WILDLAND WEEDS

WINTER 2016
The Exotic Pest Plant Councils have not tested any of the products advertised or referred to in this publication, nor have they verified any of the statements made in any of the advertisements or articles. The Councils do not warrant, expressly or implied, the fitness of any product advertised or the suitability of any advice or statements contained herein.
Editorial

Welcome back to the **new Wildland Weeds**. You may notice some changes.

First off, “WW” is now a digital-only publication. The magazine may be available in other formats in the future, but for now you will see it as a PDF file only. Secondly, there is a new editor in town; that’s me, Rook Cleary. I cannot express enough the gratitude we should all have for Karen Brown’s inestimable contribution to the success of this magazine over many many years. It may take me a little while to get up-to-speed to match (if possible) the quality that you came to expect from Karen. So please bear with me for now.

I will be trying out some new “features” in this and coming issues. Please tell me what you think of them. Starting with the next issue, you should expect to see updates/stories from each of the Southeast EPPC chapters. I plan to expand the technical content of each issue with field notes and the latest research. And, hopefully, we can have some fun along the way.

One important thing I want to stress is that *Wildland Weeds* is **your** magazine. I am just the editor, but **you** are the writers. I won’t have much to do if I don’t receive any submissions. So why wait? You can submit your own article at any time! Send it to: Rook Cleary, Editor, *Wildland Weeds*, ruark.cleary@myfwc.com

And, thank you!

---

**From our ‘in case you missed it’ desk:**

**A New 'Bugwood Images'**

**Posted: 10 Nov 2015 01:30 PM PST**

The Bugwood Center (The University of Georgia, Center for Invasive Species and Ecosystem Health) and ITP (USDA APHIS) announce the release of a significant update to the end-user interfaces for four of Bugwood’s image sites ([http://images.bugwood.org/](http://images.bugwood.org/)). Forestry Images, Insect Images, IPM Images, and Weed Images have a new look with added navigation and functionalities to support the use, sharing, and permission management of images. The update included ITP’s Plant Pest Image Node at Bugwood Images – a collection of over 23,000 images originating from ITP’s Identification Tools. Attached is a document highlighting a number of the updates that support the users of Bugwood Images.

*Terrence Walters*, ITP Coordinator

*Joe LaForest*, Bugwood Center, Associate Director IPM and Forest Health

---

**National Invasive Species Awareness Week**

**February 21-27, 2016 - Save the Date!**

PARTICIPATE IN EVENTS ACROSS THE NATION to raise awareness and identify solutions to invasive species issues at local, state, tribal, regional, international and national scales. Locate an invasive species event in your state or county. Plan your own event using the NISAW Toolkit – where and when it works for you!

Plan to attend the NISAW 2016 reception and briefings on Capitol Hill!

Check [www.nisaw.org](http://www.nisaw.org) for the NISAW Toolkit for planning local events and the NISAW Event Locator – as well as more specific dates, details, event schedules, complete lists of partners and further developments and other potential events in Washington, DC!
Dennis David Teague (03/05/1955 – 05/31/2015)

Dennis Teague, exceptional Florida land manager, biologist, and dear friend to many in the natural resource world died in Knoxville, Tennessee on May 31, 2015, after a brief battle with cancer. Dennis had recently retired and moved his family from Niceville, Florida to his hometown of Sevierville, Tennessee. Dennis will be remembered for his kind and thoughtful demeanor, his unwavering dependability, his great sense of humor, his strong work ethic, and the enormous contribution he made in managing the natural resources within the 724 square miles of Eglin Air Force Base.

Dennis retired in January 2015 after 25 years of service as an Endangered Species Biologist for the Natural Resources Branch at Eglin AFB. His job entailed many different duties and skills, from managing endangered wildlife and rare plant species to setting the highest standards for invasive species inventory, control, and management. From the beginning, Dennis was at the forefront of the campaign to eradicate invasive species and he stayed involved as the movement evolved, and then became established in the state. Dennis submitted a letter to the editor in the Spring 2005 issue of *Wildland Weeds* concerning the movement of Japanese climbing fern in pine straw bales. This influenced the later listing of this plant as a Florida Noxious Weed.

Prior to moving to Niceville, he worked for the Everglades and Smoky Mountains National Parks. His love for nature and animals led him to complete a Bachelor of Science degree in Forestry and Wildlife Management. He served five years as a Peace Corps volunteer in Tanzania, East Africa, where he met his wife Mariamu. While in the Peace Corps, he taught the people of Tunduru, Tanzania to be a self-sustainable community by teaching them fish-farming. During his time in Africa, he climbed Mount Kilimanjaro, the largest mountain on the African continent.

