Wildland Weeds

SUMMER 2005

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Wildland Weeds

SUMMER 2005, VOLUME 8, NUMBER 3

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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.

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On the Cover: Melapaleuza turned into Mudapaleuza when 3 inches of rain fell two days prior to the event in the Everglades buffer strip near Holiday Park. Five swamp buggies got bogged down in the mud. See article on page 9. (*Photo by Ken Langeland*)

editor's note

Exotic pest plants are a multi-faceted problem and managing them requires a multi-faceted approach. This issue of *Wildland Weeds* features many of those approaches so necessary to the full frontal attack required to subdue exotic pest plants in natural areas of the southeastern U.S. Read the amusing yet serious warning letter from Dan Ward on cat's-claw vine; the applied research article by Jim Miller focusing on Chinese privet; volunteer efforts against air potatoes; the new 2005 FLEPPC Plant List together with a brief introduction to other plant lists and assessment tools being developed and used today; an article on innovative incentives being offered to property owners in Palm Beach County for the removal of exotic pest plants; a note on the dedication of a brand new biological control quarantine facility which will speed up the process of finding effective biocontrol agents; a report on the successful TAME Melaleuca field days (or Melapaleuza); and finally, an article on what one university is doing to prepare graduate students to face the challenges of fighting exotic pest plants on multiple fronts, and in cooperation with other disciplines, in the future.

Please note that the 2005 FLEPPC Plant List is in the centerfold of the magazine so that it can be detached and saved for future reference. Additional copies are available in this format, a pamphlet form is available, and lower resolution copies in various formats can be downloaded and printed from the FLEPPC website. Also hot off the press are pamphlets on the devastating Australian pine trees (*Casuarina equisetifolia*). Visit the FLEPPC website or contact me to obtain copies of any of this literature.

FLEPPC celebrated its 20th anniversary at the annual symposium in Key West last month. Almost 200 people attended the 3-day event which consisted of one day of field trips throughout the lower Keys and two full days of presentations. We also gained our 300th member! We extended our appreciation and bid farewell to second year outgoing board members Rob Egan, Amy Ferriter, Matt King and Chris Lockhart. We welcome the following new members to the FLEPPC Board of Directors:

FLEPPC Board of Directors – New Members

Scott Ditmarsen has a Master's degree in Forestry from the University of Minnesota and an M.B.A. in Finance from the University of Wisconsin-Madison. He is a Senior Sales Specialist in Industrial Vegetation Management for Dow AgroSciences. Scott has been an active member of several Weed Science Societies, the Florida Exotic Pest Plant Council, and the Florida Vegetation Management Association.

Jon Lane is a biologist with the US Army Corps of Engineers, Invasive Species Management section in Jacksonville. Jon also has worked for the US Fish and Wildlife Service and The Peace Corps. He received his Master's degree in Agriculture and Natural Resource Economics from Colorado State University.

Tony Pernas, National Park Service, Florida and Caribbean Office, Palmetto Bay, Florida. Tony is the coordinator for the Florida/Caribbean Exotic Plant Management Team. He received his Bachelor's Degree in Environmental Studies from Florida International University.

We also welcome **Alison Fox** as our Chair Elect. Alison will take over the helm from Jim Burney in 2006. Alison describes herself as an alien invader of Florida, having arrived from Great Britain in 1987 after earning a Ph.D. in Botany from the University of Glasgow. She started at the University of Florida as a post-doctoral associate working on aquatic plant biology and control and has evolved into an Associate Professor conducting research on invasive plants in aquatic, wetland, and terrestrial habitats in Florida and the US Virgin Islands. Alison is a Past-President of the national Aquatic Plant Management Society and has served on the Board of Directors of the Florida Aquatic Plant Management Society, the Florida Exotic Pest Plant Council, and the Weed Science Society of America. She is currently enjoying a six-month sabbatical at the University of Washington in Seattle but looks forward to returning to Florida refreshed and invigorated in August 2005.

Paul Pratt earned a Ph.D. in Entomology from Oregon State University. He is a scientist at the USDA/ARS Invasive Plant Research Lab where he conducts biological control research and serves as Project Director of TAME Melaleuca.

Chinese Privet Control with Herbicide Foliar Sprays

by James H. Miller, USDA Forest Service, Southern Research Station, Auburn, AL 36849

Chinese privet (*Ligustrum sinense* Lour.) is probably the most problematic alien shrub in the 13-states of the southern region, widely invading forests, parks and preserves, pastures, and right-of-ways (Haragan 1996, Miller 1997, Matlack 2002). After a century of planting as an ornamental shrub following introduction in 1852 (Dirr 1998), range expansion has been rapid and far-reaching since about 1960 (NRCS website). This rapid invasion has occurred as birds feed upon abundant fruits produced in early spring and disperse seed during northern migrations. It is widely observed that the habitats most under siege are disturbed areas and bottomland forests (Dirr 1998), while upland forests and pasture margins are steadily being invaded as well. Site dominance occurs through Chinese privet's production of abundant root suckers and clump sprouts, as well as carpets of seedlings in infested areas.

Chinese privet is but one of at least eight nonnative privet species within the region that have escaped into natural habitats. Other widely occurring privet invaders are European privet (*L. vulgare* L.), glossy privet (*L. lucidum* Ait. f.), and Japanese privet (*L. japonicum* Thunb.). Those locally problematic are Amur privet (*L. amuense* Carr.), border privet (*L. obtusifolium* Sieb. & Zucc.), California (originally from Japan) privet (*L. ovalifolium* Hassk.), and waxyleaf privet (*L. quihoui* Carr.), including several varieties of each. Japanese, glossy, and border privet are evergreen while the others are semi-evergreen and retain foliage depending on the severity of the winter and locale. All have opposite leaves, with white flower clusters in spring that yield black to blue-black drupes in fall and winter to spring. The fleshy one-seeded fruit characterize these members of the olive family (Oleaceae).

Herbicides are one tool that can be used to control privets as part of an integrated vegetation management approach. The objective of this investigation was to compare foliar sprays of most herbicides registered for forest use in the southern region for their effectiveness on Chinese privet.

Methods

The study site was located along a riparian area of a perennial stream in east-central Alabama. A uniformly dense stand of Chinese privet had been brush mowed on a 3-year cycle for 9 years before study initiation. The infestation had one year of regrowth, being 4 to 10 ft tall. Sixty-four, 10 x 20-ft plots were established in four blocks. Seven herbicide treatments and a nontreated control were randomly assigned to plots in each block and tested at two intervals, August and September. The first treatment was planned for July, but due to the absence of rainfall for 3 months during the summer, it was applied in August after rainfall commenced with 2 inches in 2 weeks preceding treatment.

Near maximum labeled rates were tested for each herbicide using formulations with a single active ingredient (Table 1). This approach aimed to identify the most effective active ingredients for treating Chinese privet in late-summer and early fall. Applications were by a CO_2-powered backpack sprayer with a

Table 1. Herbicide tests on Chinese privet.

Herbicide *active ingredient (ai)*	Rate[1] per Acre *lbs ai*[2]	1 Year After Treatment	2 Years After Treatment	3 Years After Treatment
Accord *glyphosate*	1.5 gal *6.0*	99a[3]	98a	97a
Arsenal AC *imazapyr*	24 fl oz *0.75*	94a	89a	79ab
Escort *metsulfuron*	3.3 oz *0.12*	81ab	79a	69ab
Garlon 4 *triclopyr*	1.5 gal *6.0*	64ab	44ab	22abc
Oust *sulfometuron*	6.0 oz *0.28*	31abc	32abc	21abc
Vanquish *dicamba*	1.5 gal *6.0*	27abc	25abc	04abcd
Tordon K *picloram*	0.5 gal *1.0*	12abcd	09abcd	05abcd
Transline *clopyralid*	21 fl oz *0.5*	00abcd	00abcd	00abcd

[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.

Spraying Systems XR 8003 flat-fan nozzle swiveled downward on a 4-foot extended wand. A total spray mixture of 40 gallons per acre (gpa) in water was used except with Accord, which was tested with 30 gpa per label recommendations. A surfactant (Entry II) was added at 0.5 percent to all mixtures except Accord, which contains surfactant. The applicator stood in the middle of half plots and rotated about to uniformly cover all plants, while a guide outside the plot gave directions to assure uniformity (shown above).

Plots were rated 1, 2, and 3 years after treatment using visual estimates of percent volume reduction of standing shrubs. Untreated control plots in each block were used as height references during ratings, while before treatment volumes (average height X cover) were used as co-variants in the analysis. There were no significant differences between the August and September applications and thus these data were combined. According to standard procedures, percent reductions (control) were arsine square root transformed and data were analyzed using Tukey's HSD Test.

Findings

Privet control exceeded 90 percent with Accord (glyphosate) and Arsenal AC (imazapyr) the first year and did not statistically differ from Escort, which averaged 81 percent control (Table 1). Accord gave near complete control for the 3-year post-treatment period to exceed 97 percent with minimal resprouting and seedlings. Garlon 4, Oust, Vanquish, Tordon K, and Transline provided less than 65 percent control. Transline was completely ineffective on privet at these timings and rates.

