

Wildland Weeds

FALL 2005



Prst std
U.S. Postage
PAID
Gainesville, FL
Permit No. 726



Purple Loosestrife



Phragmites

Renovate® Aquatic Herbicide For Selective, Effective Wetland Restoration.

The selective action of Renovate Aquatic Herbicide is ideal for wetland restorations. Renovate lives up to its name by providing complete, yet selective, control of tough exotic emergent species, such as phragmites and purple loosestrife, while allowing beneficial native plants to thrive, for the most rapid recovery of the wetland ecosystem. Renovate is fast-acting on tough weeds, with visible results in just days and breaks down quickly so it's easy on the environment. In addition, Renovate carries no restrictions on recreational water uses such as swimming and fishing or on livestock consumption of water from the treatment area.

How can we help?

SePRO Corporation is interested in hearing about your wetland restoration programs. Visit the Renovate page of the SePRO web site—www.sepro.com—fill in a quick survey to receive a complimentary gift along with some professional advice on your project.

For more information about Renovate Aquatic Herbicide, contact a SePRO Preferred Applicator or your SePRO Aquatic Specialist or call **1-800-419-7779**.



SePRO Corporation Carmel, IN 46032

Always read and follow label directions. Renovate is a registered trademark of Dow AgroSciences, licensed exclusively for use by SePRO Corporation. ©Copyright 2005 SePRO Corporation.

Renovate® Aquatic Herbicide



Officers

Jim Burney, Chair
Aquatic Vegetation Control, Inc.
561/845-5525
L1J2@aol.com

Dianne Owen, Secretary
Florida Atlantic University
954-236-1085
downen@fau.edu

Kristina Kay Serbesoff-King,
Treasurer
The Nature Conservancy
561-744-6668
kserbesoffking@tnc.org

Karen Brown, Editor
University of Florida
Center for Aquatic
& Invasive Plants
352/392-1799
kpbrown@mail.ifas.ufl.edu

Mike Bodle,
Immediate Past Chair
South Florida Water
Management District
561/682-6132
mbodle@sfwmd.gov

Alison Fox, Chair Elect
University of Florida
Agronomy Department
352/392-1811, Ext. 207
amfox@ifas.ufl.edu

Directors

Roger Clark (2nd year)
Lee County Parks & Recreation
239/461-7453
Roger@leegov.com

Drew Leslie (2nd year)
Florida DEP Bureau of Invasive
Plant Management
850/245-2822
Drew.Leslie@dep.state.fl.us

Cressida Silvers (2nd year)
USDA/ARS
954/475-0541 ext. 144
csilvers@saa.ars.usda.gov

Jim Duquesnel (2nd year)
Florida Park Service
305/451-1226
james.g.duquesnel@dep.state.fl.us

Scott Ditmarsen (1st year)
DowAgro Sciences
813/866-7090
scditmarsen@dow.com

Jon Lane (1st year)
USACOE Invasive Species
Management
904/232-1044
Jon.S.Lane@saj02.usace.army.mil

Tony Pernas (1st year)
National Park Service
Florida/Caribbean Exotic Plant
Management Team
305/252-0347
Tony_Pernas@nps.gov

Paul Pratt (1st year)
USDA-ARS Invasive Plant
Research Laboratory
954/475-6549
prattp@saa.ars.usda.gov

Committee Chairs

By-laws
Dennis Giardina
941/657-7637
Dennis_Giardina@fws.gov

CAST Representative
Dennis Giardina
Ken Langeland (alternate)

Editorial
Karen Brown

Education
Leesa Souto
Stormwater Management
Academy
321/722-2123
Lsouto@mail.ucf.edu

FNGA/FLEPPC Liaison
Doria Gordon
University of Florida
The Nature Conservancy
352/392-5949
dgordon@botany.ufl.edu
-and-
JB Miller
St. Johns River Water
Management District
millerjb@aug.com

Legislative
Matthew King
Palm Beach County
561/233-2400
mking@co.palm-beach.fl.us

Local Arrangements
Mike Bodle

Membership
Katy Roberts
727/726-1455
kroberts@ij.net

Merchandise
Tony Pernas

Nominations
Mike Bodle

Outreach
Tom Fucigna
CZR Inc.
561/747-7455
tomfucignajr@hotmail.com

Plant List
Kathy Craddock Burks
Florida Natural Areas
Inventory
850/224-8207 Ext. 210
kburks@fnai.org

Program Chair
Cheryl McCormick
University of Florida-IFAS
Center for Aquatic &
Invasive Plants
352/846-2516
cheryl@ufl.edu

Research
John Volin
Florida Atlantic University
954/236-1115
jvolin@fau.edu

Training
Jim Duquesnel

Vendors
Scott Ditmarsen

Webmaster
Tony Pernas

Task Force Chairs

Australian Pine
Robert Egan
Habitat Restoration Resources
239/574-8173
HabitatRR@yahoo.com

Brazilian Pepper
Jim Cuda
University of Florida
Entomology Department
352/392-1901 Ext. 126
Jcuda@ifas.ufl.edu

Carrotwood
Chris Lockhart
Habitat Specialists, Inc.
561/738-1179
chris@habitatspecialists.com

Dioscorea
Mike Bodle

Grasses
Greg MacDonald
University of Florida
Agronomy Department
352/392-1811 Ext. 228
gemac@mail.ifas.ufl.edu

Lygodium
Amy Ferriter/Tom Fucigna

Skunkvine
Brian Nelson
SWFWMD
352/796-7211
Brian.Nelson@sfwmd.state.fl.us

Chinese Tallow
Cheryl McCormick

Melaleuca
Francois Laroche
South Florida Water
Management District
561/682-6193
flaroche@sfwmd.gov

**SOUTHEAST EXOTIC
PEST PLANT COUNCIL**
www.se-eppc.org

Officers

President
Brian Bowen
Tennessee Dept Environment
and Conservation
Division of Natural Heritage
615/532-0436
Brian.Bowen@state.tn.us

Vice President
Joyce Bender
Kentucky State Nature
Preserves Commission
502/573-2886
Joyce.Bender@ky.us

Secretary
Kristen Gounaris Allen
Richmond National
Battlefield Park
804/795-5019
Kristen_Allen@nps.gov

Treasurer
Tony Pernas, Florida EPPC

**SE-EPPC Chapters and
Regional Organizations:**
Alabama, Florida, Georgia,
Kentucky, Mid-Atlantic,
Mississippi, New England,
North Carolina, South Carolina,
Tennessee, USDA-Forest Service

Wildland Weeds

FALL 2005, VOLUME 8, NUMBER 4

Table of Contents

- 4 Georgia EPPC Events Highlight Emerging Threats
by Christopher Evans and David Moorhead
- 6 Cool Stuff on Kudzu
- 7 Flame Vine (*Pyrostegia venusta*): An invasive plant of
mature scrub and potentially other natural habitats in
Florida *by Jeffrey T. Hutchinson*
- 12 *Iris pseudacorus* in Jackson County, Florida
by Robert L. Farley
- 15 A Task Force is Born *by Ross Dickerson*
- 18 Invasive Plant Lists of the Southeast: A Primer
by Alison Fox
- 22 SE-EPPC Annual Symposium Grows into a Conference
by James (Jim) H. Miller
- 23 Strategic Planning for SE-EPPC *by Brian Bowen*
- 25 Internodes
- 27 Book Review: *Stormscaping - Landscaping to Minimize Wind
Damage in Florida*

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

An **exotic plant** has been introduced to Florida, either purposefully or accidentally, from a natural range outside of Florida. 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 it is expanding its range in Florida plant communities.

Wildland Weeds (ISSN 1524-9786) is published quarterly by the Florida Exotic Pest Plant Council (FLEPPC) and the Southeast Exotic Pest Plant Council (SE-EPPC) to provide a focus for the issues and for information on exotic pest plant biology, distribution and control.

**Direct all editorial and
advertising inquiries to:**

Karen Brown, Editor
Wildland Weeds
7922 NW 71st Street
Gainesville, FL 32653
352/392-1799; FAX 352/392-3462
kpbrown@ifas.ufl.edu

Direct address changes to:

Jackie Smith
DEP - Invasive Plant Management
9737 Gumbo Limbo Lane
Jensen Beach, FL 34957
561/722-2479
jackie.c.smith@dep.state.fl.us



Editorial Committee:

Mike Bodle
Kathy Craddock Burks
Jim Cuda
Tom Fucigna
Ken Langeland
Michael Meisenburg

Design by JS Design Studio.
Printing by StarterChildren,
Gainesville, FL.

On the Cover: Invasives in cahoots! The invasive apple snail (*Pomacea canaliculata*) has deposited its eggs on the invasive Chinese tallow tree (*Sapium sebiferum*) in Lake Lafayette, Leon County, Florida. Photo by Jess Van Dyke, Bureau of Invasive Plant Management, FL-DEP.

The Exotic Pest Plant Council has not tested any of the products advertised or referred to in this publication, nor has it verified any of the statements made in any of the advertisements or articles. The Council does not warrant, expressly or implied, the fitness of any product advertised or the suitability of any advice or statements contained herein.

by Christopher Evans and David Moorhead, The University of Georgia and Georgia EPPC



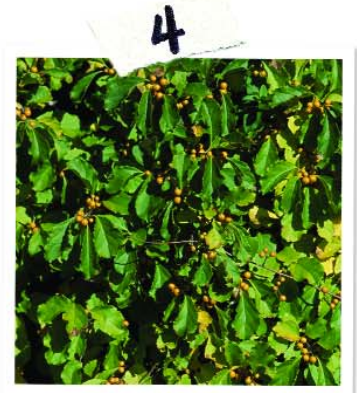
Japanese climbing fern
(*Lygodium japonicum*)



cogongrass
(*Imperata cylindrica*)



garlic mustard
(*Alliaria petiolata*)



Oriental bittersweet
(*Celastrus orbiculatus*)

Four invasive plant species, generally unknown to the public, are posing significant threats to the Georgia landscape and have a high potential to become widespread if left unchecked. The Georgia EPPC has sponsored several workshops and field days to highlight these and other invasive plant species, raise awareness of the problem and help equip participants to deal with the emerging threats.

On September 25, 2004 the Georgia EPPC hosted its first “Invasive Plant Control Workshop” in Griffin. This workshop focused on identification and control of invasive species in the Piedmont region of Georgia. Fifty-four people from a variety of occupations attended this meeting. Oriental bittersweet was highlighted as an emerging pest, both in the piedmont and mountain regions of Georgia. The workshop familiarized participants with the problem of Oriental bittersweet and equipped them to identify and control this new threat.

A similar event was held on April 13, 2005 in Tifton. This workshop focused on identification and control of Japanese climbing fern and cogongrass, two new threats to the coastal plain, as well as other common invasive plants. Both natural resource professionals and interested landowners attended, 43 in all. Participants visited a Japanese climbing fern infestation site that is currently under an eradication program.

A workshop focusing on invasive species of the Atlanta area is being planned for September 2005. Garlic mustard and Oriental bittersweet will be highlighted as emerging pests in need



PHOTO BY CONNIE GRAY, GA-EPPC

of control. On June 4, 2005, 33 volunteers helped control the garlic mustard on Kennesaw Mountain during a volunteer workday, resulting in the removal of over 100 large garbage bags filled with garlic mustard plants. The managers at Kennesaw plan to use similar volunteer events along with other control techniques within an intensive eradication program.