Dennis is survived by his wife Mariamu Ali Baluwesi Teague, daughters Rebecca Jean Teague, Mwajuma Denise Teague, and Mary Alice Teague; son-in-law Garrett Freshwater; nephew and niece Nathan and Kenzlee Teague; parents Mary Alice Teague and Houston David Teague; and Kendra Ogle and Tia Burkett.

We miss Dennis, but will remember him always. It is truly an honor to have known and worked with him.

*Brenda Herring, Field Botanist, Florida Natural Areas Inventory*

Daniel Frank (Dan) Austin (05/18/1943 – 01/20/2015)

I was saddened to learn of Dr. Dan Austin’s recent passing. Besides being beloved by his colleagues, students, and friends, he was crucial in making a difference in the early days of the Exotic Pest Plant Council (now known as the Florida Exotic Pest Plant Council) by bringing scientific expertise to what was previously a somewhat arbitrary and capricious listing of Florida’s worst invasive wetland and upland plant species. I remember when I first met Dan at his office at Florida Atlantic University (FAU) in 1990 and asked him to look at a patchwork list of 20-some species that Council members had assembled. At that time, I was the newly elected Chair of EPPC and I needed the help of someone of Dr. Austin’s stature. While gazing at that list, Dan’s face had the look of someone thinking “been there, done that!” You see, unbeknownst to me, Dr. Austin was essentially the “Grandfather” of the science surrounding the invasion by non-native wetland and upland plants in South Florida (a term he hated, of course, but well deserved).
whenever I called him “Grandfather” at later EPPC meetings). In 1978, Dr. Austin published one of the first comprehensive papers regarding such invasions in the journal *Environmental Conservation* entitled “Exotic plants and their effects in southeastern Florida.” This paper, along with an earlier 1976 paper by Dr. Julia Morton from the University of Miami, raised alarm among scientists and resource managers about the ecological impacts of non-native plant invasions in Florida’s natural communities. This was long before the term “invasive species” was in common use or even recognized as a problem by many resource managers.

I explained to Dr. Austin that this ‘EPPC list’ had little credibility, especially with the ornamental plant industry and with those in ‘Tallahassee’ who did not appear to be interested in addressing South Florida plant invasions. I then asked if he would chair an EPPC committee of renowned Florida botanists and scientists of his choosing. Dr. Austin, known for being very direct, said the existing list was totally incomplete (his exact words cannot be printed due to their ribald nature) and he agreed to assemble a team from around the state to work on improving it. Dr. Austin enlisted David Hall, Dan Ward, Richard Wunderlin, Mark McMahon, and Ron Hofstetter to be part of his committee. It wasn’t long after that, EPPC had its first scientifically valid “Most-Invasive Plant Species” list. This list somewhat quieted our then critics, but more importantly it helped EPPC in garnering support for the eventual state funding to target invasive species such as Australian pine, Brazilian pepper, and melaleuca. In short, Dr. Austin made a difference in establishing EPPC’s scientific credentials.

But Dr. Austin was more than his work for EPPC. He was an excellent classroom lecturer at FAU and positively affected thousands of students throughout his teaching career. Because Dr. Austin had seen land development dramatically change south Florida and natural areas disappear at an alarming rate during his 30 years living there, he passionately fought for, and succeeded in establishing a 90-acre natural preserve on the FAU campus. He also established an herbarium at FAU that comprised one of Florida’s most comprehensive plant collections at the time. In short, Dr. Austin made a difference by forging a path for future (i.e., today’s) invasion biologists.

Before he retired from FAU, Dr. Austin helped develop and served as Chair of the Environmental Sciences Department. Dan strongly supported many environmental movements throughout his career in Florida. One outstanding trait I will always remember about Dr. Austin was he told it like he saw it, especially at EPPC meetings. I always found it refreshing to get the unvarnished scientific truth from him. Once again, Dr. Dan Austin made a difference in Florida, the Exotic Pest Plant Council. While I mourn his passing, he gave us direction for what many of us continue to do today.