The most effective herbicide, Accord, is a foliar active herbicide that is deactivated when it reaches the soil and thus presents safety to nearby unsprayed plants. This offers a treatment option to prevent harm to native cohort plants when care in application restricts spray to privet foliage only. The wand extension used in this research permitted effective treatment for privet that was 10 ft tall. The wand could be fitted with a longer extension and a projecting spray tip to treat taller privet.

The active ingredient in Accord is glyphosate, which is available in many formulations including aquatic labeled products permitted for spraying around and over water. The aquatic formulations could be used to eradicate the extensive privet infestations that occur along streamside areas and

partially flooded wetlands. Further tests of aquatic formulations of glyphosate are required since they contain no surfactants, which may lessen control.

Conclusions

Resprouted Chinese privet can be effectively controlled or even eradicated with Accord treatments or other herbicides with similar glyphosate formulations. This offers a treatment option that can be safe to applicators as well as flora and fauna when used according to label directions. Subsequent tests have shown that lower rates are equally effective, as low as 1 quart per acre. Treatments in December are most effective while those in April are only slightly less effective (Harrington and Miller 2005). Arsenal AC and Escort were less effective in this trial, but provided enough control for use in particular locations. All treatments will need to be repeated to achieve eradication, and native plant revegetation fostered to obtain restoration.

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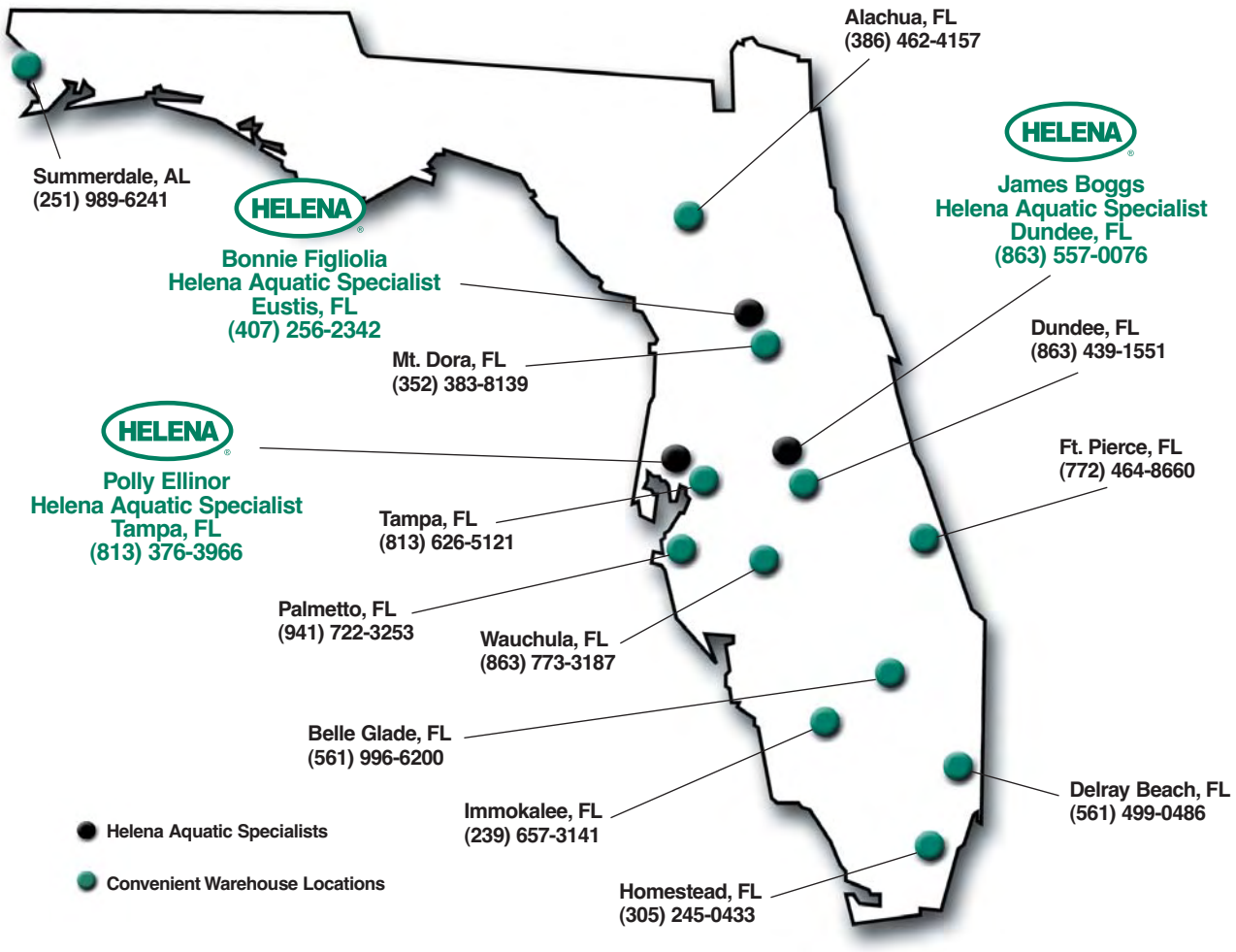

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MELAPALEUZA 2005 ROCKED!

by Cressida Silvers

The Areawide Management and Evaluation of Melaleuca, or TAME Melaleuca project, just wrapped up its Melapaleuza 2005 tour of educational workshops at demonstration sites throughout south Florida, and even though there was no music, it rocked. The workshops covered the latest information on melaleuca management tactics with a strong focus on biological control and its integration with chemical and mechanical approaches.

Two types of workshops were offered, one for professional land managers and one for homeowners. Professional workshops lasted all day and offered continuing education credits for certified pesticide applicators, arborists and horticulturalists. The morning sessions consisted of classroom presentations followed in the afternoon by guided walking tours of treatment plots at one of the demonstration sites. During the field tours participants could see for themselves the results of different control tactics discussed, including mechanical removal with heavy machinery, aerial herbicide application, hack and squirt, herbicide treatment of cut stumps, and biological control alone or in combination with chemical or mechanical treatments. While the classroom sessions provided the familiar formal educational experience, the field portions of the day provided a more relaxed venue for participants and presenters to interact, ask questions, and share experiences. Lively and mutually enriching discussions often resulted.

CHUCK NOHEIL

Scott Ditmarsen guides participants through aerial treatment plots at Broward County site.

Workshops for the public were truncated versions of the professional format, lasting three to four hours. Classroom presentations were tailored to the interests and knowledge level of homeowners, with more explanation of what invasive plants are, why melaleuca is a problem and what private citizens can do to help. Field tours were limited to biological control treatments, and herbicide and mechanical treatments appropriate for homeowners. Participants also were encouraged to collect insects from the field site if they wished, although many were so enthusiastic about finding specimens they didn't need any encouragement.

Melapaleuza 2005 ran from February to April, with at least one workshop at each of TAME's five demonstration sites, for a total of four professional and three public workshops. Attending the professional events were arborists, landscapers and horticulturalists, and land and resource managers responsible for vegetation control on over 14 million acres of the state's natural areas. Seventy private citizens from three counties attended the events for the public. Many of these were environmental educators and active community members who we hope will pass the information they learned on to others. Of all Melapaleuza participants surveyed, 83% said they were already using or were interested in using biological control for melaleuca and 32% signed up to have biological control releases made on their property or property they manage. Fifty-three participants requested free copies of TAME's 18-minute educational video.

A big part of what made the workshops a success was the cooperation from a number of agencies and organizations. The TAME project itself is a collaboration between USDA Agricultural Research Service (ARS), the South Florida Water Management District (SFWMD) and the University of Florida Institute of Food and Agriculture Sciences (UF IFAS). For Melapaleuza, we had a lot of additional help planning and presenting some of the workshops from county cooperative extension offices and the Audubon Society. Classroom presenters, field speakers and other assistance came from USDA-ARS, SFWMD, UF IFAS, the Florida Department of Environmental Protection, US Fish and Wildlife, Florida Division of Forestry, Lee County Parks and Recreation, Palm Beach County Department of Environmental Resources Management, and FLEPPC.

There were some challenges to overcome. Unseasonably warm weather during our February 15th professional event in Fort Myers made the long hike through the sparsely shaded treatment plots seem longer. But all the participants rose to the challenge and even seemed energized by it. Our March 11th event in the Everglades buffer strip near Holiday Park was preceded by 3 inches of rain two days earlier, making the mucky soil at the demonstration site almost impassable. We discovered this about a quarter of the way through the tour when the five swamp buggies carrying participants through the 100-acre site got bogged down (see cover photo). It took the Division of Forestry and their tracked "Bombardier" to liberate them. Most participants were not deterred but rather took advantage of the situation by getting a

Left: Tour participants review results of mechanical removal by the Barko chipper, Fort Myers.

Right: Matthew Purcell, visiting scientist from the biological control lab in Brisbane, Australia, and Paul Pratt describe insect feeding damage at Fort Myers site.

SCOTT WIGGERS

SCOTT WIGGERS

closer look at treatments as they walked through the site. We'll do better next year, we promise!