A cogongrass field tour was held specifically for University Extension, Georgia Forestry Commission, and Georgia

1. Japanese climbing fern (*Lygodium japonicum*) is being found throughout the coastal plain and southern piedmont regions of Georgia. While this plant has been in Georgia for quite a while, the population now seems to be spreading at an alarming rate. Photo by: James H. Miller, USDA Forest Service, www.forestryimages.org; **2.** Infestations of **cogongrass** (*Imperata cylindrica*), a Federal Noxious Weed, have been found in eight counties in southern Georgia. Photo by: Charles T. Bryson, USDA ARS, www.forestryimages.org; **3.** The only known infestation of **garlic mustard** (*Alliaria petiolata*) in Georgia is at Kennesaw Mountain National Battlefield, north of Marietta. Garlic mustard was introduced into the area sometime in the mid-1980s. The infestation is actively spreading and covers several acres near the top of Kennesaw Mountain. Photo by: Chris Evans, University of Georgia, www.forestryimages.org; **4. Oriental bittersweet** (*Celastrus orbiculatus*), long a problem in states to the north, is being found more frequently in northern Georgia. Photo by: James H. Miller, USDA Forest Service, www.forestryimages.org

Department of Natural Resources professionals by the University of Georgia Bugwood Network. The field tour took place in Mitchell County on March 29 with 58 people attending. Topics included identification and ecology of cogongrass and the importance of reporting any suspected infestations. The day ended with a tour of a pine stand infested with cogongrass.

In addition to workshops and field days, Georgia EPPC is sponsoring the printing and distribution of pest alert fliers that detail identification and control of each of these species. For more information on these invasive species, visit www.invasive.org. For specific information on cogongrass, visit www.cogongrass.org. To find out about invasive species in Georgia or the Georgia EPPC, please visit www.gaepcc.org.

Contact Chris Evans at cevans@uga.edu



Garlic mustard before (left) and after removal on Kennesaw Mountain.

INTRODUCING NEW TECHNOLOGY US Patent #5,888,500



TopFilm makes algaecide stick to algae

TopFilm™

Sticker for Rainfastness

(Outperforming all current surfactants tested to date)

**Maximizes Treatments
by Minimizing Wash-off**

Locate Your Distributors:
www.biosorb-inc.com



Treatment with Standard Surfactant

Treatment with **TopFilm**

"Natural Products from the Grain-Belt of the USA"

For more information: L. Marshall, Ph.D., 636-936-1400
Biosorb, Inc., St.Charles, Missouri, USA





Cool Stuff on Kudzu includes the title “An extract of the Chinese herbal root Kudzu reduces alcohol drinking by heavy drinkers in a naturalistic setting,” by S.E. Lukas, et al in the journal *Alcoholism: Clinical & Experimental Research* 29(5):756-762 (May 2005) (www.alcoholism-cer.com). The authors state that “extracts of kudzu containing a variety of isoflavones have been shown to reduce alcohol drinking in rats and hamsters.” When “heavy” alcohol drinkers were treated with a placebo or a kudzu extract for 7 days, then given an opportunity to drink their preferred brand of beer in “a naturalistic laboratory setting,” it was found that the kudzu treatment resulted in a significant reduction in the number of beers consumed and an increase in the time to consume each beer. There were no reported side effects of the kudzu treatment.

Meanwhile, Jack Callahan of Callahan’s Kudzu Management LLC reports on a recently patented device to prevent kudzu vines (*Pueraria montana*) from climbing guy-wires and similar structures in utility right-of-ways. Studies found that kudzu will only stand unsupported to a height of approximately three and one-half feet, and it will not climb a structure with a diameter greater than eight inches or a total perimeter of more than 24 inches, almost irrespective of shape. A success rate of over ninety five percent was achieved during testing of prototype devices. Reported in the proceedings of the Southeast Exotic Pest Plant Council’s Seventh Annual Conference, *Invasive Plants: Arming to Defend and Win*, May 3-5, 2005. Abstracts from the meeting can be found at www.se-eppc.org

In “Kudzu (*Pueraria montana*): History, physiology, and ecology combine to make a major ecosystem threat” (*Critical Reviews in Plant Sciences* 23(5):401-413 (2004)), authors I.N. Forseth and A.F. Innis report that over 85 million kudzu seedlings were provided to landowners by government agencies in the southeast in the first half of the 20th century. “In 1953, kudzu was removed from the list of approved plants for erosion control, in 1970 it was officially labeled a weed, and in 1997 it was placed on the Federal Obnoxious [sic] Weed List.”

And, finally, in Mr. Channing Cope’s 1949 book, *Front Porch Farmer*, he states, “It is a wonderful thing to make land live again.” Mr. Cope’s chapter on kudzu is titled “The Miracle Vine” and he calls kudzu “the champion” against erosion. He writes, “For some reason, possibly the fact that the miracle vine will run up on trees and telephone wires and will take over yards and empty lots in city areas, there has arisen a great prejudice against kudzu.” Garden club members who told him they loathed kudzu were referred to as “lovely but shortsighted women.” He closes the chapter with a poem, “*Song of the Kudzu Vine*,” by Ollie Reeves, poet laureate of Georgia at the time. The final stanza reads,

*Happy the farmer, happy the day
 Gathering Kudzu, tossing the hay,
 Come join the chorus, help us to sing,
 Down with erosion, “Kudzu is king!”*

compiled by Karen Brown, Ed.

Flame Vine (*Pyrostegia venusta*): An invasive plant of mature scrub and potentially other natural habitats in Florida

by Jeffrey T. Hutchinson, Center for Aquatic and Invasive Plants, University of Florida

PHOTOS BY JEFFREY T. HUTCHINSON



The flower of flame vine has been described as the most beautiful flower in the world.

While problematic and highly invasive non-native plants are well known in Florida (FLEPPC, 2005), other non-native plants may remain obscure or become locally invasive in small geographic areas or single locations. At Archbold Biological Station (ABS) in Lake Placid (Highlands County), Florida, flame vine (*Pyrostegia venusta*) was planted at seven locations in the northeast section of the original property circa 1936 at the edge of scrub habitat (ABS Archives). Today, those plants still persist and have spread beyond the original introduction point into scrub habitat. Flame vine is easily propagated from fragments (Watkins and Sheehan,

1975), and the area with the highest density of flame vine at ABS is an area that is frequently disked for firebreaks.

Flame vine is an evergreen, woody vine native to Brazil that produces one of the most beautiful flowers in the world (Menninger, 1970). Its showy orange flowers open in the winter (February to April), making it a potentially popular and highly conspicuous landscape plant. Flame vine grows rapidly, covering trees, fences, and other structures (Whistler, 2000). Its leaves are compound, bifoliate or trifoliate, with three part tendrils that facilitate its ability to climb. Flame vine thrives in open areas, is drought tolerant, and appears to tolerate a wide variety of

soils (Riffle, 1998). In Florida, this species spreads vegetatively and is not known to produce seeds (Watkins and Sheehan, 1975).

Flame vine is promoted as a landscape plant in Florida (Black, 2001), but plantings are recommended with caution because the vine can cover and strangle trees (Gilman, 1999). It is documented from only Brevard and Broward Counties in Florida (Wunderlin and Hansen, 2003). However, flame vine has been observed in many areas of south-central Florida growing along fence lines, orange groves, snags, power line poles, and old homesites, often covering extensive areas along the ground and in the canopy.

A PLANT TO BE WATCHED

Flame vine (*Pyrostegia venusta*) is being watched by the FLEPPC Invasives List Committee for further spread into natural areas. It has been observed spreading slowly in a few urban parks in central Florida. If you have seen this species in other conservation lands, please submit a record of the occurrence to the FLEPPC database (www.fleppc.org/database). If the record represents a new county of occurrence, please make a herbarium specimen as a voucher for the Plant Atlas (www.plantatlas.usf.edu). Tips on making vouchers can be found via a link at the FLEPPC database introduction page.

– K.C. Burks
List Committee Chair



Flame vine growing over scrub vegetation at Archbold Biological Station.

The author has observed the vine in Desoto, Glades, Hardee, Highlands, and Okeechobee Counties, but there are no reports of flame vine invading natural areas in Florida.

In January 2005, Tony Pernas and Jonathan Taylor mapped the distribution of Old World Climbing Fern, Melaleuca, Brazilian pepper and Australian pines from Lake Okeechobee northward to Orlando. These systematic reconnaissance flights (SRF) are part of a joint mapping effort between the South Florida Water Management District and the National Park Service. During these flights flame vine was readily identified from the air due to its bright inflorescence and its presence in the canopy of trees. The observers noted that the species was particularly abundant in the Tampa/St. Petersburg area. Flame vine was not mapped during the flights but possibly can be added in future mapping efforts.

Flame vine is listed as a weed in Peru (Holm et al., 1979) and documented as invasive in Tanzania after fragments were discarded along the edge of a tropical forest (Binggeli, 2000). The potential range of this plant in the United States includes warmer regions such as peninsular Florida, southern Louisiana, southeastern Texas, southwestern Arizona, and coastal California (Gilman, 1999). If ambient temperatures drop below -2.0 C, flame vine is damaged or top-killed (Menninger, 1970).

Characteristics of Flame Vine in Long Unburned Scrub Habitat

At ABS, flame vine is prominent in the northeast section of scrub habitat that has not been burned in > 75 years. It spreads by vegetative growth both horizontally and vertically, climbing into the canopy with clasping tendrils. The vine encircles and covers scrub vegetation such as scrub palmetto (*Sabal etonia*), scrub hickory (*Carya floridana*), and various species of scrub oaks (*Quercus* spp.). Flame vine can form a near complete canopy over shrubs and trees. At ABS, flame vine quickly invades gaps created from tree fall or wind damage, often forming > 80% ground coverage. The main roots lie prostrate along the ground or just under the debris or duff layer with each node developing a single descending tap root with multiple fine roots and one to multiple ascending stems. The three-part tendrils attach to limbs, leaves, bark, and other structures that allow the plant to climb into the canopy. The root system of flame vine consists of a matrix from above-ground nodes that are spaced ca. 15.0 – 90.0 cm apart, with roots growing over one another.

At ABS, continuous roots were measured in excess of 22 m in length with numerous stems emerging from crowns along the main root and ascending into the canopy. Several sprouts occur at each



Sprouts of flame vine following a prescribed burn.



Treatment of flame vine requires that all nodes be treated with herbicide.

crown growing vertically along adjacent stems and other vegetation, or horizontally along the ground forming new crown nodes. Some vines pulled from the canopy were > 15 m in length, while the height of the surrounding vegetation was < 9 m. Once flame vine reached the top of the canopy, it grew horizontally along the top of the canopy or dropped over the edge.

Invasive Potential of Flame Vine

At ABS, flame vine coverage increased from less than a few square meters at seven point locations along the boundary fence line in 1936 to 1.3 ha in 2003 based on area coverage estimated with GPS. The average annual rate of spread was 0.02 ha (200 m²) per year over the last 68 years. Most of the coverage was both vertical and horizontal, but only horizontal coverage was calculated. From April, 2002 to October, 2003 more than 11,500 stems and roots were physically removed from the ground, sub-canopy, and canopy layers, and the root-crown nodes were treated with herbicide. However, flame vine is still present as numerous nodes went undetected during treatment.

Table 1. Weekly growth rates of flame vine under different light and moisture conditions.

Growth Conditions	Weekly Growth Rate (cm)
Shade (75%) and Water	12.7
Open Sunlight and Water	10.6
Shade and No Water	10.0
Open Sunlight and No Water	0.0

Observations at ABS indicate that flame vine spreads slowly and does not appear to be a major threat to natural areas unless it is planted near or adjacent to a natural area and allowed to persist. Since flame vine spreads exclusively by vegetative growth and no sexual reproduction has been observed in Florida, the vine should not be planted within 100 meters of any natural area in Florida.

Control of Flame Vine

Flame vine re-sprouted within 7 days from all root nodes that were cut (n = 25). Prescribed burning resulted in 19 resprouts (76%; n = 25) with resprouts being observed after 25 days. This indicates that flame vine is tolerant to fire. The use of fire was successful in removing the aboveground portion of the plant and burning off the duff layer, making subsequent herbicide treatments easier.

Garlon 4 (triclopyr, 10% product) mixed with Veg Oil (90%) was successful in controlling flame vine. No resprouts (n = 25) were recorded for stems cut and treated at the node with 10% Garlon 4. Vines growing vertically above the cut were not treated and died. However, resprouts were observed on untreated nodes > 0.75 m from the treated node attached to the same root, indicating that herbicide translocation may not occur from node to node. Thus, every node, possibly thousands per hectare, must be treated for complete control.

