of UGA's Center for Invasive Species and Ecosystem Health.

The Wintergreen Conference is designed to speak directly to the Green Industry, and is an important part of the GA-EPPC program. The Wintergreen 2013 Conference is scheduled for January 25 and will consist of the same lineup of speakers. In addition, GGIA has offered GA-EPPC a complimentary booth in the trade show portion of their conference, allowing us to increase our outreach.

The 2012 GA-EPPC Annual Meeting and Conference was held November 8 at UGA's Griffin Campus, and the board was very excited about the quality of the program. The keynote speaker was Dr. Douglas W. Tallamy, Professor and Chair of Entomology and Wildlife Ecology at the University of Delaware and author of "Bringing Nature Home, How You Can Sustain Wildlife with Native Plants".

This year for the first time, vendors were invited to our annual conference. Rather than charging the traditional vendor fee, GA-EPPC asked that vendors donate door prizes to be given away to attendees throughout the meeting. Vendors at this year's meeting included the Georgia Wildlife Federation, the Longleaf Alliance, Georgia Forestry Commission, Nearly Native Nursery, Invasive Plant Control, Inc., and artist Linda Fraser.

Also at the Annual Meeting, Karan Rawlins moved into the Presidency, Bodie Pennisi was approved as President Elect, and J. Mindy Moffett, Jr. Treasurer.

Georgia is proud to have been chosen as recipient of the SE-EPPC \$1,500 matching grant that will be used to train teachers to use the classroom-ready curriculum, "Lakeville," as well as provide materials for teachers to take back to the classroom. The curriculum educates students about natural resources, invasive species, and civic responsibility. "Lakeville" was created by Amy Richard at the University of Florida Center for Aquatic & Invasive Plants through The Florida Invasive Plant Education Initiative. Susan Reinhardt and Karan Rawlins at the University of Georgia in Tifton, along with Kitty Lane of Jacksonville, Florida, will conduct the first teacher trainings in Georgia.

Two longtime members have retired this year. Elaine Nash served as Treasurer and Membership Coordinator since 2001. Jim Allison was instrumental in GA-EPPC's organization and was elected GA-EPPC President in 2001. GA-EPPC is grateful for the service of Elaine and Jim, and both will be missed.

NC EPPC Update

By Rick Iverson, President

NC EPPC was pleased to host approximately 80 enthusiastic participants at its 2012 annual meeting at the North Carolina Arboretum in Asheville, NC. The theme "Understanding and Managing Invasive Plant Threats in the North Carolina Highlands" was addressed by a slate of pertinent topics that included an overview of specific weed problems and their management as well as a discussion of invasive weed programs in the North Carolina mountains. NC EPPC was very pleased to attract Bonnie Harper-Lore as a speaker. She provided an interesting picture of national invasive weed issues along our transportation systems in a talk entitled "Invasive Plants on the Move." Insight on using non-native, non-invasive plants in landscapes was provided in a presentation by Dr. Barbara Fair with North Carolina State University. Other meeting activities included a social hour, a training session for those interested in promoting Early Detection and Rapid Response and an equipment demonstration. Planning for NC EPPC's 2013 meeting has started. In an effort to move the meeting around the state, the board has decided to have the February 2013 meeting at Carolina Beach State Park. The location will provide a perfect venue to recognize the successful efforts of the Carolina Beach Vitex Task Force.

Other NC EPPC projects include continuing participation in meeting opportunities to introduce the NC target weed list for Early Detection and Rapid Response (EDRR). President Rick Iverson and Board Member Margaret Fields have participated in six non-native invasive plant workshops sponsored by the NC Forest Service. Two more are planned later this year. NC EPPC sponsored Invasive Weeds Awareness Week again during the first week of April. As part of the week's activities, interested stakeholders were asked to participate in a poll to list their top 5 "most reviled" invasive plants. Projects still in the planning stages or continuing include: Designing a new display for meetings, continuing evaluation of the EDRR target weed list, continuing updates to the NC EPPC Facebook page and planning for a meeting with EDRR contacts listed on North Carolina's EDRR plan.



Internodes

The North American Invasive Species Network

NAISN is an incorporated membership organization founded in November 2010 by university and government scientists in North America. Membership is limited to regional invasive species university centers, government institutions, and research labs (hubs and nodes) and individuals (affiliates) with invasive species interests and qualifications that are valuable to the mission of NAISN. NAISN hubs are defined as regionally or internationally-based, thematic-based, and/