Melapaleuza will be repeated in 2006 so participants can see the effects of demonstration treatments more than one year after implementation and make assessments on longer-term impacts. In addition, by 2006 a third biological control agent for melaleuca, the gall fly *Fergusonina turneri*, is expected to be established and incorporated into demonstration site treatments along with the two agents already established, the melaleuca weevil *Oxyops vitiosa* and the melaleuca psyllid *Boreioglycaspis melaleucae*.

All we'll need to make Melapaleuza complete are some cool bands.

For more information on TAME Melaleuca and Melapaleuza, please visit our website at:

http://tame.ifas.ufl.edu

Cressida Silvers is a Project Coordinator for TAME Melaleuca at the USDA-ARS Invasive Plant Research Laboratory in Fort Lauderdale, 954-475-0542 x144, email: csilvers@saa.ars.usda.gov

–or–
What's in a List?

This issue of *Wildland Weeds* includes the FLEPPC 2005 List of Invasive Species, the associated explanations of its purpose and uses, and notes the members of the FLEPPC Plant List Committee. A number of invasive plant lists and assessments can be found from a variety of sources, each with a somewhat different purpose and geographic coverage. A more detailed article in the next issue of Wildland Weeds will review and compare some of these tools. Brief descriptions of a few of them currently in use follow:

Federal Noxious Weed List

http://www.aphis.usda.gov/ppq/weeds/

Administered by the U.S. Department of Agriculture under the Federal Noxious Weed Act, listed plants are prohibited from importation and interstate transport without a special permit. Listing of noxious plants requires a risk assessment, a period for public comments, and a final rule published in the Federal Register.

Florida Department of Agriculture and Consumer Services Noxious Weed List

http://www.doacs.state.fl.us/pi/enpp/botany/noxweed.htm

This list has regulatory authority in Florida and includes most species on the Federal Noxious Weed List (http://www.aphis.usda.gov/ppq/weeds/). Its main scope is plants that currently, or potentially, threaten agricultural and upland habitats. Listing of a species requires a formal proposal that documents most available information on the species, consultation with many biological experts, and opportunities for public input. Reflecting the preventative intent of these lists, highly noxious species may not be included if they are already considered widespread and beyond reasonable control. Listed plants are prohibited from introduction, cultivation, and transport without a special permit.

Florida Department of Environmental Protection List of Prohibited Aquatic and Wetland Plants

http://www.dep.state.fl.us/lands/invaspec/index.htm

This list includes 27 taxa and carries regulatory authority in Florida. All are exotic plants that currently, or potentially, threaten aquatic and wetland systems. Species are added to this list only after agreement of the Florida Department of Agriculture and Consumer Services and the Florida Fish and Wildlife Conservation Commission. Listed plants are prohibited from possession, cultivation, introduction, collection, and transport without a special permit.

FLEPPC List of Invasive Species

http://www.fleppc.org/Plantlist/list.htm

This advisory list has 133 species of non-native plants already found escaped from cultivation in Florida. It has no regulatory authority but is intended to assist land-managers in setting priorities for control programs, including warning them of species that may not have altered native plant communities yet, but are increasing in abundance or frequency. The list is prepared biennially by a committee of botanical and natural areas experts. The listing process is supported by current ecological observations in the field plus information in several statewide plant databases and herbaria. Background information on most Category I species (species of most concern) has been provided in *Identification & Biology of Non-Native Plants in Florida's Natural Areas,* by K.A. Langeland and K. Craddock Burks, 1998, University of Florida.

In comparing species lists, be particularly aware of the following:

- What is the stated purpose of the list?
- Does the list have regulatory authority or is it an advisory list?
- Does it apply only to species already within the area or does it include potential threats?
- What types of habitats are considered?
- Over what geographical area is a species evaluated?
- How are species added to the list?
- Who is expected to provide input to the listing procedures?
- What criteria are used to arrive at a species' listing or ranking?
- How often is the list reviewed for possible changes?

Local Ordinances

Some Florida counties and municipalities have addressed specific exotic plant species in their ordinances. The particular restrictions may be an exemption from tree-removal permits, a requirement for removal under certain circumstances, or a prohibition from planting.

Assessment Processes

Following are recently developed assessment processes currently in use:

IFAS* Assessment of the Status of Non-Native Plants in Florida's Natural Areas (IFAS Assessment)

http://agronomy.ifas.ufl.edu/IFASassessmt.HTML

The IFAS Assessment does not specifically provide a list of invasive plants but is a systematic process by which any exotic ornamental or forage plant species currently found in Florida can be evaluated using specific criteria for ecological impacts, potential for expansion, difficulty of management, and economic value. The system was developed to provide consistent recommendations to the public from UF/IFAS extension faculty. Recommendations are derived for species in each of three climate zones in the state (north, central, and south).

*IFAS = Institute of Food and Agricultural Sciences at the University of Florida

NatureServe – An Invasive Species Assessment Protocol

http://www.natureserve.org/getData/plantData.jsp

NatureServe is assessing all of the estimated 3,500 non-native plants that have escaped from cultivation in the United States. This new methodology, developed by the non-profit organization NatureServe in cooperation with The Nature Conservancy, uses multiple criteria to provide a systematic evaluation of exotic plants that already occur in native species habitat. The protocol is applied to species as they occur over large areas such as a state, nation, or ecological region. The goal is to create a national prioritized list of non-native plants based on their impact to biodiversity.

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Florida Exotic Pest Plant Council's 2005 List of Invasive Species

Purpose of the List: *To focus attention on —*

- the adverse effects of exotic pest plants on Florida's biodiversity and ecosystems,
- the habitat losses from exotic pest plant infestations,
- the impacts on endangered species via habitat loss and alteration,
- the need to prevent habitat losses by utilizing pest-plant management,
- the socio-economic impacts of these plants (e.g., increased wildfires in some areas),
- changes in the seriousness of different pest plants over time,
- the need to provide information to help managers set priorities for control programs.

CATEGORY I

Invasive exotics that are altering native plant communities by displacing native species, changing community structures or ecological functions, or hybridizing with natives. *This definition does not rely on the economic severity or geographic range of the problem, but on the documented ecological damage caused.*

Scientific Name	Common Name	EPPC Cat.	Gov't. List	Reg. Dist.
Abrus precatorius	rosary pea	I		C, S
Acacia auriculiformis	earleaf acacia	I		S
Albizia julibrissin	mimosa, silk tree	I		N, C
Albizia lebbeck	woman's tongue	I		C, S
Ardisia crenata (= *A. crenulata*)	coral ardisia	I		N, C
Ardisia elliptica (= *A. humilis*)	shoebutton ardisia	I		S
Asparagus aethiopicus (= *A. sprengeri; A. densiflorus* misapplied)	asparagus-fern	I		C, S
Bauhinia variegata	orchid tree	I		C, S
Bischofia javanica	bischofia	I		C, S
Calophyllum antillanum (=*C. calaba; C. inophyllum* misapplied)	santa maria ("mast wood" "Alexandrian laurel" used in cultivation)	I		S
Casuarina equisetifolia	Australian pine	I	P	N, C, S
Casuarina glauca	suckering Australian pine	I	P	C, S
Cinnamomum camphora	camphor tree	I		N, C, S
Colocasia esculenta	wild taro	I		N, C, S
Colubrina asiatica	lather leaf	I		S
Cupaniopsis anacardioides	carrotwood	I		N C, S
Dioscorea alata	winged yam	I	N	N, C, S
Dioscorea bulbifera	air-potato	I	N	N, C, S
Eichhornia crassipes	water-hyacinth	I	P	N, C, S
Eugenia uniflora	Surinam cherry	I		C, S
Ficus microcarpa (*F. nitida* and *F. retusa* var. *nitida* misapplied)	laurel fig	I		C, S
Hydrilla verticillata	hydrilla	I	P, U	N, C, S
Hygrophila polysperma	green hygro	I	P, U	N, C, S
Hymenachne amplexicaulis	West Indian marsh grass	I		C, S
Imperata cylindrica (*I. brasiliensis* misapplied)	cogon grass	I	N, U	N, C, S
Ipomoea aquatica	waterspinach	I	P, U	C
Jasminum dichotomum	Gold Coast jasmine	I		C, S
Jasminum fluminense	Brazilian jasmine	I		C, S
Lantana camara	lantana, shrub verbena	I		N, C, S
Ligustrum lucidum	glossy privet	I		N, C
Ligustrum sinense	Chinese privet, hedge privet	I		N, C, S
Lonicera japonica	Japanese honeysuckle	I		N, C, S
Lygodium japonicum	Japanese climbing fern	I	N	N, C, S
Lygodium microphyllum	Old World climbing fern	I		N C, S

FLEPPC List Definitions:

Exotic – a species introduced to Florida, purposefully or accidentally, from a natural range outside of Florida.

Native – a species whose natural range included Florida at the time of European contact (1500 AD).

Naturalized exotic – an exotic that sustains itself outside cultivation (it is still exotic; it has not "become" native).

Invasive exotic – an exotic that not only has naturalized but is expanding on its own in Florida plant communities.