*Don Schmitz, Invasive Plant Management Section, Florida Fish & Wildlife Conservation Commission*

**Additional Reading**


A digital collection of Dr. Austin’s non-*Ipomoea* publications and other articles of interest, as compiled by Alana Edwards (Education & Training Coordinator at FAU’s Center for Environmental Studies), is at [http://tinyurl.com/dan-austin-pubs](http://tinyurl.com/dan-austin-pubs)


*Florida Ethnobotany* (2004) by Dan Austin is available through CRC Press.

*Baboquivari Mountain Plants* by Dan Austin is available from The University of Arizona Press, [http://www.uapress.arizona.edu/Books/bid2208.htm](http://www.uapress.arizona.edu/Books/bid2208.htm)
Florida conservationist Roger Clark was born in New York and grew up in North Carolina, where he received a bachelor’s degree in wildlife biology from North Carolina State. After college, Roger moved to Pennsylvania where he worked at the Academy of Natural Sciences in Philadelphia. In 1980, Roger moved his family to Ft. Myers, Florida to become the director of the Calusa Nature Center. Roger went on to work for the Florida Department of Environmental Protection as an Aquatic Preserve Manager, primarily at Cayo Costa State Park. He then continued his career by working for the Lee County Government from 1984 until 2012.

While employed with Lee County, Roger worked tirelessly to conserve natural areas. Roger played an integral role throughout the life of the state’s Preservation 2000 program, as well as the county’s Conservation 20/20 program. Roger devoted as much time as anyone to making Conservation 20/20 a success, from working on planning, policy-making, and public support to spending weekends removing Brazilian pepper trees from acquired properties.

As an Adjunct Professor at Florida Gulf Coast University for the past ten years, Roger shared his knowledge and love for the environment with many students. He served several terms as president of Audubon of Southwest Florida. He was also active in the Natural Areas Association—Roger and I drove together to the Natural Areas Conference held in Asheville, North Carolina in 2002. He was a longtime member of the Florida Exotic Pest Plant Council, where he is remembered for his dancing at the annual conference ... and his resource management knowledge, of course.

*ed.*

Ever a good sport, Roger (left) serves as a surveyor’s “post” for a 19th century Illinois state land surveyor, at a Natural Areas Conference. *-ed.*
Update: New Practice for Creating a List of Invasive Plants that are Environmentally Harmful in a Defined Region (ASTM WK40773)

1. Scope
1.1 This practice establishes minimum procedures for creating a list of plants that are invasive to a defined geographical region. 1.2 The procedures in this practice are based on the assessment of the current environmental harm and risk of future environmental harm posed by plants. The consideration of economic harm or harm to human health is outside the scope of this practice. 1.3 Lists of invasive plants generated through use of the procedures in this practice are intended to provide government agencies and others with a credible basis for decisions regarding the use of plant species. This practice is not intended to replace the procedures or lists created through legislation or regulations, both of which often consider factors other than environmental harm. 1.4 This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

Model building codes and rating systems that aim to improve the environmental performance of buildings and their sites increasingly incorporate clauses to address the ecological damage related to invasive plants in landscaping. For example, the International Green Construction Code (IgCC), ASHRAE 189.1 Standard for the Design of High-Performance Green Buildings, Leadership in Energy & Environmental Design (LEED) rating systems, and the Sustainable Sites Initiative rating system all contain requirements or credits to reduce the use and presence of invasive plants on a building site. The implementation of these requirements, however, is dependent on the existence of a valid list of invasive plants for the region in which the building is located. For example, the definition of invasive plant species in IgCC is as follows: INVASIVE PLANT SPECIES. Species that are not native to the ecosystem under consideration and that cause, or are likely to cause, economic or environmental harm or harm to human, animal or plant health, defined by using the best scientific knowledge of that region. Consideration for inclusion as an invasive species shall include, but shall not be limited to, those species identified on: 1. Approved city, county or regional lists. 2. State noxious weeds laws. 3. Federal noxious weeds laws. Existing State and Federal noxious weed lists are generally insufficient: most have not kept pace with the latest science in the field, and many focus predominantly on agricultural, rather than ecological, impacts. Furthermore, few local governments have yet to develop their own lists. With definitions (such as that in IgCC) dependent on the existence of local, State, and Federal lists, the invasive plant requirements in green building codes will have little effect. A standard is needed to provide government agencies as well as environmental, academic, and horticultural organizations a common approach to determining what plants are invasive to a specified area.

Keywords plant species; invasive alien plants; landscaping; sustainable sites; exotic pest plants

The title and scope are in draft form and are under development within this ASTM Committee.