or taxonomically-based coordinated invasive species management activities that address common needs and pool resources in response to invasive species issues. NAISN Nodes are government agencies and other organizational entities with a recognized role in invasive species management and are members of a specific Hub, or through the direct interaction with the NAISN Board of Directors. NAISN Affiliates are individuals with invasive species interests and qualifications that are valuable to the NAISN mission and may be appointed to Advisory Boards or Committees by the Board of Directors. NAISN is a non-profit organization that will work to unify and connect these existing invasive species efforts into a single network resulting in better communications, coordination, collaboration, and cooperation in dealing with the multi-jurisdictional aspects of biological invasions in North America. NAISN Member Organizations/Agencies include the Center for Invasive Species Management (Montana State University-Bozeman), the Invasive Species Research Institute (ISRI) at Algoma University (Ontario, Canada), the National Institute of Invasive Species Science (USGS-Colorado), the Geosystems Research Institute (GRI) at Mississippi State University, the Center for Aquatic and Invasive Plants at the University of Florida, the Comisión Nacional para el Conocimiento y Uso de la Biodiversidad (CONABIO) in Mexico, the Center for Invasive Species & Ecosystem Health at the University of Georgia, and the Canada Aquatic Invasive Species Network (CAISN). Visit www.naisn.org or contact the NAISN Managing Director, Mr. Don Schmitz, for more information: Don.Schmitz@MyFwc.com

Legislative Update

By Matthew King

Exotic Pest and Invasive Plant Councils from Florida, Georgia, Alabama, Kentucky, Oklahoma, the Midwest, Mid-Atlantic, Pacific NW, the National EPPC and the Weed Science Society of America were among the many (96) signatories on a letter penned by the National Wildlife Federation (NWF) concerning a potential new rule from the EPA that would incentivize the planting of *Arundo donax* (giant reed) for biofuel use. FLEPPC, through NA EPPC and the National Environmental Coalition on Invasive Species (NECIS), submitted comments on the proposed rule in February 2012. These comments suggested that EPA was violating Executive Order 13112 which prohibits Federal agencies from carrying out programs or actions that promote the use of invasive species. The comments caused EPA to pull the rules for further review. However, it now appears that the rules are being supported by the Office of Management & Budget (OMB). The letter was hand-delivered to OMB on October 5th. In addition, the NWF submitted a letter signed by more than 200 scientists concerning the use of invasive bioenergy crops. For more information and to read the letters, visit the NWF website at www.nwf.org and search the website (top right corner) for Look Before You Leap.

While FLEPPC is an invasive plant organization, the Board of Directors has agreed to a letter of support for the Invasive Fish & Wildlife Prevention Act of 2012. This act was introduced by Rep. Louise Slaughter (D-NY) along with an original bipartisan group of nine co-sponsors. Currently, there

Stay in Touch!

SE-EPPC LIST-SERV

If you're not on the SE-EPPC ListServ, you are missing a free and easy resource to great information such as professional job listings, breaking news on invasive species, pending legislation, great answers to good questions from the field, chapter news, upcoming workshops and conferences, and much more. Join the list-serv to stay current in the field of exotic invasive plants — go to www.se-eppc.org and click on SE-EPPC ListServ under Resources.

FLEPPC LIST-SERV

FLEPPC members have an additional list for issues specific to Florida. To join the FLEPPC list, go to <http://www.fleppc.org/listserv.htm>

Anyone can be a member of either or both lists. We welcome your input!

Landscape Alternatives to Invasive Plants of the Midwest

Many plants that are highly invasive in natural areas are still sold at nurseries throughout the Midwest. Consumers often buy these plants without realizing the impacts these species have on native ecosystems. In 2007, the Midwest Invasive Plant Network (MIPN) created a brochure called, "Landscape Alternatives for Invasive Plants of the Midwest," which has been popular with master gardeners, county Extension staff, native wildflower societies, and homeowners across the region. Working with the University of Georgia's Center for Invasive Species and Ecosystem Health, MIPN has created a new smart phone application that will allow users to access information on alternatives to invasive plants while they are shopping. The app will make it easier for consumers to make good choices and avoid bad ones when selecting plants for their property.



See all the Bugwood apps at <http://apps.bugwood.org/apps.html>

are thirty (30) co-sponsors. The purpose of the legislation is to give the US Fish & Wildlife Service additional tools to prevent the importation of invasive animals into the United States. While technically FLEPPC's focus is on plants, the ultimate goal of our organization is the protection and management of our natural areas. Invasive non-native wildlife also plays an important (and devastating) role in the management of these sites. The letter is currently being drafted and should be ready for board review in the coming weeks. For more information about the act, visit the National Environmental Coalition on Invasive Species at <http://www.necis.net>

Matthew King is Chair of the FLEPPC Legislative Committee and an Environmental Program Supervisor for the Palm Beach County Environmental Resources Management Dept; mking@pbcgov.org

US Forest Service Invasive Management Directive

The US Forest Service has published a "national-level direction on the management of invasive species across aquatic and terrestrial areas of the National Forest System." According to US Forest Service Chief Tom Tidwell, "Invasive species cost the American public an estimated \$138 billion each year. They deplete water supplies, destroy recreation opportunities and damage landscapes across the country. We are taking this bold approach to better protect our nation's forest and water resources from the threat of invasive species." The Forest Service has had an invasive species program, but this policy "adds new requirements for agency-wide integration of invasive species prevention, early detection and rapid response, control, restoration, and collaborative activities across all National Forest System lands." This will allow them to "more effectively manage invasive species in the context of environmental issues such as adaptation to climate change, increasing wildfire risk, watershed restoration, fragmentation of habitats, loss of biodiversity, and human health concerns," says USDA Undersecretary Harris Sherman.