Abbreviations:

"Gov't List": P = Prohibited by Florida Department of Environmental Protection; N = Noxious weed listed by Florida Department of Agriculture & Consumer Services; U = Noxious weed listed by U.S. Department of Agriculture.

"Regional Distribution": N = north, C = central, S = south, referring to each species' current distribution in general regions of Florida (not its potential range in the state). Please refer to the map below.

FREQUENTLY ASKED QUESTIONS

Q: Are the Category I and II species all exotic, or are some exotic and some native but all invasive?

A: All the species on both the Category I and Category II list are exotic. That is, they are not native to Florida. If you check at the end of the lists, you will find definitions used in producing the list and categorizing the species listed.

A few species native to Florida often are considered a nuisance when they spread in their environment in response to human-induced activities, such as changes in water levels and nutrient input. However, because they are native, these species still have natural limits on their spread (insects, diseases, etc. that coexist in Florida). Repairing the habitat disturbances usually solves the problem.

On the other hand, exotic species that spread aggressively (invasive exotics or exotic pest plants) were introduced from other geographic regions and don't have the natural ene-

continued…

Scientific Name	Common Name	EPPC Cat.	Gov't. List	Reg. Dist.
Macfadyena unguis-cati	cat's claw vine	I		N, C, S
Manilkara zapota	sapodilla	I		S
Melaleuca quinquenervia	melaleuca, paper bark	I	P, N, U	C, S
Mimosa pigra	catclaw mimosa	I	P, N, U	C, S
Nandina domestica	nandina, heavenly bamboo	I		N, C
Nephrolepis cordifolia	sword fern	I		N, C, S
Nephrolepis multiflora	Asian sword fern	I		C, S
Neyraudia reynaudiana	Burma reed, cane grass	I	N	S
Paederia cruddasiana	sewer vine, onion vine	I	N	S
Paederia foetida	skunk vine	I	N	N, C, S
Panicum repens	torpedo grass	I		N, C, S
Pennisetum purpureum	Napier grass	I		C, S
Pistia stratiotes	waterlettuce	I	P	N, C, S
Psidium cattleianum (=*P. littorale*)	strawberry guava	I		C, S
Psidium guajava	guava	I		C, S
Pueraria montana var. *lobata* (= *P. lobata*)	kudzu	I	N, U	N, C, S
Rhodomyrtus tomentosa	downy rose-myrtle	I	N	C, S
Rhynchelytrum repens	Natal grass	I		N, C, S
Ruellia tweediana (= *R. brittoniana*)	Mexican petunia	I		N, C, S
Sapium sebiferum (= *Triadeca sebifera*)	Chinese tallow tree	I	N	N, C, S
Scaevola taccada (= *S. sericea, S. frutescens*)	scaevola, half-flower, beach naupaka	I		C, S
Schefflera actinophylla (= *Brassaia actinophylla*)	schefflera, Queensland umbrella tree	I		C, S
Schinus terebinthifolius	Brazilian pepper	I	P, N	N, C, S
Senna pendula var. *glabrata* (= *Cassia coluteoides*)	climbing cassia, Christmas cassia, Christmas senna	I		C, S
Solanum tampicense (= *S. houstonii*)	wetland night shade, aquatic soda apple	I	N, U	C, S
Solanum viarum	tropical soda apple	I	N, U	N, C, S
Syngonium podophyllum	arrowhead vine	I		C, S
Syzygium cumini	jambolan, Java plum	I		C, S
Tectaria incisa	incised halberd fern	I		S
Thespesia populnea	seaside mahoe	I		C, S
Tradescantia fluminensis	white-flowered wandering jew	I		N, C
Tradescantia spathacea (= *Rhoeo spathacea, Rhoeo discolor*)	oyster plant	I		S
Urochloa mutica (= *Brachiaria mutica*)	Pará grass	I		C, S

CATEGORY II

Invasive exotics that have increased in abundance or frequency but have not yet altered Florida plant communities to the extent shown by Category I species. These species may become ranked Category I, if ecological damage is demonstrated.

Scientific Name	Common Name	EPPC Cat.	Gov't.List	Reg. Dist.
Adenanthera pavonina	red sandalwood	II		S
Agave sisalana	sisal hemp	II		C, S
Aleurites fordii (= *Vernicia fordii*)	tung oil tree	II		N, C
Alstonia macrophylla	devil-tree	II		S
Alternanthera philoxeroides	alligator weed	II	P	N, C, S
Antigonon leptopus	coral vine	II		N, C, S
Aristolochia littoralis	calico flower	II		N, C

Scientific Name	Common Name	EPPC Cat.	Gov't. List	Reg. Dist.
Asystasia gangetica	Ganges primrose	II		C, S
Begonia cucullata	wax begonia	II		N, C
Blechum pyramidatum	green shrimp plant, Browne's blechum	II		N, C, S
Broussonetia papyrifera	paper mulberry	II		N, C
Callisia fragrans	inch plant, spironema	II		C, S
Casuarina cunninghamiana	Australian pine	II	P	C, S
Cecropia palmata	trumpet tree	II		S
Cestrum diurnum	day jessamine	II		C, S
Chamaedorea seifrizii	bamboo palm	II		S
Clematis terniflora	Japanese clematis	II		N, C
Cryptostegia madagascariensis	rubber vine	II		C, S
Cyperus involucratus (*C. alternifolius* misapplied)	umbrella plant	II		C, S
Cyperus prolifer	dwarf papyrus	II		C
Dalbergia sissoo	Indian rosewood, sissoo	II		C, S
Elaeagnus pungens	thorny eleagnus	II		N, C
Epipremnum pinnatum cv. Aureum	pothos	II		C, S
Ficus altissima	false banyan, council tree	II		S
Flacourtia indica	governor's plum	II		S
Hemarthria altissima	limpo grass	II		C, S
Hibiscus tiliaceus	mahoe, sea hibiscus	II		C, S
Ipomoea carnea var. *fistulosa* (= *I. fistulosa*)	shrub morning-glory	II	P	C, S
Jasminum sambac	Arabian jasmine	II		S
Kalanchoe pinnata	life plant	II		C, S
Koelreuteria elegans ssp. *formosana* (= *K. formosana; K. paniculata* misapplied)	flamegold tree	II		C, S
Leucaena leucocephala	lead tree	II		N, C, S
Limnophila sessiliflora	Asian marshweed	II	P	N, C, S
Livistona chinensis	Chinese fan palm	II		C, S
Melia azedarach	Chinaberry	II		N, C, S
Merremia tuberosa	wood-rose	II		S
Murraya paniculata	orange-jessamine	II		S
Myriophyllum spicatum	Eurasian water-milfoil	II	P	N, C, S
Nymphoides cristata	snowflake	II		C, S
Panicum maximum	Guinea grass	II		C, S
Passiflora biflora	two-flowered passion vine	II		S
Pennisetum setaceum	green fountain grass	II		S
Phoenix reclinata	Senegal date palm	II		C, S
Phyllostachys aurea	golden bamboo	II		N, C
Pittosporum pentandrum	Philippine pittosporum, Taiwanese cheesewood	II		S
Pteris vittata	Chinese brake fern	II		N, C, S
Ptychosperma elegans	solitary palm	II		S
Ricinus communis	castor bean	II		N, C, S
Sansevieria hyacinthoides	bowstring hemp	II		C, S
Scleria lacustris	Wright's nutrush	II		C, S
Sesbania punicea	purple sesban, rattlebox	II		N, C, S
Solanum diphyllum	two-leaf nightshade	II		N, C, S
Solanum jamaicense	Jamaica nightshade	II		C
Solanum torvum	susumber, turkey berry	II	N, U	N, C, S
Sphagneticola trilobata (= *Wedelia trilobata*)	wedelia	II		N, C, S

mies they had in their home range. That frees them to spread easily into our native plant communities where they can displace native plants, change the natural structure of the habitat, and/or interfere with ecological functions of the system. They present far greater problems for natural resource conservation than any nuisance native species.

It's also important to remember that not all exotic plants brought into Florida become pest plants in natural areas. The FLEPPC List of pest plants in natural areas represents only about 10% of the nearly 1,300+ exotic species that have been introduced into Florida and that have become established outside of cultivation. Most escaped exotics usually present only minor problems in highly disturbed areas (such as roadsides). And there are other exotics cultivated in Florida that are "well behaved"; that is, they don't escape cultivation at all.

— K. C. Burks, Chair,
FLEPPC Plant List Committee

Use of the EPPC List

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. For more on this policy, see *Wildland Weeds* Summer 2002 issue (Vol. 5, No. 3), pp. 16-17.

www.fleppc.org

Scientific Name	Common Name	EPPC Cat.	Gov't. List	Reg. Dist.
Stachytarpheta urticifolia (= *S. cayennensis*)	nettle-leaf porterweed	II		S
Syagrus romanzoffiana (= *Arecastrum romanzoffianum*)	queen palm	II		C, S
Syzygium jambos	rose-apple	II		C, S
Terminalia catappa	tropical almond	II		C, S
Terminalia muelleri	Australian almond	II		C, S
Tribulus cistoides	puncture vine, burr-nut	II		N, C, S
Urena lobata	Caesar's weed	II		N, C, S
Vitex trifolia	simple-leaf chaste tree	II		C, S
Washingtonia robusta	Washington fan palm	II		C, S
Wedelia	(See *Sphagneticola* above)			
Wisteria sinensis	Chinese wisteria	II		N, C
Xanthosoma sagittifolium	malanga, elephant ear	II		N, C, S

The 2005 list was prepared by the FLEPPC Plant List Committee:

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FLEPPC-FDEP Database - The Exotic Pest Plant sight-record database is developed by FLEPPC members and maintained in collaboration with the Florida Department of Environmental Protection's Bureau of Invasive Plant Management. It contains over 5,200 occurrence records of Category I and II species in Florida conservation areas. It can be searched at the FLEPPC website (www.fleppc.org/database/ data_intro.htm). New and updated observations can be submitted online (look for the "field reporting form").