In the Spring 2014 issue of *Wildland Weeds*, there were three articles explaining the American Society for Testing and Materials (ASTM) standards and the process for developing an invasive plant listing. NAIPC (fka NAEPPC) has a lead role in the process of developing an ASTM standard for an invasive plant listing. NAIPC’s involvement focuses on assuring that the proposed standard is scientifically sound and rigorous, and that the standard has wider application than informing building codes, lending validity to current invasive plant lists. The ultimate goal is to have invasive plant lists recognized at the federal level for various uses.

NAIPC subsequently attended an ASTM conference in Anaheim, CA. Doug Johnson provides a summary from that event:

The good news is that everything we did here at the ASTM meeting in Anaheim needed to happen for us to move forward with an invasive plant listing standard. The bad news is that ASTM procedures worked against us and we were not able to get the standard approved as we had hoped. ASTM’s committee on sustainability standards is made up predominantly of building industry representatives who are cautious about getting too far ahead of the curve, especially on anything that might lead to regulations. The comments of two critics were enough to sway some of the voters (none of whom are familiar with our issue) to vote against the standard. There was not sufficient time allowed in the meeting structure for voters to understand the standard, the critics’ concerns and our responses. Very frustrating, as you can imagine. However, we did get formal concurrence rejecting several of the negative comments, we satisfied the concerns of one negative voter, and we met people in person so they now have a better feel for who we are. And of course we learned a lot.

A big thank you to Read Porter, Dave Moorhead, Sara Kuebbing, Susan Gitlin, Kelly Scanlon, Dave Gorchov, and Nancy Loewenstein for participating. And of course we learned a lot.

Doug Johnson, Executive Director
California Invasive Plant Council | www.cal-ipc.org
Invasive Plants Commonly Sold in Nurseries and Garden Centers
2013 FLEPPC Kathy Craddock Burks Education Grant
Jim E. Davis
UF/IFAS Sumter County Extension
Residential Horticulture Agent II
Master Gardener Coordinator

Situation

Invasive species are taking over Florida. We are being invaded every day. Florida is a hot-spot for alien invaders. Burmese pythons (*Python molurus bivittatus*) have become established in South Florida; giant cane toads (*Rhinella marina*) that can be deadly to pets roam Central and South Florida; Huanglongbing (HLB) or Citrus Greening, a disease that is a serious threat to Florida’s citrus industry, is being spread by an invasive insect known as the Asian citrus psyllid (*Diaphorina citri*). Florida is even being invaded by plants. Water hyacinth (*Eichornia crassipes*), air potato (*Dioscorea bulbifera*) and skunk vine (*Paederia foetida*) are a few examples of plants that were intentionally or accidentally introduced to the sunshine state. The Florida Exotic Pest Plant Council (FLEPPC) lists these plants as Category I exotic invasives. Category I exotic invasive plants displace native species, hybridize with native species and can alter natural ecosystems. Invasive plants are costing Florida millions of dollars in control. Homeowners will not see Category I exotic invasive plants such as skunk vine and air potato being sold in any garden center or nursery. However, there are several Category I invasive plants that are commonly sold. Many of these are readily available and can be found in local nurseries and garden centers. Category I invasive plants such as asparagus fern (*Asparagus sprengeri*), camphor tree (*Cinnamomum camphora*), lantana (*Lantana camara*), Chinese privet (*Ligustrum sinense*), Japanese honeysuckle (*Lonicera japonica*) and Mexican petunia (*Ruellia simplex*) are available in the retail and wholesale trade. The availability of invasive plants allows the opportunity for uninformed residents and landscape professionals to unknowingly purchase and install Category I invasive plants. What can we do to educate and prevent both residents and landscape professionals from purchasing and installing these menaces to Florida’s environment? The answer is to provide educational workshops and create a high quality educational brochure for residential homeowners and landscape professionals that will provide identification and information on common Category I invasive plants that are commonly sold in nurseries and garden centers. Workshops and an educational brochure will act as “preemptive” strike against the incorporation of invasive plants in residential and commercial landscapes. Alternative non-invasive plants will also be listed within the presentations. Funds used for this project was provided by the 2013 Kathy Craddock Burks Education and Outreach Grant.