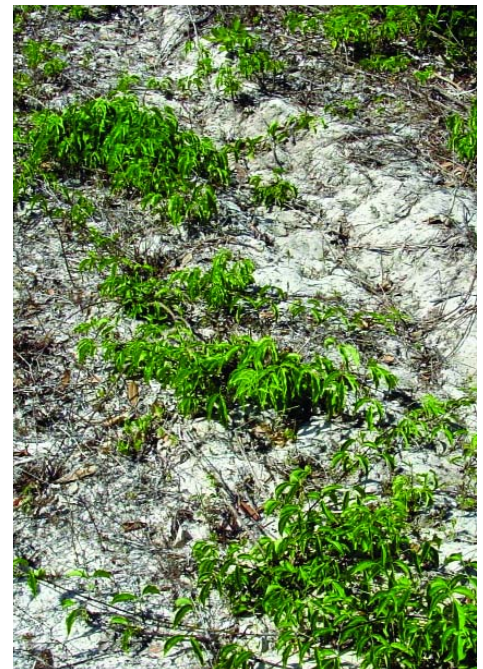
Foliar spraying of flame vine along a fence line in the northeast section of ABS with Roundup (glyphosate, 3% product) or Weedmaster (2,4-D and dicamba, 3% product) was successful in defoliating the

vine, but the vine resprouted in < 6 months. A second treatment along the fence line with each herbicide again resulted in defoliation, but subsequent resprouting occurred again within 6 months. Thus, foliar spraying is not recommended unless followed with herbicide treatment of the nodes.

Resprouting Potential and Growth Rate

Stems (n = 25), roots (n = 25), and nodes (n = 25) were placed in sand and exposed to four conditions: 1) direct sunlight, 2) 75% canopy cover, 3) direct sunlight and watered daily, and 4) 75% canopy cover and watered daily, to evaluate the sprouting potential of flame vine. In treatments under shade or watered, all crown nodes re-sprouted within one week, but no stems or roots re-sprouted. For treatments placed in the open sunlight and not watered, no sprouts were recorded for stems, roots, or nodes, indicating that flame vine nodes need moisture or shade to re-sprout.

Vegetative growth from nodes was observed within 6-7 days. Tendrils were documented at 32 days following planting. Multiple sprouts were recorded for most nodes with the highest number of sprouts for a single node being 18. The highest growth rate recorded was 12.7 cm per week for a single sprout from a node that was under shade and watered. The highest growth rate for a sprout receiving water and exposed to sun was 10.6 cm per week, while the highest growth rate for a sprout receiving no water and placed in the shade was 10.0 cm per week (Table 1). Based on



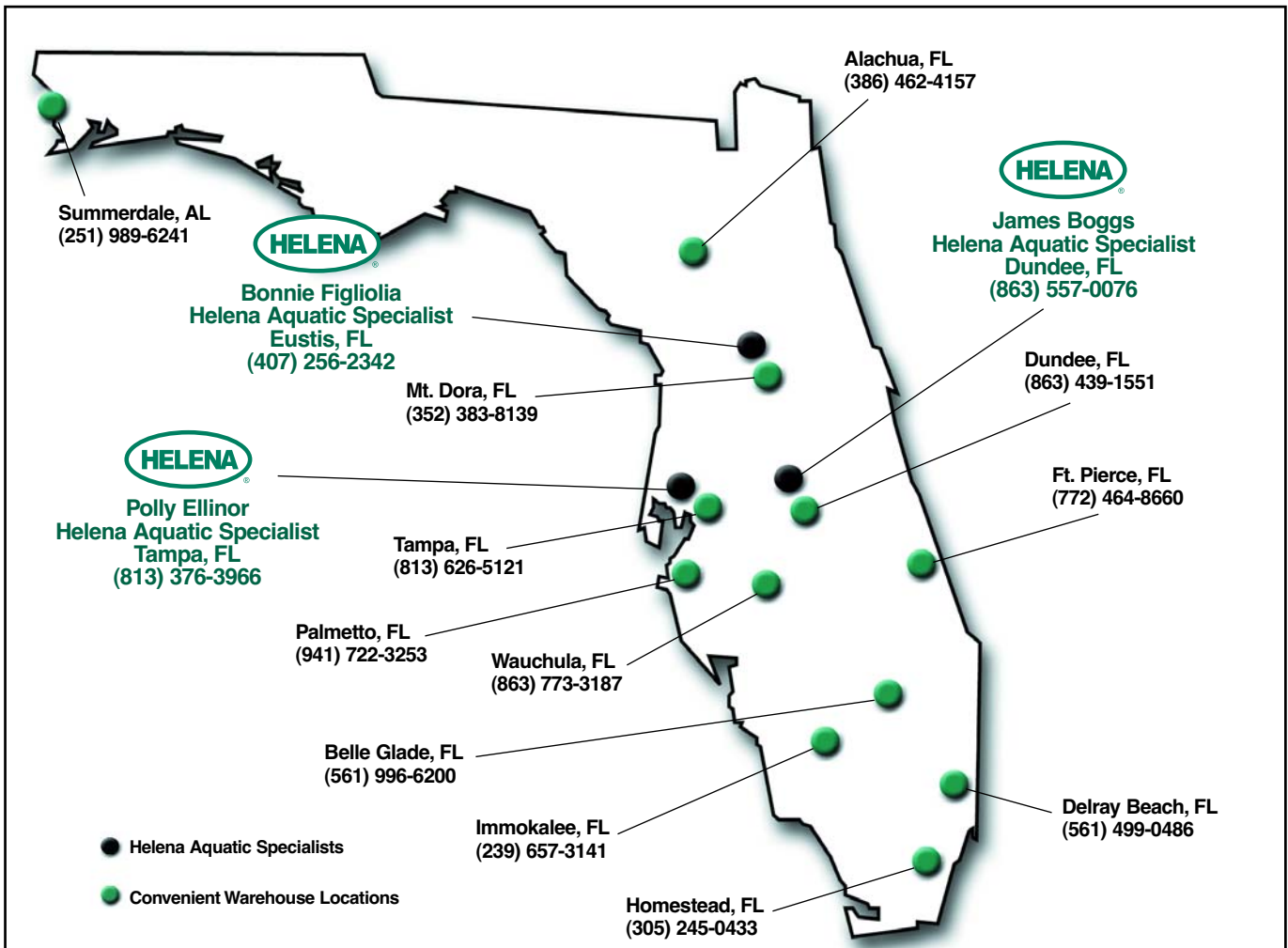
Resprouts of flame vine along a frequently disked fire-lane at ABS.

these results, the nodes of flame vine could easily become established at other locations at ABS during disking, especially during the rainy season. At ABS, numerous flame vine plants occur along a 1.2 km stretch of frequently disked fire-lane that is > 0.6 km from where the initial plants were planted. Similar growth rates were observed for resprouts that were cut or burned. After seven months, the growth rates of flame vine after cutting (n = 25) or burning (n = 25) indicated that it can grow to lengths > 4.0 m (or ca. 14 cm per week).

Conclusion

At ABS, flame vine is locally invasive in long unburned scrub where it was established as a landscape plant in 1936. It occurs in ruderal sites in Highlands and other counties in south-central Florida, but dispersal is limited to human introduction and vegetative growth. Once established, flame vine spreads vertically creating a closed canopy cover and altering the structure and composition of the area it has invaded. Its horizontal matrix of roots and nodes makes control very difficult once the plant is established. However, horizontal spread of the plant is slow possibly due to the fact that it does not produce seeds in Florida. At ABS, the spread of flame vine is more invasive vertically

...continued on page 11



Aquatic Weed Control Products From Helena Chemical Company

Exclusive Agent for the Sonar Product Line in Florida: **NEW!**

Sonar* A.S. • Sonar SRP • Sonar PR • **Sonar "Q" Quick Release* Pellets**

Complete Line of Herbicides including:

Nautique* • Aqua-Kleen® • Aquathol® K • Aquathol® Super K • Hydrothol® 191
Reward® • Rodeo® • Weedar® • **Renovate®** • **HardBall®** **NEW!**

Florida Distributor for SePRO Products:

Sonar* A.S. (pints & quarts) • Captain* Algaecide • Revive*

Complete Line of Adjuvants including:

Kinetic® HV • Optima® • Quest® • Induce® • Dyne-Amic®

HELENA *People...Products...Knowledge™*

Helena Chemical Company • PO Box 1758 • Dade City, FL 33526

© 2002 Helena Chemical Company. Aqua-Kleen and Weedar are registered trademarks of Rhone-Poulenc Ag Co. Aquathol and Hydrothol are registered trademarks of ELF Atochem. Reward is a registered trademark of Syngenta Professional Products. Rodeo is a registered trademark of the Monsanto Company. AquaPro and Renovate are registered trademarks of Dow AgroSciences. *Captain, Nautique, Revive, Sonar, Precision Release and Sonar Quick Release are trademarks of SePRO Corporation.

than horizontally as it creates a shaded understory that limits sunlight to other plants and may inhibit fire. The horizontal rate of spread calculated from ABS of ca. 6.9 m / year was less than the spread documented in Tanzania of 10.0 m / year in a tropical hammock (Binggeli, 2000).

Flame vine is adaptable to a wide array of habitat types from tropical forests (Binggeli, 2000) to xeric habitats such as scrub, but appears to require moisture or shade for initial establishment. The extensive canopy it creates forms mesic-like habitat below in a xeric ecosystem that may facilitate vegetative spread due to increased soil moisture. It resprouts robustly following cutting and burning, but can be controlled using Garlon 4 (10% product) as long as each node is treated.

At ABS, the spread of flame vine was probably facilitated by the spread of root fragments with nodes during disking of fire-lanes. Numerous sprouts are common along the fire-lanes in the northeast section of ABS. Binggeli (2000) noted that discarded fragments of flame vine covered a section of tropical hammock within 1 year of the fragments being discarded. In planters, small fragments with nodes sprouted within a week under moist or shaded conditions. Thus, mechanical treatment such as disking may spread plant fragments such as nodes that develop and spread into natural areas. Flame vine exhibits the potential to become a problematic plant in xeric habitat, and possibly tropical hardwood hammocks and other mesic habitats if it becomes a highly popular landscape plants.

The invasive potential of flame vine in natural areas is moderate if it is planted nearby, and eradication is difficult to achieve,

even for an area as small as 1.3 ha. Flame vine is not problematic on a landscape level like other species of invasive vines in Florida such as Old World climbing fern (*Lygodium microphyllum*), skunk vine (*Paederia foetida*), air potato (*Dioscorea bulbifera*), or rosary pea (*Abrus precatorius*). However, in the ever increasing urban-wildland interface that occurs as Florida is rapidly developed, it is likely that more land managers and naturalists will face increased numbers of non-native plants such as flame vine spreading from urban into natural areas.

For more information, contact Jeffrey Hutchinson at the Center for Aquatic and Invasive Plants, 352-392-9981, jthutchinson@ifas.ufl.edu

Binggeli P. 2000. The East Usambaras (Tanzania) - The pearl of Africa. *Aliens* 10: 14-15. Available on line at: <http://members.lycos.co.uk/WoodyPlantEcology/invasive/aliens.htm>

Black, R. J. 2001. Vines of Florida. Institute of Food and Agricultural Sciences, Circular 860. University of Florida, Gainesville. 16 pp.

FLEPPC. 2005. List of Florida's Invasive Species. Florida Exotic Pest Plant Council. Internet: <http://www.fleppc.org/05list.htm>.

Gilman, E. F. 1999. *Pyrostegia venusta*. Institute of Food and Agricultural Sciences, Fact Sheet FPS-496. University of Florida, Gainesville. 3 pp.

Holm, L. G. J. V. Pancho, J. P. Herberger and D. L. Plucknett. 1979. A geographical atlas of world weeds. Krieger Publishing, Florida.

Menninger, E. A. 1970. Flowering vines of the World. Hearthside Press Incorporated, N.Y. 410 pp.

Riffle, R. L. 1998. The Tropical Look: An Encyclopedia of Dramatic Landscape Plants. Timber Press, Portland, Oregon. 428 pp.

Watkins, J. V., and T. J. Sheehan. 1975. Florida Landscape Plants. University of Florida Press, Gainesville. 420 pp.