Eventually the records will be tied to a new GIS-based mapping effort (the Florida Invasive Plants GeoDatabase; www.fnai.org), so please provide latitudes and longitudes whenever possible if you contribute an EPPC sight record. These databases, along with other plant-data resources such as the University of South Florida Atlas of Florida Vascular Plants (www.plantatlas.usf.edu) and The Institute for Regional Conservation Floristic Inventory of South Florida database (www.regionalconservation.org), provide important and basic supporting information for the FLEPPC List of Invasive Species. *–K. C. Burks*

Images of FLEPPC-listed species may be found at one or more of the following websites: University of South Florida Atlas of Florida Vascular Plants, www.plantatlas.usf.edu; the "Introduced Species" page on the University of Florida Herbarium website, www.flmnh.ufl.edu/herbarium/cat/digitalimagingprojects.htm; at Fairchild Tropical Garden's Virtual Herbarium, www.virtualherbarium.org/vhportal.html, The Robert K. Godfrey Herbarium at FSU, herbarium.bio.fsu.edu/index.php; and at the University of Florida's Center for Aquatic and Invasive Plants, http://plants.ifas.ufl.edu. Please note that greater success and accuracy in searching for plant images is likely if you search by scientific name rather than a common name. Common names often vary in cultivation and across regions. For additional information on plants included in this list, see related links and pages at www.fleppc.org.

Putting a Stop to the Cat-claw Vine Infestation in Gainesville

Adapted from an article published April 4, 2005 in The Gainesville Sun

In a community so protective of its environment that hundreds of people will work together annually to collect tons of Air-potato tubers to slow the spread of that well-known invasive weedy vine, there is a need for a greater understanding of an even more severe threat: the Cat-claw vine *(Macfadyena unguis-cati)*.

The Cat-claw vine is a plant from the American tropics found only rarely in cultivation. But wherever it is planted, serious trouble soon follows.

The plant is a liana, a woody vine very much like its relative, the native orange-flowered Trumpet vine *(Campsis radicans)*. As soon as the seeds germinate, the young plant begins to form a subterranean tuber, which increases in size each year, providing food storage for future growth.

The stems creep up the trunks of trees by curious three-clawed hooks at the tip of each pinnately compound leaf. When the stems reach sunlight at the top of the canopy, large tubular bright yellow flowers are formed each spring–usually unseen until they fall to the ground below. The flowers are followed by foot-long capsules, which release innumerable winged seeds, thus further spreading the plants.

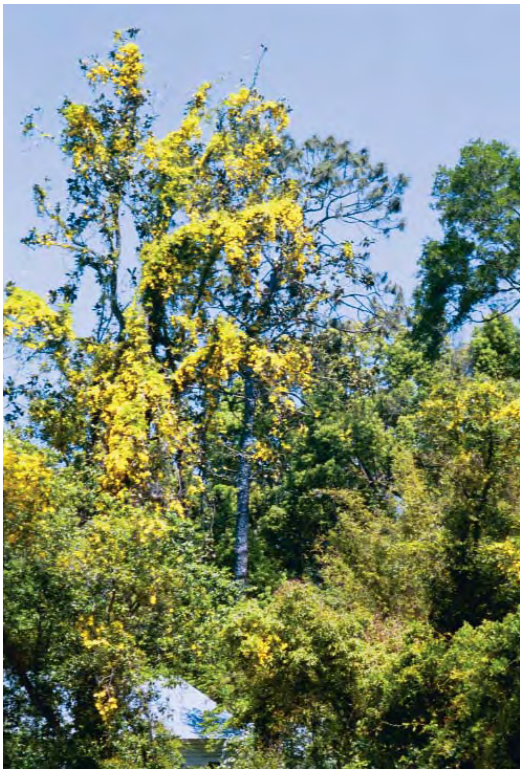
Cat-claw vine is now known as an escaped plant in 10 Florida counties, from Leon (Tallahassee) in the north to Miami-Dade in the south. It was completely unknown in the 1930s, when the standard book on southeastern flora was written (1). The first record of it outside of cultivation was a specimen found in 1957, climbing a Royal palm in Paradise Key, Everglades National Park. At almost the same time, a specimen was collected from a cultivated plant on the University of Florida campus.

The Cat-claw vine is far more rapid growing and difficult to eradicate than the pestiferous Air-potato *(Dioscorea bulbifera)*. It forms impenetrable tangles of wiry, twisted stems, all with the small claw-bearing leaves, catching other plants, clothing or human skin. The stems can be cut, of course, but almost within the week, new stems sprout up from the tuber beneath the ground.

In the Gainesville area in north central Florida, there are several centers of Cat-claw infestation. The initial planting on the University of Florida campus has spread out of control onto trees south and west of the main campus. Plants have somehow reached the depths of San Felasco Hammock several miles to the north, where their eradication may now be impossible.

Some foolish soul brought plants to the UF president's house, where the thicket of tangled vines has become so dense that even the university's physical plant maintenance personnel have given up attempting to destroy it. Could recent rumors of the UF president shopping for an off-campus home have anything to do with this pestiferous plant?

A convenient place from which to view the impact of Cat-claw in a residential area is in my own neighborhood just north of the UF campus and golf course. The seeds are now wafting up the street, onto other properties, as well as onto the wooded fringe of the university's popular bat house field, and are causing the expenditure of many dollars just to hold them in check.



Cat-claw in tree canopy

Cat-claw can be killed by herbicides, but that treatment can also kill the supporting trees. Knowing what the vine looks like, appreciating what devastation it is able to produce and taking unremitting prompt action to destroy the plants and tubers are the only means of fighting it.

If these efforts are not successful, those who love Florida and its diversified and beautiful plant life must look forward to a landscape of woodlands that can be penetrated only by carved-out tunnels through a green, tangled hell. If that day eventually comes, those of us who have not fled will remember the days when our worst plant enemy was the loopy, amiable, relatively benign Air-potato.

Daniel B. Ward is Professor Emeritus of Botany at the University of Florida and serves on the FLEPPC Pest Plant List Committee.

(1) Small, J.K. 1933. *Manual of the Southeastern Flora.* Published by author, New York City.

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A New Approach to Combat Invasive Species:
PROJECT-BASED TRAINING FOR GRADUATE STUDENTS

by Susan Musante

Biologists cannot solve the problem of invasive species by themselves. Doing that requires a coordinated effort between scientists, policymakers, and others in the community. Unfortunately, the skills necessary to address complex environmental problems are not traditionally taught to scientists as part of their formal education. They are left on their own to learn how to communicate and collaborate. Now, however, one university is offering interdisciplinary, project-based training to its graduate students to help them more effectively address the issues of biological invasions.

In the mid-1990s, the National Science Foundation implemented a new program, Integrative Graduate Education and Research Traineeship (IGERT), to restructure graduate education in a wide range of disciplines and change the way in which scientists are trained. A team of faculty from the University of California at Davis (UC-Davis) applied for and received an IGERT grant, recognizing the connection between the goals of IGERT and the challenges of solving problems related to invasive species.

The UC-Davis Biological Invasions (BioInv) IGERT program (www.cpb.ucdavis.edu/bioinv/) incorporates ethical, sociocultural, political, economic, legal, and scientific aspects of this environmental problem. BioInv IGERT focuses primarily on graduate students, though some undergraduate students and postdoctoral fellows also participate. Students in the program take a core course during their first year to gain a broad overview of the issues and the perspectives of those from many disciplines. In the second year, fellows with different backgrounds (e.g., ecology, economics, history, policy) work on a yearlong, collaborative, interdisciplinary project.

Heidi Weiskel, a BioInv IGERT fellow and ecology graduate student and recipient of the 2004 AIBS Emerging Public Policy Leader Award, studies disturbance regimes and the impact of invasive species on biodiversity. This fall she and her colleagues will investigate the role of the aquarium and horticulture industries on invasive species problems in the San Francisco Bay area. "IGERT has changed the way we [students] think about invasive species management," says Weiskel. "It makes us realize that we won't be able to do it in isolation." The program emphasizes the importance of communicating and collaborating with people outside academia.

The BioInv IGERT students participate in media training to develop their communication skills. Susan Williams, BioInv IGERT ecology trainer, former Aldo Leopold Fellow, and director of the Bodega Marine Laboratory at UC-Davis, says scientists need to learn to know how to translate current understandings about invasive species, based upon scientific research, for other professionals and for those in the larger community. Williams does admit that gaining and applying these skills is a challenge for both students and scientists.