Methods & Materials

The target audiences for this project included homeowners, UF/IFAS Master Gardeners, native plant society members and commercial growers. Presentations were delivered in three Central Florida counties, including Sumter, Lake and Citrus counties. The presentation includes information on the Florida Exotic Pest Plant Council (FLEPPC), the FLEPPC logo, pictures of commonly sold invasive exotic plants, non-invasive alternatives, control and a brief introduction on the more serious invasive exotics such as water hyacinth (*E. crassipes*), skunk vine (*P. foetida*), air potato (*D. bulbifera*), tallow tree (*Triadica sebifera*) and Brazilian pepper (*Schinus terebinthifolius*). Pre and Post tests were distributed to determine knowledge gained and a follow-up survey was given to determine what invasive plants were identified and removed. Funds received from the 2013 Kathy Craddock Burks Education and Outreach Grant was used to create a high quality brochure that was distributed within the workshops and to other educational events. The educational brochure contains the FLEPPC logo on the front and last page, high resolution photos of each species and a QR code that links to the UF/IFAS Center for Aquatic and Invasive Plants website.
which provides more detailed information and control. The brochure also gives links to other resources on invasive plants and a QR code that links to the FLEPPC website. The brochure was also distributed at educational booths created and held at local events such as the UF/IFAS Sumter County Fall plant sale, Farm City and Sumter County Government Day. Sterile cultivars were also on display. Booths were in joint collaboration with the Nature Coast Cooperative Invasive Species Management Area (NCCISMA). Funds received from the 2013 Kathy Craddock Burks Education and Outreach Grant was used to purchase 42 identification decks titled “Invasive and Non-native Plants You Should Know”. Decks were distributed to commercial growers belonging to the Florida Nursery, Growers and Landscape Association (FNGLA) action chapter in Lake County on January 14, 2014.

Microsoft PowerPoint® and Publisher® were used to create presentations and educational materials. TurningPoint© and Qualtrics® were used to collect data. Participants were given a pre and post survey consisting of 14 questions. Six workshops were presented, consisting of 112 participants. The facilities included The Villages Sumter County Service Center and UF/IFAS Extension offices. The educational brochure was created using Publisher® and was printed by a local printing service. Decks titled “Invasive and Non-native Plants You Should Know”, Central Florida SP 43 were ordered through the UF/IFAS Extension Bookstore. One newspaper article was written for the The Villages Daily Sun (Circulation 78,000) describing commonly sold invasive plants in nurseries and garden centers and promoting workshops. One newsletter article was written for The Journal (Circulation 3,000), which is a monthly newsletter produced by UF/IFAS Sumter County Master Gardeners that is sent to homeowners and fellow Master Gardeners.

Results
According to the survey results, participants demonstrated a 36% increase in knowledge on invasive plant identification. 18% (n=112) participants stated they have visited the FLEPPC website before attending the workshops. 74% (n-112) of the participants stated that they will visit the FLEPPC website after attending the workshops. 51% (n=112) of participants stated that they had bought an invasive plant prior to attending this workshop. 98% (n=112) of the participants stated that they will not purchase an invasive plant after attending the workshop.

A follow-up post survey was distributed and recorded participants physically removing 67 Mexican petunias (R. simplex), 11 asparagus fern (A. sprengeri), 31 (L. camara), 3 camphor trees (C. camphora) and 4 Chinese privet (L. sinense). Residents also stated they had removed 13 air potato (D. bulbifera) and 7 skunk vine (P. foetida) after attending workshops.

Conclusion
The success of this pilot program is evident. All participants, Master Gardeners, need to have continued training on the identification of commonly sold invasive plants found in nurseries and garden centers. The most commonly identified invasive plant that homeowners and Master Gardeners knew about was Mexican petunia (R. simplex). Asparagus fern (A. sprengeri) and (L. camara) were a surprise to most homeowners. Participants attending did have R. simplex in their home, knowing that it was invasive. Therefore, in future workshops we will emphasize the availability of sterile cultivars, such as ‘Mayan’ and ‘Purple Showers’. According to the results, much needs to be accomplished regarding public awareness to resources that list invasive plants commonly sold in garden centers and nurseries. Resources such as the Florida Exotic Pest Plant Council Invasive Plant List, the local Cooperative Invasive Species Management Area groups and the University of Florida’s websites on Assessment of Non-native Plants in Florida’s Natural Areas and the Center for Aquatic and Invasive Plants needs to be promoted more extensively to homeowners and Master Gardeners.
Educational materials such as the brochure are a great tool to providing clientele with information. These brochures were most popular at larger community events. Future educational efforts will leverage technology by offering online training for local nurseries and chain stores. Prevention is the key to eliminating future threats to Florida’s environment.

Is *Sporobolus jacquemontii*, West Indian Dropseed, An Exotic?