Whistler, W. A. 2000. Tropical Ornamentals. Timber Press, Portland, Oregon. 542 pp.

Wunderlin, R. P., and B. F. Hansen. 2003. Atlas of Florida Vascular Plants (<http://www.plantatlas.usf.edu/>). [S. M. Landry and K. N. Campbell (application development), Florida Center for Community Design and Research.] Institute for Systematic Botany, University of South Florida, Tampa.

**For the plants you
love to hate...**

**Pandion
Systems, Inc.**



**Invasive Exotic Plant
Management**

**Ecologists and land
managers...**

Specializing in complex control and research projects requiring a high degree of ecological proficiency and experience.

Gainesville, Florida
352-372-4747

www.pandionsystems.com
exotics@pandionsystems.com

**Applied
Aquatic**
MANAGEMENT, INC.

**"Over 20 Years...
Leading the way
in effective, efficient
and economical
Aquatic & Natural Area
Exotic Pest Plant Management"**

P.O. Box 1469
Eagle Lake, FL 33839
1-800-408-8882
www.appliedaquaticmgmt.com

**AQUATIC
VEGETATION
CONTROL, INC.**
ENVIRONMENTAL SERVICES

**"Sound,
value-oriented
environmental
stewardship"**

6753 Garden Road, Suite 109
Riviera Beach, FL 33404
(561) 845-5525
(800) 327-8745

Fax: (561) 845-5374
email: L1J2@aol.com
www.avcaquatic.com





Iris pseudacorus in Jackson County, Florida

A Case Study in the Early Detection and Prevention of Potential Invasives

by Robert L. Farley, Planning and Landscape Architect, PBS&J

In the fall of 2004 during routine inspection of storm water facilities, Chris Connor, Maintenance Engineer for the Marianna Area of District 3, Florida Department of Transportation (DOT), discovered a dense growth of a large plant encroaching into the basins of two retention ponds. Since capacity of the retention system is compromised by such growth, Mr. Connor requested the assistance of the District Landscape Manager (DLM), Willson McBurney, to identify and recommend treatment for the infestation. Bob Farley, representative of the DLM, visited the site along Hwy 231 near Campbellton in Jackson County, Florida, and the plant was identified as *Iris pseudacorus*, Yellow flag iris. Specimen samples were collected and submitted to the Godfrey Herbarium at Florida State University for verification.



PHOTO BY V. RAMEY, UNIVERSITY OF FLORIDA, CENTER FOR AQUATIC AND INVASIVE PLANTS. USED WITH PERMISSION.

outfall weirs, it was feared the non-native iris would escape into a downstream watershed and infest the Chipola River Basin and, eventually, the Apalachicola River.

Research into the potential for harm revealed that *Iris pseudacorus* is listed by the Plant Conservation Alliance as an invasive plant affecting natural areas in the U.S., citing documentation of major infestations in twelve states. Review of the Element Stewardship Abstract published by The Nature Conservancy's Wildland Invasive Species Team (<http://tncweeds.ucdavis.edu/esadocs.html>) also described sites in Oregon, Connecticut, and Texas with dense monocultures of Yellow flag iris. As feared, it was also noted from the Abstract that downstream propagation with high seed germination rates is likely because the seeds are buoyant and can remain so for seven months, causing dispersal by water over long distances.

Investigation into the origins of the infestation revealed that the plants had been installed in the landscape portion of a roadway project for Hwy 231 in the spring of 2003. Plans prepared by the landscape architect of record specified *Iris brevicaulis* to be planted, listing the common name as "Louisiana iris." *Iris pseudacorus* is routinely misidentified as Louisiana iris in the horticultural trade so the mistaken installation resulted, without detection, until the plants had become established. Since the storm water facilities were equipped with

It was decided that control of the infestation was best performed with an integrated management approach, combining both mechanical removal of the rhizome mat and application of an aquatic herbicide. In the spring of 2005, the ponds were drained and maintenance crews from the DOT hand dug as much of the mat as possible. The plants were removed from the site, dried and subsequently burned. This method of disposal was determined to be the most effective in preventing continued infestations. The ponds were monitored,



and when plants were observed resprouting from rhizome fragments, a herbicide application was scheduled. A 1.5% solution of a glyphosate based aquatic herbicide with surfactant was applied approximately one month later. Monitoring the effectiveness of the herbicide is ongoing to determine the need for follow-up applications.

Although *Iris pseudacorus* does not currently appear on the FLEPPC list of exotic invasives, it was determined by the DOT that the potential for future environmental damage was considerable, and that initiating control methods in the earliest

stages of infestation was the best chance for successful management. The Department intends to use this experience to alert maintenance engineers across the state to the value of early detection and treatment of potential invasive species.

For more information, contact Robert L. Farley, Planning and Landscape Architecture, PBSE-J 100 Beckrich Ave. Suite 230, Panama City Beach, FL 32407, 850-236-8675, rlfarley@pbsj.com

More information on *Iris pseudacorus* may be found at: <http://plants.ifas.ufl.edu/seagrant/irispse2.html>



Intelligent Solutions.

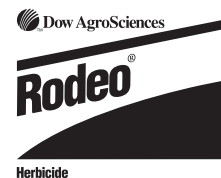
Dedicated Service.

Garlon* 3A specialty herbicide • Garlon* 4 specialty herbicide
Rodeo® herbicide • DMA* 4 IVM herbicide

- Proven performance
- Returnable, refillable containers
- Experienced sales force

For more information, contact Scott Ditmarsen
(813-866-7090 or scditmarsen@dow.com)
or visit
www.vegetationmgmt.com

*Trademark of Dow AgroSciences LLC
Always read and follow label directions



Solutions for Invasive Weed Control



Quality Vegetation Management™
Making The World a Better Place.

QVM is a set of principles that creates and sustains healthy habitats through professional, ethical and responsible practices.

Learn more at www.vmanswers.com/QVM



Clean Up
The Weeds
Without
Upsetting
The Locals.

Habitat
herbicide

WITH HABITAT® HERBICIDE, YOU CAN RESTORE AQUATIC AREAS WITHOUT HARMING WILDLIFE.

As part of a responsible **Quality Vegetation Management™** program, **Habitat** provides long-term control, eliminating the need for repeat applications. And **Habitat** uses less active ingredient and breaks down quickly, so it's gentle on the environment. Be tough on weeds, not wildlife. Use **Habitat**.

1-800-545-9525 | www.vmanswers.com

Professional
Vegetation
Management

 **BASF**

The Chemical Company

Always read and follow label directions.
Habitat is a registered trademark, and Quality Vegetation Management is a trademark of BASF. ©2005 BASF Corporation. All rights reserved.

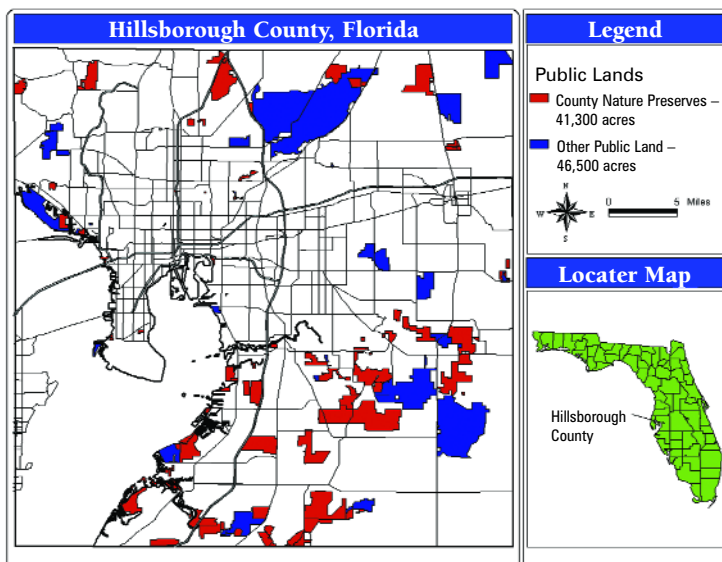
A Task Force is Born

A FLEPPC Education & Outreach Grant Sponsored Program

by Ross Dickerson, Parks, Recreation and Conservation Department

The Development

In May of 1999, Hillsborough County Commissioner Ronda Storms' office received a letter from a concerned resident and environmental activist in southern Hillsborough County, the late Barbara Waddell. The letter contained a number of requests/suggestions concerning environmental protection in the Ruskin area and the Cockroach Bay ecosystem, with particular focus on the control and eradication of invasive plant species such as Brazilian pepper (*Schinus terebinthifolius*), lead tree (*Leucaena leucocephala*), and Australian pine (*Casuarina* spp.). Suggestions concerning the control and eradication of invasive non-native plant species included: identification of one point of contact through which county eradication efforts could be coordinated; increased public outreach and staff education programs; improved coordination with state and federal exotic control efforts; contact with other counties to identify successful control tactics; and better coordination in the use of volunteers.



There are over 80,000 acres of public land in Hillsborough County

In response to these concerns, the County Administrator's office directed the formation of the Invasives Control Work Group to evaluate County efforts to control and eradicate non-native pest plant species. The work group consisted of individuals from numerous County departments, as well as interested citizens. Over a 12-month period, the group formulated recommendations and presented them in a report to the Hillsborough County Board of County Commissioners. Following the Board's approval on August 16, 2000, administrative staff from the Parks and Recreation Department and the Public Works Department met to implement the recommendations, with the Parks and Recreation Department in the lead role. In October of 2001, the Hillsborough County Invasive Species Task Force (ISTF) was born.

Who makes up the Invasive Species Task Force?

The Hillsborough County Invasive Species Task Force (ISTF) is made up of several Hillsborough County Departments, local and state government agencies, non-profit organizations, private organizations, and most notably, the citizens. These partners include:

Hillsborough County Departments

- Parks Recreation and Conservation
 - Conservation Services
 - Maintenance Services
 - Parks Services
- Planning and Growth Management
- Office of Neighborhood Relations
- Extension Service
- Public Works
 - Specialized Services
 - Mosquito Control
 - Stormwater Management
- Real Estate
- Solid Waste Management
- Environmental Protection Commission

Other Government Entities

- Cities of Tampa and Temple Terrace
- Southwest Florida Water Management District
- Florida Department of Environmental Protection
- Tampa Bay Estuary Program

Non-Profit Partners

- Tampa Bay Watch
- Wildlife Fellowship Inc.
- Mayor's Beautification Program
- The Florida Aquarium

Citizen and Other Partners

- Ruskin Community Development Foundation
- Tampa Electric Company

The four main goals of the Task Force are to: remove existing non-native invasive plants on public lands and stem their spread to other sites; facilitate citizen involvement and volunteerism with control and removal of invasive plants; create awareness and educate the public about the existence and harm of invasive plants to Florida's native plants and wildlife; and educate the public on invasive plant control, eradication techniques and the importance of native habitat.

Accomplishments

Over the past four years, the Task Force has accomplished several projects. Invasive removal workdays are held at least four



Work Day volunteers handing branches to County staff to be chipped



Volunteers cutting and dragging Brazilian pepper branches at Sun City Heritage Park, Ruskin

times per year and the number of volunteers increases each time. The ISTF has received over \$250,000 in grant funding to produce public outreach and education materials and remove invasive species from public lands. Many of the ISTF members provide outreach to the Tampa Bay area. The Tampa Electric Company (TECO) produced a bill insert explaining invasive plants and distributed it to cus-

tomers around Tampa Bay. They also funded the Task Force's display board that is presented at local events. The monthly newsletter produced by the Office of Neighborhood Relations contains an informative article showcasing a different invasive plant. The Task Force and Extension Service produced a homeowner seminar that educates people on invasive plants with hands-on experience. Task Force members are frequently asked to present this seminar at homeowner association meetings, master gardener meetings, environmental events, etc. These helpful and informative contributions by the ISTF were good, but something else was needed to educate Tampa Bay citizens on why these plants are bad and how to deal with them.