"Realizing that not everyone thinks the same way you do is one of the toughest lessons to learn," adds Holly Doremus, a professor of law and co-principal investigator of BioInv IGERT. As an attorney with a PhD in plant physiology, she provides a unique perspective, encouraging students to see the nonscientific as well as the scientific aspects of environmental problems. "If real change is to occur, real understanding and communication, scientists need to move beyond telling others the way it should be," agrees Weiskel.

As a BioInv IGERT fellow, Jeanine Pfeiffer organized a symposium titled "Biological Invasions and Biocultural Diversity." The symposium brought individuals from nongovernmental organizations, local communities, national and local government, and universities together to discuss the social impacts of invasive species management in a professional context. "It was challenging," says Pfeiffer, "because not everyone is comfortable with incorporating human complexities to solve problems initially defined as biological issues."

Pfeiffer, now a PhD ethnoecologist, is working on a long-term, collaborative, bioculturally diverse conservation research program with an indigenous community in Indonesia; in California, she is also investigating the impact of invasive species on native cultures. Her involvement in BioInv IGERT enabled her to combine theories and techniques from a wide range of disciplines and perspectives to better understand the relationships between biological diversity (taxa), cultural diversity (related traditions), and invasive species (a category that Pfeiffer describes as encompassing "flora, fauna, microbes, GMOs [genetically modified organisms], and sometimes even *Homo sapiens*.")

"If real change is to occur, real understanding and communication, scientists need to move beyond telling others the way it should be."

It is not easy to implement interdisciplinary programs and effect change. It takes a considerable amount of time and institutional support and, adds Doremus, "a commitment from those involved to step outside the academic box." Though not all faculty members have the resources to restructure their graduate program the way that UC-Davis has, others can adopt its interdisciplinary, project-based approach to teach about biological invasions.

Faculty at any institution can work with students to identify invasive species issues in their community. Students can be encouraged to organize interdepartmental events and challenge participants to consider the ethical and social implications as well as the ecological impacts of invasions.

"This is a new generation of graduate students," says Williams. "They want to do really good research and they want it to be worth something for people." For this to happen, these scientists will need to have both a solid background in science and the skills to work on a team. Only then will they be properly equipped to solve complex environmental problems.

Susan Musante (smusante@aibs.org) is education and outreach program manager for the American Institute of Biological Sciences in Washington, DC (http://www.aibs.org)

Palm Beach County Ordinance Helps Residents Fight Invasive Plants

by Matthew King

A 1999 survey of South Florida revealed that over 2 million acres of land were covered by just four of the worst invasive exotic pest plants: Brazilian pepper, Australian pine, melaleuca & Old World climbing fern. Since 1990, Palm Beach County has purchased over 28,000 acres of natural areas, and the removal of invasive vegetation from them is the top management priority and the largest expense. Over $80 million per year is spent in the state of Florida managing invasive plants on state-owned lands. Palm Beach County spends between $2-3 million. It is for these reasons that Palm Beach County is taking an aggressive approach to combating the destructive plants.

In April 1986, Palm Beach County passed a law which required the removal of several species of invasive non-native plants whenever a piece of property was being developed, whether for a single-family residence, a church, or a commercial development. The ordinance also required that the properties remain free and clear of these invasive plants. In 1992, a second law was passed that required properties built before 1986 to remove the same invasive plants by the year 2006. Both of these laws only applied to developed property in the unincorporated areas of the County.

In 2000, the Palm Beach County Board of County Commissioners (BCC) started receiving numerous complaints concerning the 2006 deadline. Most of the complaints focused on the costs associated with the removal of the prohibited plant species, especially for Australian pine and Melaleuca trees. Because of these public concerns, the BCC directed the County's Department of Environmental Resources Management (ERM) to develop a new ordinance that would incorporate an incentive program to assist property owners with the removal of the invasive plants.

In 2001, ERM conducted several public workshops throughout the County seeking additional comments and suggestions concerning the proposed ordinance. The main concerns expressed at these workshops echoed those heard by the BCC: costs.

Old World climbing fern climbing pine trees in the North Jupiter Flatwoods Natural Area.

As a result of these workshops, ERM presented an innovative invasive non-native plant ordinance that established several incentive and financial assistance programs to help property owners with the removal of the invasive plants. The BCC passed the ordinance in February 2003.

Aerial view of Royal PalmBeach Pines Natural Area showing boundary and buffer area (red line).

The main focus of the Prohibited Invasive Non-native Vegetation Removal Ordinance is removal of the County's nine prohibited plant species on those properties within 500 feet (the buffer area) of 52 publicly owned natural areas. Owners of these properties would be required to remove all nine invasive species based upon a phased-in removal schedule, but they would have the assistance of several incentive programs (see page 21). Those property owners that choose not to participate in the program will have to remove the prohibited plant species at their own expense by the removal schedule dates. Properties that are not within a buffer area would only need removal of Air-potato and Old World climbing fern vines.

The County Commission created five incentive programs to assist property owners and public agencies with fighting invasive vegetation:

Australian Pine/Melaleuca Removal Program & Cost Share Program:

These two programs are for properties within 500 feet of a natural area. For the Australian Pine/Melaleuca Removal Program, the County will remove or eradicate the two tree species on parcels in the buffer areas at no cost to the property owner. For the Cost Share Program, parcel owners in the buffer areas can have County vendors remove the remaining seven of the nine prohibited invasive non-native plant species with a very minimal cost share (maximum $500) provided by the parcel owners. To date, over 8,000 prohibited plants have been removed from approximately 150 properties located within the buffer zone of 11 natural areas.

Invasive Vine Strike Force:

The Invasive Vine Strike Force program is a quick response strike force that treats and kills lygodium and Air-potato vines on public and private properties. To date, the County has treated over 20 acres of lygodium or Air-potato vines on approximately 110 properties.

Public Lands Grant Program:

This incentive program includes matching grant funds available to public entities in Palm Beach County for the removal of non-native invasive vegetation on publicly owned lands. Palm Beach County budgets $400,000/fiscal year for the matching grant program, with a $50,000 maximum for each individual project. Over the past two years, over $730,000 has been awarded to various public agencies in Palm Beach County, resulting in invasive plant removal projects totaling over $1,600,000.

Canopy Replacement Program:

The Canopy Replacement Program is an incentive for parcel owners outside the 500-foot buffer zone to remove the County's prohibited plant species on their own, although they are not required to do so by County Ordinance, prior to regulatory deadlines. Property owners will receive replacement trees for their participation to help minimize the loss of canopy associated with the removal of prohibited vegetation. The program is currently under development.

Prohibited Plants & Removal Schedule

Common Name	Scientific Name
2004	
Old World climbing fern	*Lygodium microphyllum*
Air-potato vine	*Dioscorea bulbifera*
2006	
Melaleuca, Punk Tree	*Melaleuca quinquenervia*
2008	
Brazilian pepper	*Schinus terebinthifolius*
Carrotwood	*Cupaniopsis anacardiodies*
2010	
Earleaf acacia	*Acacia auriculiformis*
Schefflera	*Schefflera actinophylla*
2012	
Australian pine	*Casuarina* spp.
Kudzu	*Pueraria montana* var. *lobata*

For more information, contact Matt King at
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Just Who is Daniel W. Clark?

Some folks know Dan Clark as a Supervisory Exotic Plant Specialist with the National Park Service, Biological Resources Management Division, Florida/Caribbean Exotic Plant Management Team or, more simply, as Weedman Dan. He was also the Program Chair for this year's 20th Annual FLEPPC Symposium. And he's a well-known and well-liked world traveler, fisherman extraordinaire and a super-nice guy. What many people don't know about Dan is that he's a virtual American hero, as well. A Lieutenant Commander with the US Coast Guard, Dan is a reservist officer assigned to Sector San Juan, Puerto Rico. He served in Bahrain following the attack on the USS Cole in Yemen in 2000. Following the 9/11 terrorist attacks, he served in Boston Harbor and in Guantanamo Bay, Cuba.

After Haitian Prime Minister Jean-Bertrand Aristide was deposed in February 2004, a United Nations international peacekeeping force began deployment to Haiti following months of civil unrest, floods and a list of humanitarian crises faced by the island's 8,000,000 inhabitants. Deployed for 100 days, Lieutenant Commander Dan Clark was the first Coast Guard officer to be directly assigned to a United Nations military staff in a peacekeeping mission, serving as Maritime Operations Officer. His duties involved detailed field reconnaissance of sites throughout Haiti for the placement of multinational troops sent to assure civil security and stability. He translated texts from Spanish into English, provided oral translation for officers from a variety of countries, acted as Military Deputy Liaison to the Haitian National Police, and coordinated visits from dignitaries from other countries, such as the presidents of Chile and Uruguay.

"Lieutenant Commander Clark was the embodiment of *Semper Paratus* [the U.S. Coast Guard's motto: Always ready]. He helped establish the UN's Joint Operations Center, he created and maintained an Operations Order tracking database, and he coordinated humanitarian field efforts by the UN Civilian Police and NGO civilians. Lieutenant General Heleno (MINUSTAH Force Commander) did not want to see him leave."