By Steven T. Manning, President

The Pacific Northwest Invasive Plant Council has had an exciting year. Because of budget constraints and travel restrictions our board decided a good strategy would be to host "roaming" workshops where the PNW-IPC brought the workshop to the participants. In 2011-2012 we initiated these local workshops with our first events in Eugene, Oregon and Everett, Washington, and a cooperative workshop with the Oregon State Parks in Bandon Dunes State Park, OR. Highlights and presentations from all three meetings can be found on our website. Future workshops have been scheduled for Bend, OR and Leavenworth, WA for 2012-2013.

Also in 2012 the National Fish and Wildlife Foundation awarded a \$20,000 grant to the PNW-IPC to support an Early Detection / Rapid Response Pilot Program (WA, OR). PNW-IPC started this project hosting trainings in Seattle, Olympia and Yakima with 92 attendees and 65 people signing up to be volunteers. Each volunteer will conduct field work using EDRR survey forms within our eight pilot WA counties that encompass four Cooperative Weed Management Areas. Resources for this project (survey forms, maps, PowerPoint presentation used in the training, etc.) are currently posted on our website at: <http://www.pnw-ipc.org/edrrlocal.shtml>

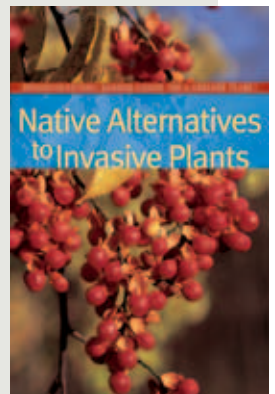
Native Alternatives to Invasive Plants (2011 edition) by C.C. Burrell, J. Marinelli and B. Harper-Lore, eds. Brooklyn Botanic Garden, New York, 242 pages. Financial supporters of this publication include the Federal Highway Administration and the Bureau of Land Management.

This handy guide includes "Questions and Answers" on both invasive and native plants, and a list of invasive garden plants. The heart of the book is the section,

Encyclopedia of Native Alternatives to Invasive Plants by C. Colston Burrell.

It is divided into color-coded sections for trees, shrubs, vines, herbaceous plants, and grasses. Invasive plant information includes the

current invaded range while the native alternative plant information includes native habitat, range and hardiness zones. Ornamental attributes and uses and growing tips round out the alternative native plant descriptions. All plants have color photographs.



Visit the online shop at www.bbg.org

NEW TOOL!

Invasive Plant Flagging Vinyl



Bright, fluorescent pink/glo INVASIVE PLANT vinyl roll flagging is now available through **Forestry Suppliers**.

Rolls are 150 feet and cost \$2.85 each. 9+ rolls are \$2.20 per roll; 108+ rolls are \$1.90 per roll.

Note: item is not yet listed on their website but you may order by phone:

(800) 647-5368
(use stock number 57948)

SAVE THE DATE



March 3 – 8, 2013

Please mark your calendars for events in Washington DC and around the country.

State, federal and local and tribal officials meet with NGO's, industry and stakeholder groups addressing invasive species to examine laws, policies and creative approaches to prevent and reduce invasive species threats to our health, economy, environment and natural resources including special places. Attend events in the US Capitol and in Washington DC or host your own event that explores local problems and solutions to invasive species.

Highlights include:

- Congressional Briefing: How invasive species threaten America's special places
- Forum on the *Politics of Invasion* – are invasive species considered to be an important national and international issue?
- National Invasive Species Awards Ceremony
- Workshop: Legal and Policy Issues Containing Aquatic Invasive Species
- Congressional Reception with the Association of Fish and Wildlife Agencies
- Invasive Species Advisory Committee – Public Meeting
- Presentation on the invasive potential of bio-energy feedstocks
- Kids Invasive Species Day at the US Botanic Garden
- Invasive Species on the Menu: Asian Carp Fish Fry
- Panel: Invasive Species Impacts on Transportation and Manufacturing

In addition to the National Invasive Species Council — NISAW partners include the Weed Science Society of America, the Association of Fish and Wildlife Agencies (AFWA), the Great Lakes Commission (GLC), the Center for Invasive Plant Management, the US Botanic Garden, the Aquatic Nuisance Species Task Force, the Federal Interagency Committee for the Management of Noxious and Exotic Weeds, the Federal Interagency Committee on Invasive Terrestrial Animals and Pathogens, as well as numerous federal, state and local officials and private nonprofit and business groups and individuals. Our partner organizations will also be sponsoring other events during the same week including AFWA's Teaming with Wildlife 2013 Fly-In Event in support of state and tribal wildlife plans; Great Lakes Day sponsored by the GLC, and other activities.

*For additional information go to www.nisaw.org
or contact Lori Williams at Lori_Williams@ios.doi.gov or Lee Van Wychen at Lee.VanWychen@wssa.net*