Due to the overwhelming number of requests for invasive species information, the Task Force produced "Identification and Control of Non-Native Invasive Plants in the Tampa Bay Area," a field guide for homeowners and professionals. This guide covers 20 of the most common invasive plants found in homeowners' yards in the Tampa Bay area. It assists the reader in identifying each plant by describing the species characteristics, habitat, and growth habits. The guide also explains control methods (cut-stump, basal bark, and foliar) and types and proper usage of herbicides, gives tips to eradicate

the pest plants, and offers suggestions for native plant replacements. To date, there have been thousands of field guides distributed throughout the Tampa Bay region and the State of Florida.

Other projects recently completed or in the final stages of completion are a field guide on CD that allows people to see larger images of the plants, and the "Wicked Weeds" video funded by the Tampa Bay Estuary Program. This video allows the viewer to see the plants and points out identification characteristics, and demonstrates control methods and safety measures such as proper personal protective equipment (PPE). Even though the Task Force has completed these projects, there is still much to do.

Future Endeavors

The Florida Aquarium in Tampa recently installed an invasive species exhibit describing both invasive plants and animals. The Task Force will be working with Aquarium staff on upgrading their exhibit as time goes on. The Tampa Electric Company (TECO) has a manatee-viewing center in south Hillsborough County, located near the Big Bend power plant in Apollo Beach, where people can see hundreds of manatees utilizing the warm water from the plant during the winter months. They also have Florida friendly gardens and information about native plants in the area. In the near future, the Task Force will produce an invasive species page on the TECO website.

Tampa Bay citizens have asked the Task Force to produce a brochure that not only has pictures of invasive plants, but also pictures of suggested native replacements. This brochure is currently in production and will include five Category I plants that are found for sale locally and five native or sterile plant substitutes. Most importantly, future goals include making changes to the Land Development Code of Hillsborough County, the development of a County Policy for landscaping, and the creation of the Invasive Species Strike Team.

The Strike Team will consist of dedicated volunteers who will attend a rigorous training class to educate them on plant identification, herbicide use, and safety. Then, under the direction of a licensed herbicide applicator, the volunteers will treat invasive plants in public areas. The implementation of the Strike Team will allow the Task Force to cover more area than ever before, and bring Hillsborough County one step closer to controlling pest plants.

Speak Up

Were it not for Barbara Waddell, a native to Michigan, and a "snowbird" to Ruskin, the Hillsborough Count Invasive Species Task Force might never have been formed. Barbara and the "Pepper Patrol" realized early on the problems that invasive exotic plants cause, and made it her mission to make everyone else realize the same. She made the right people aware of her concerns, raised local government awareness and, as a result, the Task Force was born.

For more information on the Hillsborough County Invasive Species Task Force or to obtain a copy of the "Identification and Control of Non-Native Invasive Plants in the Tampa Bay Area" field guide, contact Ross Dickerson, Invasive Species Task Force Coordinator at 813/671-7754, or by email at dickersonr@hillsboroughcounty.org

We regret that the table in the Summer issue of *Wildland Weeds*, Vol. 8(3):6, was incomplete. Following is the complete table. - Ed.

Errata Table for "Chinese Privet Control with Herbicide Foliar Sprays."

Wildland Weeds, Summer 2005, 5-7

Table 1. Control of Chinese privet 1, 2, and 3 years after treatment.

Herbicide <i>active ingredient (ai)</i>	Rate ¹ per Acre <i>lbs ai²</i>	Percent Control		
		1 Year After Treatment	2 Years After Treatment	3 Years After Treatment
Accord <i>glyphosate</i>	1.5 gal 6.0	99a ³	98a	97a
Arsenal AC <i>imazapyr</i>	24 fl oz 0.75	94a	89a	79ab
Escort <i>metsulfuron</i>	3.3 oz 0.12	81ab	79a	69 b
Garlon 4 <i>triclopyr</i>	1.5 gal 6.0	64 b	44 b	22 c
Oust <i>sulfometuron</i>	6.0 oz 0.28	31 c	32 bc	21 c
Vanquish <i>dicamba</i>	1.5 gal 6.0	27 c	25 bc	4 cd
Tordon K <i>picloram</i>	0.5 gal 1.0	12 cd	9 cd	5 cd
Transline <i>clopyralid</i>	21 fl oz 0.5	0 d	0 d	0 d

¹ Product per acre. ² Pounds active ingredient per acre. ³ Results of Tukey's HSD, where values with different letters are significantly different at the 5% level of probability.



RK Professional XTR Series
&K Spray Equipment
Pump & Equipment



200 Gallon Dual Tank System



50Gal Utility Sprayer w/Booms



Twin 25 Gallon Tanks



6 Gallon 12 Volt Sprayer w/Battery



100 Gallon PCO Unit



35 Gal. 12 Volt Cone Bottom



New Equipment & Repairs
Sales & Service 954-295-3144
500 NE 28th Street • Pompano Beach, FL

Invasive Plant Lists of the Southeast: A Primer

by Alison Fox, University of Florida, IFAS, Agronomy Department and Center for Aquatic and Invasive Plants

The Summer issue of *Wildland Weeds* featured the 2005 FLEPPC List of Invasive Species and a brief introduction to some other invasive plant lists and assessments. The objective of this article is to review various types of lists and assessments, illustrating them with examples applicable to the member states of SE-EPPC. These states are: Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee. The important contrasting characteristics of these examples are presented in Table 1.

Regulatory Lists

Most SE states have at least one list consisting of plants that are legally regulated in the state (Table 1). Like the Federal Noxious Weed List (Fed), most of these state regulations were originally enacted to protect agriculture, navigation/flood control, and human health and only recently have they included invaders of upland, natural habitats. Most such lists have a preventive intent and so include species not yet in the area (Table 1). Typical regulations prohibit the introduction, cultivation, and transportation of the listed species without a special permit. In many cases, (e.g., Fed, AL, FL DEP, MS, and SC) special rules can be implemented to require control of new infestations of particularly damaging species, but few statewide regulations in the SE require removal of listed species from all properties (other than the GA designation of tropical soda apple (*Solanum viarum*) as a public nuisance). This contrasts with states (particularly those in the west where agricultural interests dominate) that have noxious weed laws driven by County Weed Boards. Such regulations require removal of listed species from public and private lands either within the whole state or in designated counties (with negligent landowners having to pay for removal by state/contractors – for an example see the Washington State Noxious Weed List).

Some states have formally adopted all, or relevant parts, of the Federal Noxious Weed list (e.g., AL, FL DACS, GA, NC, and SC), and then added species of statewide importance. Most regulatory lists are developed by expert opinion, typically led by a designated agency or committee, and the process often includes public hearings. The latter condition may make it difficult to add species that have high economic

importance but some upland plants of ornamental value have been prohibited after a two-year phase-out period when no new plants could be propagated, such as carrotwood (*Cupaniopsis anacardioides*) by FL DACS. Some agencies are starting to include general criteria (such as predicted ecological range, potential environmental impacts, etc.) for listing in their regulations (e.g., FL DACS and DEP) while others (MS) are developing or have recently started to implement specific criteria in a scoring format (e.g., Federal Pest Risk Assessment) as a part of the listing procedure. In most cases, species are added or removed from the list only as requested (by formal application to the agency responsible) but in some cases a periodic review is required (e.g., biennially for FL DACS).

Many regulatory lists do not include species that are already widespread, either because of the preventive intent of the list or because their control would impose an unreasonable burden of expense. For example, water hyacinth (*Eichhornia crassipes*) does not appear on the Federal Noxious Weed List even though it has been, and continues to be, an enormous weed problem in the southeastern U.S. Thus, these lists should not be regarded as exhaustive inventories of all noxious/invasive species in their area of jurisdiction.

Non-regulatory lists

Many organizations develop non-regulatory lists of invasive plants (e.g., botanical gardens, conservation groups, and garden clubs) to inform their clientele, managers of natural areas and the public. Sensitive to the potential confusion of such advisory lists with those that have regulatory status, they are often accompanied by statements regarding intended use. For example, the FLEPPC “encourages use of

the Invasive Species List for prioritizing and implementing management efforts in natural areas, for educating lay audiences about environmental issues, and for supporting voluntary invasive-plant removal programs. When a non-native plant species is to be restricted in some way by law, FLEPPC encourages use of the List as a first step in identifying species worth considering for particular types of restriction. The Council does not promote regulating species solely because they appear on the List.”

The lists reviewed here (Table 1) have been developed by state Exotic Pest Plant Councils (FL, GA, KY, SC, TN and SE), an Invasive Plant Council (AL), a university extension service (MS), and a state chapter (NC) of The Nature Conservancy. While some lists focus specifically on the worst species (e.g., GA and MS Top 10 worst weeds), others are much more inclusive with greater precautionary intentions, often distinguishing between categories of most widespread or most harmful species and species that are localized or spreading but of lesser, or unknown, harm (e.g., EPPC lists for FL, KY, SC and TN). Most of these lists only include species already present in the area, and many are specific to invaders of native plant communities. These advisory lists are more likely than the regulatory ones to include very widespread species and species that have economic importance, but are less likely to include colonizing species that typically occur in highly disturbed habitats (e.g., many agricultural weeds).

The composition of most non-regulatory lists is decided by expert opinion, either by specific committees (e.g., FLEPPC) or by polling relevant professionals (e.g., GA and TN EPPC). Descriptions of listed species and qualita-

Table 1

Jurisdiction, agency, and list name ¹	Includes species for prevention ²	Includes weeds of agriculture	Incorporates other lists	Number of taxa	Number of categories	Version reviewed	Notes
Regulatory lists							
Federal Noxious Weed List (Fed)	+	+		96	1	2005	
Alabama Dept Agric. & Industries - Noxious Weed Rules	+	+	All Fed	96+28	3	2000	
Florida Dept Agric. & Consumer Services - Noxious Weed List	+	+	Some Fed	67	1	2004	
Florida Dept Environmental Protection - Prohibited Aquatic Plants	+			27	2	2005	
Georgia Plant Protection Regulations	+	+	All Fed	96	1	2000	In 2000 TSA declared a public nuisance
Kentucky Dept Highways - Noxious Weeds on Rights-of-Ways		+		8	1	2005	KY Div. Pest & Noxious Weed Control directed to control & eradicate Johnson grass
Mississippi Bureau of Plant Industry - Noxious Weed List		+		8	1	2004	Criteria being developed
N. Carolina Dept Agric. & Consumer Services - Noxious Weed List	+	+	All Fed	96+15	3	2003	
S. Carolina Dept Plant Industry - Plant Protection Regulations	+	+	All Fed	96+8	1	2002	
Tennessee Dept Agric. - Pest Plant List	+	+		3	1	1999	
Non-regulatory lists							
Alabama Invasive Plant Council - 10 Worst Invasive Weeds				10	1	2005	
Florida EPPC List of Invasive Species				134	2	2005	
Georgia EPPC - Top 10 & other important exotic pest plants in GA				44	2	1999	
Kentucky EPPC - Invasive Exotic Plant List		+		94	3	2000	
Mississippi State Univ. Extension - MS 10 Worst Invasive Weeds				10	1	2001	
N. Carolina The Nature Conservancy - Invasive Species in NC				14	1	2005	No online NC-EPPC list or brochure
S. Carolina EPPC - Non-Native Invasive Plant Species List	+	+		61	3	2004	
Tennessee EPPC - Invasive Exotic Pest Plants in TN	+	+		136	5	2004	
Invasive Plants of the 13 Southern States	+	+	All state lists	424	1	2004	
Assessment Protocols							
UF/IFAS Assessment of the Status of Non-Native Plants...				201+	5	2005	Directs UF Extension recommendations
NatureServe - An Invasive Species Assessment Protocol				382+	Ranking	2005	National ranking of effects on biodiversity

¹These examples are not intended to be an exhaustive compilation of material applicable to these states (for example, seed laws and local ordinances are not included). Most of this information has been obtained from internet sources (URLs available from the resources listed below) and the author takes responsibility for any errors or omissions. Check lists for yourself to see the most up-to-date version. General sources for Federal and state lists include: National Invasive Species Council <http://invasivespecies.gov/>; USDA – NRCS Plants Database http://plants.usda.gov/cgi_bin/topics.cgi?earl=noxious.cgi; Environmental Law Institute "Halting the Invasion" Report (2002) <http://www2.eli.org/research/invasives/index.cfm>; EPPC lists and other relevant documents found at SE-EPPC website <http://www.se-eppc.org/>; NC TNC list <http://nature.org/wherewework/northamerica/states/northcarolina/initiatives/>; IFAS Assessment <http://plants.ifas.ufl.edu/assessment.html>; NatureServe Protocol <http://www.natureserve.org/getData/plantData.jsp>

²List includes species not naturalized in area.

tive accounts of their effects on plant communities are often provided, and occasionally these are linked to a quantitative distributional database for the area (e.g., FLEPPC / DEP database). Some lists are simple compilations of other lists relevant to the area of jurisdiction (e.g., Southern 13 states). Such compilations may be extensive and widely inclusive, but can be difficult to keep up-to-date given the irregular frequency at which most of the incorporated lists are revised. Of the non-regulatory lists in Table 1, the frequency of review is only specified for FLEPPC (every two years).