Dan has earned a vast array of medals in his lengthy career including the Coast Guard Commendation Medal, the Coast Guard Achievement Medal, the Armed Forces Expeditionary Medal, and the Navy/Marine Corps Achievement Medal. He most recently was simultaneously awarded the Armed Forces Reserve Medal, the United Nations Stabilization Mission in Haiti Service Medal, and the Meritorious Service Medal.

"I was part of something much bigger than me, or even the Coast Guard. I had an opportunity to serve those needing relief from the ravages of political strife and natural disasters. The personal and military lessons learned will stay with me forever."

Way to go, Dan! We're proud of you!

— Your friends at FLEPPC

A Farewell to Ferriter

Amy Ferriter has been a crucial member of the team fighting exotic pest plants in the state of Florida, both through her efforts with FLEPPC and her job as a senior environmental scientist with the South Florida Water Management District. She, together with her husband and two daughters, recently moved to Boise, Idaho where she already has begun to work on exotic pest plant issues at the Boise State University's Environmental Science and Public Policy Research Institute. Following are comments from a few of her many collaborators over the past 12 plus years.

"Amy Ferriter is passionate and determined in her efforts to protect natural lands. One of her greatest attributes is the influence she exerts on others to work together toward our common goal. I've known Amy since she coerced me into the burgeoning political embranglements between land managers and the "green industry" that was brewing in Collier County. I observed then, and many times since, that she doesn't back away until the mission is complete. Her determination has led to many of the advances that we've made toward protecting Florida's natural areas from invasive plant species. When the day's work is done, Amy is a tribute to her Irish ancestry."

— Ken Langeland, UF-IFAS,
Center for Aquatic and Invasive Plants

"Amy came to work for the SFWMD in October of 1992. Her first project included a paper co-published with Francois Laroche estimating the expansion rate of melaleuca in South Florida. This work became the basis for estimating the level of commitment that would be required to bring this pest plant under maintenance control. As we wind down the melaleuca program for the Everglades, we realize that the early predictions based on this study were very close and accurately predicted when we completed the initial work for the 'glades. Amy has been involved with so many projects and so many aspects of the invasive species issue, it is impossible to mention them all. But everyone has been touched by her presence in this profession in some way. We will certainly miss her straightforward, no-nonsense approach to problem solving. She is recognized as a leader not only in south Florida, but on a national level as well. Her career is just lifting off in Idaho, but already she is making a name for herself. We can only hope she remembers us as she moves into bigger and better life adventures. Remember Jane's Place!"

— Dan Thayer, SFWMD

"My first thought is that her colleagues might be able to reach her by phone more easily in Idaho than we could in Florida. Well, at least until she accelerates into her usual high drive, which she probably has done already! Florida's environment and its patrons, servants and students have been very fortunate to have Amy's talents."

— Bob Pemberton, USDA-ARS
Invasive Plants Research Laboratory

"From almost the beginning of our effort to tackle invasives in South Florida, Amy has been involved with almost all aspects of upland plant management—from management plans to FLEPPC. She has left a void that will be hard to fill. In addition, social gatherings at the meetings will never be the same. I cannot see how she can still be a big fan of Carl Hiaasen now that she has left the state. Amy could have stayed and toughed it out—what are a few category 3 and 4 hurricanes anyway?"

— Don Schmitz, Florida DEP –
Bureau of Invasive Plant Management

"Pound for pound, the best beer drinker I know."

— Tony Pernas, National Park Service

"Amy used to call herself "kitten" and referred to her husband as her roommate."

— Bob Doren, Florida International University

"Amy Ferriter and I met at Florida Atlantic University when I served as a member of her Master's committee. Her research was carefully and imaginatively done, and she found something with aerial photography that no one else had documented – Casuarina is spread by water! All previous studies in the USA focused exclusively on wind dispersal.

We worked together periodically on research projects after she joined the SFWMD and were both active in EPPC. Her levelheaded and efficient approach to everything greatly enhanced both organizations.

On several occasions we both attended social functions held by the EPPC. Much to my surprise, Amy held her own with the heaviest drinkers there – but she never seemed to be greatly affected by the alcohol. How does she do that?"

— Daniel F. Austin, Ph.D.,
Book Review Editor, *Economic Botany*

"Amy Ferriter has shown that in the realm of invasive plants, one person can make a big difference."

— Randall Stocker, University of Florida.

"In two words – extremely productive."

— Kris Serbesoff-King, The Nature Conservancy

Editor's Note: I inherited the editorship of *Wildland Weeds* from Amy, who was editor from our Winter 1997 Charter Issue through the Spring 2002 issue. Her efforts with FLEPPC as a whole, including the inception of *Wildland Weeds*, were visionary.

Air Potato Roundup a Success

Do you think there is a prize for smallest?

A total of 17,415 lbs. of air potatoes were gathered this year from 25 different sites around town by 880 volunteers during the 6th Annual Great Air Potato Round Up in Gainesville, Florida. Volunteers also gathered over half a large dumpster of trash. We thank the hundreds of citizens who participated and our many sponsors, including FLEPPC, who made this event possible.

Doomed 'taters

Christine Housel Nature Operations Division Dept. of Recreation & Parks, City of Gainesville (352) 334-2279; houselcm@ci.gainesville.fl.us

Kanapaha Spring Garden Festival

At the Kanapaha Spring Garden Festival in Gainesville, Florida, attended by approximately 10,000 enthusiastic gardeners, FLEPPC again had a booth and enticed visitors with another "Guess how many air potatoes are in the jar?" contest. This year's winner was Mr. Jim Glanville who correctly guessed the number at 312. Tropic Traditions, Inc., a wholesale plant nursery in Newberry, Florida, donated a beautiful native azalea for the grand prize. They have generously provided our native plant prize two years in a row. – Ed.

New Quarantine Facility Takes Flight in Davie, Florida

by Cressida Silvers

Fifteen years ago the FLEPPC Melaleuca Task Force concluded that long-term control of *Melaleuca quinquenervia* would be impossible without the integration of biological, traditional mechanical and chemical control technologies. In its first Melaleuca Management Plan, the task force designated implementation of a biological control program and the construction of a quarantine facility for this purpose as one of their top priorities, as did the task forces on Brazilian Pepper and Old World Climbing Fern in subsequent years. Now, a new containment facility at the USDA Agricultural Research Service (ARS) Invasive Plant Research Laboratory is finally completed and operational. To make it official, a dedication ceremony was held at the new facility in Davie on April 8, 2005.

JOHN SCOLES

The 17,000 square foot building is devoted to research on biological control of invasive plants. It contains office space, laboratories, and state-of-the-art quarantine space. This facility increases by eight-fold the available quarantine space for research on biological control of Florida's worst invasive plants, allowing more insects to be processed more quickly than before. In addition, the location and design of the facility allows for research on different invasive species agents simultaneously—something that had not been possible previously.

JOHN SCOLES

FLEPPC Board Member Mike Bodle presents award of appreciation to Congressman Claw Shaw, Jr. [bottom] Cutting the ribbon.

Almost two hundred people attended the dedication ceremony and the open house that followed. Speakers included officials from the US Department of Agriculture-ARS, the US Department of Interior, the US Army Corps of Engineers, and the South Florida Water Management District. These are the principle agencies responsible for the building's design and construction. Congressman Clay Shaw, Jr. gave the keynote address. It was Congressman Shaw's efforts to secure funding that made this facility a reality. In recognition of his unflagging and indispensable support of this project through the years, Mike Bodle, on behalf of FLEPPC, very eloquently presented him with engraved scissors (for ribbon cutting) accompanied by a plaque with the name and dedication date of the facility.

Headway on Capitol Hill Against Invasive Species

Constituents from more than 25 states gathered in Washington, DC in March to advance efforts toward protecting native ecosystems through awareness, education and control of invasive plant species. At NIWAW VI, more than 150 participants, including representatives of government agencies, non-profits, private industry and landowners, spent the week lobbying state legislators and attending briefings with federal agencies including the United States Department of Agriculture, Department of the Interior and the Army Corps of Engineers.

A series of presentations on regional success stories spotlighted exemplary use of resources, collaboration and community outreach to help reduce the impact of invasive weeds. These presentations were sponsored by FICMNEW, the Federal Interagency Committee for the Management of Noxious and Exotic Weeds.

An awards reception took place at the United States Botanic Garden, sponsored by FICMNEW, the National Fish and Wildlife Foundation, and the Botanic Garden. Six organizations and people were honored at this year's event:

Gary Johnston, National Park Service (NPS) received a FICMNEW award in recognition of his outstanding work in the area of invasive plant management. Johnston has served the NPS for 25 years. As a FICMNEW co-chair for four years, responsible for operations, he played a principal role in the development of the *Pulling Together Initiative* and the conceptualization of the Early Detection and Rapid Response System for managing invasive plants in the U.S.

Gina Ramos, Bureau of Land Management (BLM) also received a FICMNEW award. Ramos has advised the BLM Washington D.C. office as a weed management specialist for more than four years. Also serving as a FICMNEW co-chair, she has helped implement numerous FICMNEW programs, including work-planning retreats, Weeds Across Borders conferences and the Early Detection and Rapid Response System.

Both Johnston and Ramos are active leaders in the Invasive Weeds Awareness Coalition (IWAC) and serve on the National Fish and Wildlife Foundation's *Pulling Together Initiative* steering committee.

Rob Hedberg, Weed Science Society of America (WSSA), received the Invasive Weeds Awareness Coalition (IWAC) award for his superior work in generating awareness and education related to invasive plant management. As Director of Science Policy at WSSA, Rob's leadership has promoted collaboration and ongoing research among scientific and weed management communities nationwide. Chairing IWAC, Rob was the driving force behind the coordination and subsequent success of NIWAW VI. He also co-organized one of the most successful invasive species conferences in 2004, *Invasive Plants in Natural and Managed Systems-Linking Science and Management*, which attracted more than 800 participants.

Dale Bosworth, USDA, Forest Service, received the joint FICMNEW-IWAC award in recognition of his leadership supporting invasive plant management in the U.S. Bosworth is the 15th chief of the Forest Service and has worked there nearly his entire life. Under his leadership, the Forest Service has elevated the invasive species issue to one of the top four being addressed by that agency. Bosworth spearheaded the completion of the *National Strategy and Implementation Plan for Invasive Species Management*, which raised the national standard for invasive species management.

The City of Baltimore received the Community Spirit Award by the National Fish and Wildlife Foundation and FICMNEW for its exceptional work in vegetation management. The city has made remarkable efforts to foster cooperation and partnerships in the area of invasive plant management through its *Pulling Together Initiative* Grant Program.

Bonnie Harper-Lore, U.S. Department of Transportation, received the North American Weed Management Association (NAWMA) award in recognition of her work implementing the Weeds Across Borders program, a campaign to create collaboration among countries bordering North America. With a strong commitment to integrated roadside vegetation management, Harper-Lore's leadership has been instrumental in the successful execution of the campaign.

Adapted from a report by Andrea Cuff, Padilla Speer Beardsley

Internodes

Mark Your Calendar

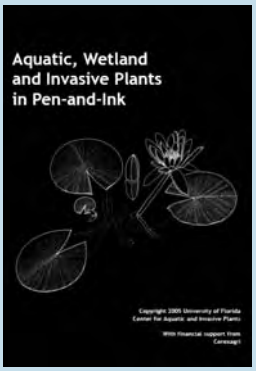
- 45th Annual Meeting of the Aquatic Plant Management Society (APMS), **July 10-13, 2005**, Paseo del Alamo, Texas. www.apms.org
- Invasive Plants: Perspectives, Prescriptions and Partnerships, Mid-Atlantic EPPC Annual Meeting and Biannual Symposium (co-sponsored by the Morris Arboretum), **August 16-17, 2005**, Philadelphia, PA. http://www.ma-eppc.org/
- 1st Annual Symposium of the Tennessee Exotic Pest Plant Council, **September 8, 2005**, Patterson Community Center, 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. Watch for registration information on http://www.tneppc.org/ or contact Pat Parr at 865-576-8123.
- 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
- 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

Nodes of Interest

- Putting it simply: "These weeds are not just garden nuisances; they are changing the way natural areas function, and they are costing all of us money." Taken from the Mississippi EPPC membership brochure.
- *Natives for your Neighborhood* ~ Check out the new and innovative native plant website by the **Institute of Regional Conservation** at: http://www.regionalconservation.org/beta/nfyn/. The mission is to be "A resource to help change what is now a backyard hobby for a few into a powerful conservation tool of many." The site facilitates and encourages the use of native plants specific to an area based on the user's zip code or county. Once a county name is entered, the user is taken to a list of native plants that provides both common and scientific names. All are linked to photographs and detailed information about the plant. Also indicated is whether the plant is available at local nurseries or widely cultivated and readily available. Users may also simply search the site using a scientific or common plant name. The site is a beta version so all counties are not yet represented. The current scope is south Florida. This is a worthy effort!

Publications

- *Aquatic, Wetland and Invasive Plants in Pen-and-Ink* (DVD). High resolution TIF scans of 175 line drawings that include common and rare, native and non-native species of Florida and the southeastern U.S. UF/IFAS Publ. No. DVD-347. $100. ifasbooks.ufl.edu, 800-226-1764

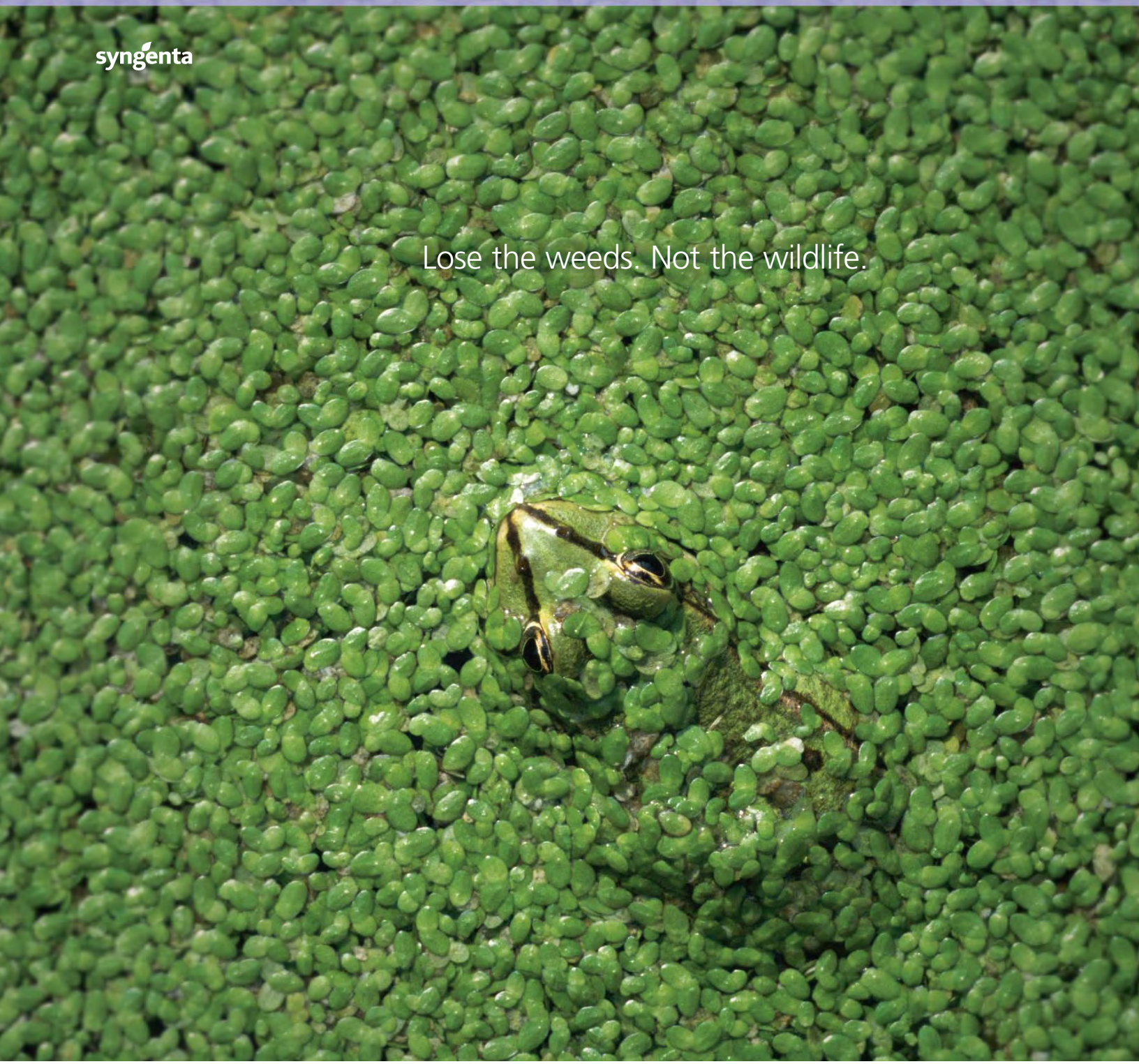


NEW! Pocket-sized Field Guides

- *Freshwater Plants in the Southeastern United States*, UF/IFAS Publ. No. SP-348. A recognition guide for 133 plants, similar in design to a folding road map, laminated with full color photographs and key identifying characteristics. Includes an insert with botanical drawings of approximately 80 of the plants depicted.

- *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. A recognition guide for 90 non-native plants targeted for control by the Florida Department of Environmental Protection.

Folded size is 4" x 9", convenient for pockets, glove boxes, knapsacks and hand carrying in the field. For hikers, bikers, birders, boaters, eco-managers, homeowners, realtors, teachers, scientists and students of all ages. Essential plant characteristics are pictured, with brief text descriptions where needed. Laminated for protection from the elements and made to last for many field trips. By V. Ramey, University of Florida, IFAS, Center for Aquatic and Invasive Plants (2005). $11.95 each. UF/IFAS Publications: ifasbooks.ufl.edu, 800-226-1764.



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