Assessment protocols

In some situations involving invasive species, consistent consensus needs to be reached between groups with different perspectives (e.g., land managers and horticulturists). In these cases, tools have been developed with specific criteria and scoring systems. Although very similar in their multiple question formats, the examples in Table 1 contrast widely in

scope. The *IFAS Assessment of the Status of Non-Native Plants in Florida's Natural Areas* is intended to provide consistent planting recommendations and publications from UF-IFAS Extension faculty, while the purpose of the *NatureServe Invasive Species Assessment Protocol* is to create a national prioritized list of non-native plants based on their impacts on biodiversity. Both systems apply only to species currently present in their area of jurisdiction, are intended only for invaders of native communities, and are "works in progress" with additional species continually being assessed. Because it is important that the decision-making processes in these protocols are readily understood by all users, the criteria and the data for each species are available online and are based on cited, published data or multiple observations from qualified individuals. These measures can be labor-intensive, especially if species will be reviewed regularly (e.g., IFAS Assessment). However, it is important to provide results that are sound in the face

of challenges, especially concerning species of economic value.

Conclusion

The diversity of invasive plant lists can be confusing. Because of this, it is particularly important to review the stated purpose of a list in order to understand the scope and potential limitations of the selection process. Currently, many lists and listing procedures are being reviewed so it is vital to look for the latest versions. No one system is ideal for all situations so it is unlikely that plant lists will ever be completely standardized. But when developing or revising a system, it often helps to see how other groups approach the process. It is hoped that this primer will provide some useful resources and a little more clarity on the issue of invasive plants lists of the Southeast.

Dr. Alison Fox may be contacted at amfox@ufl.edu or 352-392-1811 ext. 207.



Complete line of Vegetation Management Herbicides and Adjuvants for Aquatics, Invasives, Forestry, and Roadway/Utility Rights of Way

TECHNOLOGY & SOLUTIONS FOR VEGETATION MANAGEMENT

REGIONAL OFFICE

107 Stewart Parkway
Greensboro, GA 30642
Fax (321) 226-0213

SALES SPECIALISTS

Paul Mason (407) 718-9154
Joe Collins (352) 222-0655
Dan McMillan (706) 318-3238

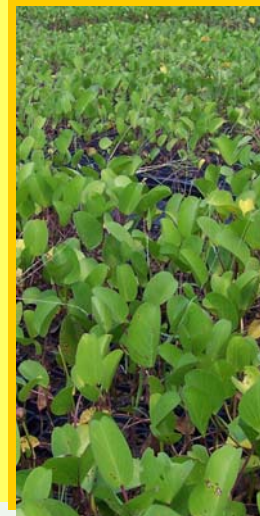
We know our native grasses and plants. *It's what we do best!*



Sand cordgrass



Bakeri



Railroad vine



Sea Oats



Fakahatchee

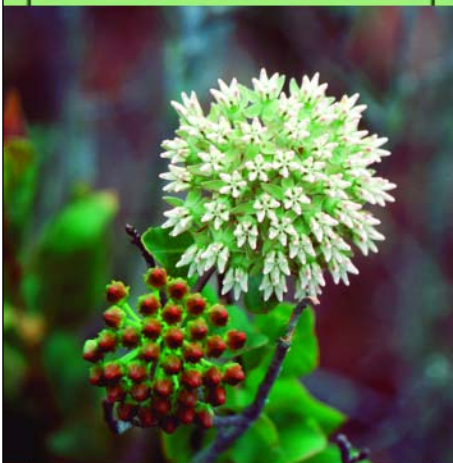
- more plant species!
- contract growing services
- exotic & nuisance plant removal & control
- ecosystem restoration



Corporate Headquarters: North Port, FL
Native Nursery: DeSoto County, FL
www.earthbalance.com

888-536-2855

*Florida Books
from the
Great Outdoors*



Visit our website for books on Florida plants and animals, outdoor recreation, history, kids' books and more!

www.floridabooks.com

10% discount to EPPC members:
Enter coupon code FLEPPC

Great Outdoors Publishing Co., St. Petersburg, Florida



Allstate
RESOURCE MANAGEMENT

We promote greater public awareness of Florida's precious water resources...

2041 S.W. 70th Avenue, Building D-11
Davie, Florida 33317-7326
(954) 382-9766 • FAX (954) 382-9770
www.allstatemanagement.com
waterweed@aol.com

- Weed and Algae Control
- Environmental Services
 - Fish Stocking
 - Wetland Planting
 - Fountains & Aeration

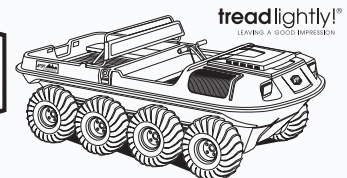
The Ultimate Off-Road Work Vehicle

**Amphibious • All Season • All Terrain
Up to 6 Passengers**

ALL TERRAIN OF FLORIDA, LLC.
6753 Garden Road, Suite 109
Riviera Beach, FL 33404
(561) 845-5525 • Fax (561) 845-5374



**WORLD LEADER IN
AMPHIBIOUS VEHICLES**



EXPLORE THE POSSIBILITIES!

SE-EPPC Annual Symposium Grows into a Conference

by James (Jim) H. Miller, Program Chair, SE-EPPC Conference, Alabama Invasive Plant Council Board Member

“**Grow in Power**” should be our EPPC watch words these days, if we want to get ahead of massive exotic pest plant invasions. Thus, the 7th Annual SE-EPPC Symposium grew to a “Conference,” complete with 140 participants, powerful presentations, concurrent sessions and two SE-EPPC strategic planning sessions (see this issue). The Conference—“*Invasive Plants - Arming to Defend and Win*”—convened May 3 and 5 on the outskirts of Birmingham, Alabama. It was a beautiful location on a bluff over the Cahaba River, with just-right meeting rooms and great lunches under warm skies by the pool. Attendees learned much, formed new networks, and had a good time as well—in our tradition of excellent annual symposia. The entire proceedings, with abstracts and PowerPoint presentations, are available at www.se-eppc.org—check it out in all the details—and limited hardcopies (valiantly produced by Michele Whatley and the Forest Service team at Auburn) are available from jmiller01@fs.fed.us

The Alabama Invasive Plant Council (ALIPC) hosted the conference, ALIPC President Keith Tassin chaired the local arrangements, and I had the “pleasure” of being technical chair. It was a profitable event due to good attendance and the gallant efforts of Curtis Hansen (ALIPC Treasurer), Michelle Isenberg (sponsorships and vendors), Nancy Loewenstein (silent auction and T-shirts), Erwin Chambliss (computers and Power Points), and the tireless enactment team: ALIPC newly-elected President, Ben Moore; Vice-President, Howard Peavey; and “founding father of ALIPC,” David Teem. There were many other ALIPC members that contributed to the effort, to say the least.

The Alabama Commissioner of Natural Resources, M. Barnett Lawley, followed the welcome by SE-EPPC President Brian Bowen with a presentation on “Alabama the Beautiful and Our Invasive Predicament.” Commissioner Lawley has met with the ALIPC Executive Board on two prior occasions to discuss our state’s exotic pest plant problem and he had the opportunity to learn more from our expert plenary speakers. I gave the opening presentation on “Organizing to Succeed against Invasive Plants and Strategies to Take Control and Restore.” An insightful tutorial was provided on political activism for 501(c)3s (not-for-profit organizations) by veteran staffer and lobbyist James Cummins, Wildlife of Mississippi. He told us to gain a champion, develop a message, refine the message, and never quit pushing the message with letters, votes and money.

Vic Rudis, USDA Forest Service Survey Unit, displayed the latest unsettling data on the status of regional invasions of for-

est lands. Half of all forest acres have at least one invasive plant present. Ted Center, USDA ARS, provided an update on released and potential biological control agents in the region, with special focus on aquatic plants. Ted told me in discussion that he thought agents for Chinese privet and Japanese honeysuckle should be possible, given the funds (everyone get their hands out).

Dave Moorhead, University of Georgia, presented the latest on the arsenal of herbicides and application technology to treat alien plants. He provided valuable insights into how we can gain extensions of existing herbicide labels for those effective against specific invaders. For mechanical control options, Bob Rummer, USDA Forest Service Operations Research, displayed the latest technology and explained the capabilities. He also showed the latest in precision herbicide application equipment with GPS tracking and logging. GPS and GIS technology was more fully explored by the last plenary speaker for the day, Dale Loberger, ESRI Inc. He convinced most of us that we need recurring short courses to stay abreast of these powerful technologies.

Focused concurrent sessions were convened on:

- **Developing Lists and Species Strategies** –
Chaired by Randy Westbrook, USGS National Invasive Plant Coordinator, with special presentation by Al Tasker, USDA APHIS National Invasive Species Coordinator.
- **Ecology, Genetics, and Impacts of Invasive Plants** –
Chaired by Charles Bryson, USDA ARS Scientist
- **Invasive Plant Survey and Monitoring** –
Chaired by Jack Ranney, University of Tennessee
- **Control, Containment, and Eradication Research** –
Chaired by Dave Moorhead, UGA
- **Organizing Regionally, Sub-regionally, and Locally** –
Chaired by John Byrd, Mississippi State University
- **Control and Restoration Projects Underway** –
Chaired by John Taylor, USDA Forest Service.

...continued on page 24

Strategic Planning for SE-EPPC

by Brian Bowen, President

During late 2004 and early 2005, the SE-EPPC Board began focusing on strategic planning in an effort to create a road map to the future. The process began with a Board meeting in Nashville on October 29, and continued at the 7th Annual SE-EPPC Symposium on May 2 in Birmingham, AL. Joyce Bender, SE-EPPC vice president, presented ideas gathered from the Nashville meeting and Brian Bowen, SE-EPPC president, facilitated discussion about those ideas.

Joyce presented a brief overview of SE-EPPC, talked about our current status and the strategic planning session in Nashville. The big questions asked in Nashville were basic: what is our role, or “what can we do as a regional organization that states can not or should not have to do?” How can we better respond to and support the state councils? How do we improve/establish networks with other organizations that share similar goals?

The proposed answers to these questions were as follows:

- Continue to provide assistance to state chapters to build strong organizations.
- Encourage chapters to be engaged politically. Coordinate letter-writing campaigns on issues of regional or national importance, and at the state level in support of state legislation or policy decisions.
- Continue to provide tax exemption status for chapters.
- Make annual symposia relevant by addressing regional issues, providing training opportunities, having an open forum for members to participate in organizational affairs.
- Be a clearinghouse for information by publishing or making available proceedings and reports from research oriented meetings.
- Improve the website and use it as a clearinghouse.
- Develop communication processes to aid in early detection and rapid response.
- Promote the St. Louis Declaration and Codes of Ethics.
- Create alliances with other groups to strengthen our message.
- Provide EPPC invasive lists to Natural Resources Conservation Service and similar agencies.
- Support regional risk assessments for ornamental plant species by facilitating development of standard protocols.
- Provide guidance and financial support on research projects.
- Republish the SE-EPPC newsletter in hardcopy and/or electronically.
- Provide input to *Wildland Weeds* magazine through articles and locating sponsorship.

How do we accomplish all of this? Hire an executive director. Many of the strides made while there was a part-time coordinator position from 1999 to 2002 have been on hold and, in general, the Board and committee activities have slowed. An executive director could focus on implementing the programmatic needs and improvements the Board has identified. The position would require raising funds for salary and operations.

Randy Westbrooks presented a PowerPoint program that reiterated the discussion points, added new concepts and organized them as the *SE-EPPC Proposed 2005-2010 Platform*. The first subheading, “2005 Platform,” had three recommendations: create SE-EPPC Regional Committees, hire a full-time Executive Director, and develop a Five-Year Strategic Plan. The remaining subheadings identified committees and their tasks (see sidebar).

...continued on page 24



SE-EPPC Proposed 2005-2010 Platform

Joyce Bender
Kristen Allen
Randy Westbrooks

2005 Platform

SE-EPPC Regional Committees
Fulltime Executive Director
Leadership, Fund Raising, Visionary
Five-Year Strategic Plan

Regional Committees

Program Development
Training and Technical Support
Early Detection and Rapid Response (EDRR)
Communications
Research

Program Development Committee

Annual Symposium, Proceedings
State Chapters
EPPC State Chapters
Special Task Forces
(e.g., Beach Vitex)
State Interagency Invasive
Species Councils

Training and Technical Support Committee

Annual Hands-on Training
(GPS, Equipment, etc.)
Onsite and Distant Technical
Support for Specific Problems

Early Detection and Rapid Response Committee

Regional EDRR Pilot Project with
Mid-South Invasive Species Alliance and
Federal Interagency Committee for the
Management of Noxious and Exotic Weeds
(FICMNEW)
Risk Assessment Center for New
Exotics in Trade (Mississippi State
University and USGS)

Communications Committee

Outreach, Public Relations,
Speakers Bureau
Newsletter, Articles in
Wildland Weeds magazine
Website, E-mail reminders
Snail Mailings
Codes of Conduct (on Website)
Fact Sheets

Research Committee

Identify Research Needs
Support Funding for Research
Publish Research Findings

Strategic Planning ...continued from page 23

Further discussions included possible funding mechanisms for the executive director position and reinstating the SE-EPPC newsletter. A consensus of those attending thought the newsletter was important enough for state chapters to financially support the cost of printing and mailing, as done in the past.

Some final discussion addressed the SE-EPPC webpage and some of the improvements that were expected. An idea to develop an invasive exotic plant distribution map for the Southeast was discussed. Networking opportunities were explored to determine other groups who shared the same interest (e.g., Southern Appalachian Information Node) and who had available technology to partner with us on this task. These talks will continue.

Our strategic planning process created a list of goals and action items, but much of this is presently impeded by our lack of a director. Someone working on these items full-time will definitely make much of this possible. We will continue to keep our planning open to SE-EPPC members and welcome your participation.

SE-EPPC Annual Symposium
...continued from page 22

These sessions contained 24 presentations from an array of graduate students, scientists, and professional experts. In addition, there were six informative poster presentations displayed during the conference.

Two excellent "closing presentations" kept everyone's interest until the end. Chuck Barger, representing the UGA Bugwood Team, gave numerous insights into the powers of websites and images for invasive knowledge networks. David Borland, Alabama TNC, inspired us with the philosophical underpinning for rescuing and restoring our natural heritage. Later in the evening a gourmet banquet and dancing ensued in the SE-EPPC "Conference" tradition.

The field tours on May 5 were perhaps the highlight of the gathering. In Birmingham, Consultant Mark Thomas, Forestry/Wildlife Integrations, showed how one expert, energetic man armed with the right technology can rescue and restore a highly infested park single-handed. Following this, Marty Schulman, Ruffner Mountain Preserve, shared how to effectively involve volunteers in combating invasives in a preserve. In Huntsville, Andy Prewett, The Land Trust of Huntsville and North Alabama, and Amy Werkheiser, OMI, Inc., also shared how to involve volunteers and community groups in fighting invasive bush honeysuckles and winning.

It could not have been a better "Conference" and we look forward to next year in North Carolina.



QUALITY PRODUCTS FOR WATER QUALITY

Algae and Aquatic Weed Control and Maintenance Products



A patented, concentrated liquid formulation for use in contained lakes and ponds. EPA registered for aquatic plant growth control. Contains a blend of blue and yellow dyes to block out specific light rays critical to photosynthesis. No restrictions on swimming, fishing, irrigation or stock watering. Leaves water a pleasing blue color.



A patented, concentrated liquid algacide with a wide range of labeled use sites. Contains chelated copper which stays in solution to continue controlling a broad range of algae well after application. No water use restrictions following treatment.

FOR PLACEMENT ONLY

Applied BioChemists Ad
Starter, please insert scan from last issue



Eliminate aquatic plants such as water milfoil, crumhorn, and spatterdock. Gradual release and systemic action ensures complete kill of the entire plant.



A liquid chelated copper algacide formula in a concentration suitable for dosing stock water tanks, troughs and small ponds. Treated water can be used immediately for stock watering.



The exact formulation of Cutrine Plus Liquid, but labeled specifically for use in fish and shrimp aquaculture facilities. Provides use instructions for ponds, tanks and raceway systems.



A dilute Aquashade formulation in 2 oz. and 8 oz. packaging for ornamental applications in garden ponds, fountains and aquariums. Provides algae control at a drop per gallon or one ounce per 1,000 gal.



A blended formulation of water soluble dyes in convenient water soluble packets. Beautifies murky, cloudy or off-colored water with a pleasing, natural aqua-blue tint.

Available From Quality Distributors Throughout the United States and Worldwide



applied biochemists

ADVANCE WATER / SPECIALTY PRODUCTS



People and products dedicated to algae control and aquatic weed problems

1-800-558-5106 • E-mail: info@appliedbiochemists.com

Internodes

Mark Your Calendar

- 1st Annual Symposium of the Tennessee Exotic Pest Plant Council, “*Invasive Plants in Your Community: Responding at Ground Level*,” **September 8, 2005**, Murfreesboro, TN. A morning of speaker sessions and afternoon workshops covering topics such as assessment and monitoring, regional strategies, management plans: homeowners to wilderness areas, and data gaps. www.tneppc.org/ or contact Pat Parr at 865-576-8123.
- Western North Carolina Alliance conference on fire and invasive plants in the southern Appalachians, **September 17, 2005**, University of North Carolina - Asheville. Contact Bob Gale: bob@wnca.org or 828-258-8737.
- 2nd New England Invasive Plant Summit, **September 16-17, 2005**, Framingham, Massachusetts, convened by the Invasive Plant Atlas of New England (IPANE) and the New England Invasive Plant Group (NIPGro). www.ipane.org
- 32nd Annual Natural Areas Conference, “*Changing Natural Landscapes: Ecological and Human Dimensions*,” **September 21-24, 2005**, Lincoln, NE. <http://www.naturalarea.org/conference.htm>
- North American Weed Management Association (NAWMA) Conference, **September 26-29, 2005**, Manhattan, KS. <http://www.nawma.org/index.html>
- Cal-IPC Symposium 2005, “*Prevention Reinvention: Protocols, Information, and Partnerships to Stop the Spread of Invasive Plants*,” **October 6-8, 2005**, Chico State University. www.cal-ipc.org
- 32nd Annual Conference on Ecosystems Restoration & Creation, **October 27-28, 2005**, Hillsborough Community College, Tampa, Florida. www.hccfl.edu/depts/detp/ecoconf.html
- 29th Annual Florida Aquatic Plant Management Society meeting, **November 7-10, 2005**, St. Petersburg, FL. www.fapms.org
- Public Land Acquisition & Management Partnership Conference 2005, **November 16-18, 2005**, Hutchinson Island, Stuart, FL. www.ces.fau.edu/plam2005
- 10th Annual Exotic Species Workshop for Southwest Florida, Florida Panther and Ten Thousand Islands National Wildlife Refuges, **December 7, 2005**, Rookery Bay Environmental Learning Center, Naples, FL. Dennis Giardina: dennis_giardina@fws.gov
- Weed Science Society of America Annual Meeting, **February 13-17, 2006**, New York, NY. www.wssa.net
- Association of Southeastern Biologists, **March 29 – April 1, 2006**, Gatlinburg, TN. www.asb.appstate.edu/
- Fifth National IPM (Integrated Pest Management) Symposium, “*Delivering on a Promise*,” St. Louis, MO, **April 4-6, 2006**. Symposium sessions will address state-of-the-art strategies and technologies to successfully solve pest problems in agricultural, recreational, natural, and community settings. www.ipmcenters.org/ipmsymposium/
- ESRI GIS and Mapping Software, Southeast Regional User Group Meeting, **April 26-28, 2006**, Jacksonville, FL. www.esri.com/events/serug/
- 14th International Conference on Aquatic Invasive Species, **May 14-19, 2006**, Key Biscayne (Miami), FL. www.icais.org/
- 26th Annual Florida Native Plant Society Conference, **May 18-21, 2006**, Daytona Beach, FL. www.fnps.org
- 15th Australian Weeds Conference, “*Managing Weeds in a Changing Climate*,” **September 24-28, 2006**, Adelaide, South Australia. A four-day scientific program in association with a trade exhibition, partner programs. Pre- and post-conference tours. <http://www.plevin.com.au/15AWC2006/>
- **Weed Management Training Sessions in Florida:**
 - Aquatic Plant Management - October 21, 2005** / Vero Beach
Lead Instructor: Janet Bargar / Registration: (772) 770-5030
 - Wildland Weeds Management - Oct 13, 2005** / Ft. Pierce
Lead Instructor: Ken Gioeli / Registration: (772) 462-1660
 - Aquatic Plant Management - November 10, 2005** / Ft. Pierce
Lead Instructor: Janet Bargar / Registration: (772) 462-1660
 - Invasive Plant Management - Nov 30, 2005** / Vero Beach
Lead Instructor: Ken Gioeli / Registration: (772) 770-5030For information on registration fees and CEU's, call the registration numbers listed above or e-mail Ken Gioeli, UF/IFAS Extension Agent, at: ktg@ifas.ufl.edu

Publications:

- *Out of Eden—An Odyssey of Ecological Invasion*, by Alan Burdick (2005). Farrar, Straus and Giroux, New York, 212/741-6900, www.fsgbooks.com/index.htm From the publisher's website: “The author tours the front lines of ecological invasion—in Hawaii, Tasmania, Guam, San Francisco; in lush rainforests, through underground lava tubes, on the deck of an Alaska-bound oil tanker—in the company of world-class scientists. Wry and reflective, animated and richly reported, *Out of Eden* is a search both for scientific answers and for ecological authenticity.” The tone of this book enthralls some and annoys others. You will have to decide for yourself. No index or table of contents.
- *Federal Noxious Weed Disseminules of the U.S.—An interactive identification tool for seeds and fruits of plants on the United States Federal Noxious Weed List*, by J. Scher (2005). CD. Published by the USDA-APHIS-PPQ Center for Plant Health Science and Technology and the California Department of Food and Agriculture Plant Pest Diagnostics Center. An “interactive identification tool and information guide to disseminules (plant propagative units, which are commonly seeds or fruits) of the 105 invasive or potentially invasive plant taxa on the U.S. Federal Noxious Weed List.” Contains over 700 images and drawings, fact sheets, botanical descriptions, ID tips, and geographic distribution. To order a free copy of the CD, or to use the online version, go to: www.lucidcentral.com or contact the author at Julia.L.Scher@aphis.usda.gov
- The proceedings of the 7th Annual SE-EPPC Symposium, “*Invasive Plants - Arming to Defend and Win*,” with abstracts and PowerPoint presentations, are available at www.se-eppc.org. Limited hardcopies are available from jmiller01@fs.fed.us
- The University of Florida IFAS *Assessment of the Status of Non-Native Plants in Florida's Natural Areas* has a new URL: <http://plants.ifas.ufl.edu/assessment.html> Newly assessed species were added in June 2005. The assessment team seeks help with information about species for which they have incomplete data (explanation on the website).



- *Freshwater Plants in the Southeastern United States*, UF/IFAS Publ. No. SP-348. Recognition guide for 133 plants.
- *Invasive and Other Non-Native Plants Found in Public Waters and Conservation Lands of Florida and the Southeastern United States*, UF/IFAS Publ. No. SP-349. Recognition guide for 90 non-native plants targeted for control by the Florida Department of Environmental Protection.

Both publications are similar in design to a folding road map, laminated, with full color photographs and key identifying characteristics. Folded size is 4" x 9". By V. Ramey, University of Florida, IFAS, Center for Aquatic and Invasive Plants (2005). \$11.95 each. UF/IFAS Publications: 800-226-1764.

- Check out the University of Florida's IFAS web site (edis.ifas.ufl.edu) for the following Fact Sheets, which can be downloaded as PDF files or obtained from County Extension offices:
 - Brazilian Pepper-tree control*
 - Help Protect Florida's Natural Areas from Non-Native Invasive Plants*
 - Natural Area Weeds: Air Potato (*Dioscorea bulbifera*)*
 - Natural Area Weeds: Carrotwood (*Cupaniopsis anacardioides*)*
 - Natural Area Weeds: Chinese Tallow (*Sapium sebiferum*)*
 - Natural Area Weeds: Distinguishing Native and Non-Native "Bostern Ferns" and Sword Ferns" (*Nephrolepis* sp.)*
 - Natural Area Weeds: Old World Climbing Fern (*Lygodium microphyllum*)*
 - Natural Area Weeds: Skunkvine (*Paederia foetida*)*

Journal Articles of Interest:

- *Myocarditis from the Chinese Sumac Tree*, *Annals of Internal Medicine* 143(2):159-160 (2005) by J.D. Bisognano, et al. Contact with sap from *Ailanthus altissima* may cause transient myocarditis (the painful inflammation of a muscle layer in the heart wall).
- *What makes a weed a weed: life history traits of native and exotic plants in the USA*, *Oecologia* 141:24-39 (2004) by S. Sutherland. Compares ten life history traits from two databases for almost 20,000 plant species.
- *Patterns of plant invasions at sites with rare plant species throughout New England*, *Rhodora* 106(926):97-117 (2004) by E.J. Farnsworth. "Thus, invasive species are both a direct threat and a symptom of larger landscape variables that influence the persistence of rare species."
- *Invasive ornamental plants: problems, challenges, and molecular tools to neutralize their invasiveness*, *Critical Reviews in Plant Sciences* 23(5):381-389 (2004) by Y. Li, et al. "Recent advances in plant biotechnology may enable us to create sterile cultivars of these non-native ornamental crops of commercial value."
- *The United States naturalized flora: largely the product of deliberate introductions*, *Annals of the Missouri Botanical Garden* 89:176-189 (2002) by R.N. Mack, et al. "The likelihood that the majority of species now naturalized in the United States has a history of deliberate introduction and post-immigration cultivation provides a plausible explanation for their persistence in a new range."
- *BiolFlor – a new plant-trait database as a tool for plant invasion ecology*, *Diversity and Distributions* 10(5-6):363-365 (2004) by I. Kuhn, et al. A new database that allows analyses of invasive species traits using data from the geographic origin of the species. The database covers the flora of Germany, which covers the majority of Central European plant species, from which many invasive plants originate. BiolFlor contains more than 450,000 records and covers 3,659 species. <http://www.ufz.de/biolflor/index.jsp>

- *Relationships between alien plants and an alien bird species on Reunion Island*, *Journal of Tropical Ecology* 20(6):635-642 (2004) by I. Mandon-Dalger, et al. "So, modifications of habitat and impacts on native ecosystem by synergism between alien species could be greater than the sum of the impacts of the individual species..."

Nodes of Interest

- The United Nations Environment Programme (www.unep.org) together with the Sri Lankan Ministry of Environment and Natural Resources released results of a post-tsunami environmental assessment that found, among other things, that the giant wave caused the spread of alien invasive species such as prickly-pears (*Opuntia*) and salt-tolerant mesquite (*Prosopis*) farther inland, including protected areas such as Yala National Park. "Detailed physical and ecological descriptions were made of over 800 sites at one kilometer intervals along almost the whole affected coast, supporting the preparation of a digital *Atlas of Tsunami Damage in Sri Lanka*."
- One of the world's oldest Christian churches, the **Ethiopian Orthodox Tewahido Church** (EOTC) has a long history of planting and protecting trees, according to Alemayehu Wassie's Master's thesis (2002). During the last 300 years, most of the dry Afro-montane forests in the northern highlands of Ethiopia have been converted to agriculture and grazing lands. When travelers see a patch of indigenous, old growth trees, however, they know there will be an EOTC "debr" or "geddam" within. Local community members consider the churches to be very holy places and the churches protect and conserve their forests through religious sanctions and/or civil law. A recent survey in northern Ethiopia revealed that a sampling of the forests contained only five exotic species in only four of the forests sampled. These results reveal the role that the EOTC could play in "providing a blueprint for restoring Ethiopia's lost forest ecosystems." *Note: this study was presented at the Society for Ecological Restoration 2004 International Conference in Victoria, BC.*
- *Casa Casuarina* on Ocean Drive in Miami Beach is "by invitation only for a privileged few." Completed in 1930 by philanthropist, architect and Standard Oil heir Alden Freeman as a palatial home, it was purchased, restored and redesigned in 1992 by fashion designer Gianni Versace who lived there until his death in 1997. It is now an invitation only private club. Why the exotic pest plant name? One can only guess, since the derivation of the name *Casuarina* for the nuisance tree from Australia is purportedly based on the resemblance of its leaves to the cassowary bird's feathers. Perhaps it just had a nice, exotic ring to it. www.casacasuarina.com
- Brazilian pepper (*Schinus terebinthifolius*), lead tree (*Leucaena leucocephala*) and carrotwood (*Cupaniopsis anacardioides*) were cleared from approximately five acres of upland habitat in the **Alafia Bank Bird Sanctuary** in Hillsborough Bay this summer in preparation for the restoration of native shrubs and trees. Repeat herbicide treatments and removal of resprouts will be needed to maintain the site. The work was performed with a U.S. Fish and Wildlife Service Coastal Programs grant. The sanctuary is comprised of two islands leased to the National Audubon Society for management as a bird colony. 9,000 pairs of birds of 17 species nested on the islands in spring 2004, including eight listed species and the largest Roseate Spoonbill colony in Florida. From *Florida Naturalist*, Spring 2005.

- Looking for natives?
LOOK FOR THE TAG!
The Association of Florida
Native Nurseries



(AFNN) has produced pot & hanging plant tags for member nurseries that proudly proclaim "Real Florida Native." The tags will be promoted to the general public through the upcoming *Guide for Real Florida Gardeners* and website, as well as Florida Native Plant Society chapters and publications.
<http://www.afnn.org/>

THANK YOU

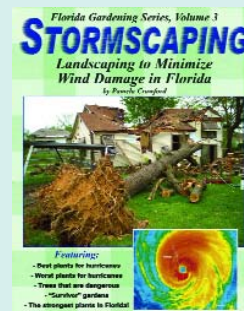
to the following
sponsors for supporting
this issue of
WILDLAND WEEDS:

BASF	p. 14
Helena Chemical Company	p. 10
SePRO Corporation	p. 2
Syngenta Professional Products	p. 28
Biosorb	p. 5
Dow AgroSciences.....	p. 13
Earth Balance	p. 21
R&K Pump Containers	p. 17
UAP Timberland	p. 20
Applied Biochemists	p. 24
Allstate Resource Management	p. 21
All Terrain of Florida	p. 21
Applied Aquatic Management	p. 11
Aquatic Vegetation Control	p. 11
Great Outdoors Publishing Company	p. 21
Pandion Systems	p. 11

Stormscaping - Landscaping to Minimize Wind Damage in Florida

by Pamela Crawford

Featuring the best and worst plants for hurricanes, trees that are dangerous, "survivor" gardens, and the strongest plants in Florida.



According to the author, a landscape architect with a nursery and garden design business, hurricanes are the most costly natural disaster in the United States. *Stormscaping* was written in response to the damage to and from trees during Florida's devastating 2004 hurricane season.

Chapters are Understand Hurricane Basics, Know Your Plant's Wind Tolerance, Other Reasons Why Trees Fall, Designing to Minimize Wind Damage, and Proper Storm Aftercare. The book is richly illustrated with large color photographs of twisted, cracked, broken, uprooted and fallen trees, as well as many other color photographs illustrating additional points made by the author. The book covers related topics such as wind-tolerant trees, shrubs and groundcovers, palms used as wind barriers, other reasons why trees fall, wind tolerance of Florida plants, care of damaged trees, and historical information on hurricanes from the last century throughout 2004.

"If you have a *Ficus benjamina* within falling distance of a structure, remove it before it removes you during the next hurricane."

The author offers a four-page spread on appropriate trees for high winds and thirty pages on the wind-tolerance of Florida Plants with information gathered from throughout the state. She also covers the three worst trees: Australian pine (*Casuarina equisetifolia*), *Ficus benjamina*, and laurel oak (*Quercus laurifolia*).

The author states that in 2004, ficus trees in south Florida caused more damage than any other species. Ironically, Miami had the same problem in 1991 after Hurricane Andrew, but tens of thousands of ficus trees were planted in Broward and Palm Beach Counties *after* Hurricane Andrew because they are fast growing and inexpensive. She further states that Queen palms (*Arecastrum romanzoffianum*), one of the most common palms used in south and central Florida, have very little tolerance for wind. "Some trees, like ironwoods, have very strong wood and a root system that goes deep into the ground to keep the trees stable. Their canopies are loose enough to let the wind blow through them rather than blowing them over. Other trees have shallow root systems, weak wood, and dense canopies. These three factors cause trees to fall easier."

One section of the book asks, "Do native trees hold up better than exotics?" Dr. Mary Duryea, with the University of Florida IFAS Agricultural Experiment Station, found that native trees fared better than exotics in south Florida after Hurricane Andrew: "...34% of the exotic trees were still standing after the hurricane (Andrew) while 66% of native trees were standing." However, in central and north Florida, "Water oaks and laurel oaks, both natives, were two of the worst trees in these areas during the four storms of 2004." Dr. Duryea has conducted post-hurricane surveys in Florida since the mid-1980s. "We had more reports of laurel oaks down than any other tree in central and north Florida...Laurel oaks are weaker and shorter lived than live oaks, and the four storms of 2004 proved that the older ones were particularly dangerous."

Stormscaping describes the six most expensive landscaping mistakes and underscores the point with the high expense connected to fallen trees: 2 million cubic yards of vegetative debris was collected in Santa Rosa County alone and \$19 million spent as of December 20, 2004. The total cost to the county is expected to reach \$30 million. "According to Dr. Robert Loflin, the Natural Resources Director of Sanibel, it cost \$6 million to haul and burn the trash from [Hurricane] Charley." He further stated that sixty percent of this cost (\$3.6 million) was for Australian pine alone. Dr. Mary Duryea reiterated this point by stating that 96% of Australian pines fell in Hurricane Andrew in 1991.

This book is absolutely stuffed with information and amazing photographs. *Stormscaping - Landscaping to Minimize Wind Damage in Florida* is Volume 3 in the Florida Gardening Series.

\$29.95 (ISBN 0-9712220-2-9) Available through most booksellers and many garden centers in Florida. To find the nearest source, contact the publisher at www.easycolor.com or colordgn@aol.com

syngenta

Lose the weeds. Not the wildlife.

With Reward® aquatic herbicide, it's easy to restore habitats and preserve species that live near waterways. Reward herbicide controls a broad spectrum of weeds — including submersed, marginal, and floating — starting within hours of application. But it isn't harmful to fish or wildlife. No wait. No worry. For more information, call your Syngenta rep at 1-800-395-8873.



www.syngentaprofessionalproducts.com

Important: Always read and follow label instructions before buying or using this product. ©2004 Syngenta. Syngenta Professional Products, Greensboro, NC 27419. Reward® and the Syngenta logo are trademarks of a Syngenta Group Company.