David W. Hall

West Indian Dropseed is sometimes called American Rat’s Tail Grass. Separating West Indian Dropseed, *Sporobolus jacquemontii* [syn. *Sporobolus indicus var. pyramidalis*] from Smut Grass, *Sporobolus indicus*, is quite difficult as the two grasses look very similar. Seemingly, always with grasses, the characteristics separating various species are based on being able to find and identify very small, even tiny, flower and foliage parts leading to many misidentifications. In this case, separating West Indian Dropseed from the closely allied and very similar Smut Grass has been complicated by recent plant taxonomists who differ about the names and the rank of the names. Is West Indian Dropseed a separate species or a variety of Smut Grass? The major differences are: Smut Grass—inflorescence a tight spike; first and second glume nearly equal; second glume 0.6-1.6 mm long with a sharp to rounded tip; West Indian Dropseed—inflorescence branches somewhat spreading; first and second glume unequal; shorter second glume 0.4-0.6 mm long with a truncate (flattened) tip. These differences led the authors of the genus in the recent Volume 25 of the Flora of North America to separate the two entities at the level of species. Those authors noted that, in their opinion, West Indian Dropseed was of North American origin. Dr. Richard Wunderlin, working on the Flora of Florida, has recently thought that West Indian Dropseed was but a variety of Smut Grass (*Sporobolus indicus var. pyramidalis*), and is native to Asia. The forthcoming Grasses of Florida by this author agrees with the Flora of North American authors that these two entities should be separate species.

West Indian Dropseed has become quite invasive in Florida, spreading from pastures into adjacent undisturbed flatwoods and palmetto prairies. The Florida Exotic Pest Plant Council is concerned about the origin of West Indian Dropseed. If it is an exotic grass disturbing native areas, efforts would be made...
to try to bring it under some measure of control. West Indian Dropseed is well known in the Caribbean and other tropical areas of the Americas. One can easily see how this grass could simply have spread into Florida before modern humans could have helped with distribution.

Albert S. Hitchcock published his *Manual of the Grasses of the United States* in 1935 with subsequent revised editions by Mary S. Chase in 1950 and 1971. His well-researched flora was the standard from which most information on grasses in other U.S. floras at the time, and even more recent floras was obtained. Hitchcock was an excellent illustrator and his Manual has illustrations for virtually every species mentioned. *Sporobolus poiretii* and *Sporobolus berteroanus* are now known synonyms of *Sporobolus indicus*. In his 1935 edition Hitchcock describes *Sporobolus poiretii* (previously known as *Sporobolus berteroanus*) as having a spike and the illustration shows a spike and the longer sharp-pointed second glume which clearly indicates the illustration is of what is now known as *Sporobolus indicus*. Confusing the issue is that he describes *Sporobolus indicus* right next to *Sporobolus poiretii* with an illustration clearly showing the spreading branches and flat-tipped short second glume of *Sporobolus jacquemontii*. Obviously he had confused the names. This confusion has caused the origin of *Sporobolus jacquemontii* to be thought the same as *Sporobolus indicus*.

As per Hitchcock in 1935, the species now known as *Sporobolus jacquemontii* had only been collected twice: on ballast in Mobile, Alabama, and from Punta Gorda, Florida. John K. Small published his monumental *Manual of the Southeastern Flora* in 1933, two years earlier than Hitchcock’s *Manual*. However, Hitchcock wrote the treatment of the grasses for Small a few years before it was actually published in 1933. Hitchcock in Small notes that prior to 1933 he knew of one plant of *Sporobolus indicus* (now *S. jacquemontii*) and it was located at Mobile. It is clear that, prior to 1933, Hitchcock had only seen one specimen from the U.S. of what we now call *Sporobolus jacquemontii* and by 1935 he had seen two. From this evidence, West Indian Dropseed was just arriving in the U.S. in the early 1900s and was not originally in North America. Available information supports West Indian Dropseed being a native of tropical America, including the West Indies. By the early 1900s, Smut Grass was already widespread along the coastal plain from Oklahoma and Texas into Tennessee and Virginia.

Since the arrival of West Indian Dropseed, it has spread throughout central and south peninsula Florida, even jumping to Wakulla County in the central panhandle. By the 1970s it had spread widely in disturbed habitats. In the late 1980s and early 1990s, cattlemen were becoming increasingly aware that this grass which had been somewhat of a nuisance in pastures was becoming a serious weed. West Indian Dropseed was becoming so thick it was able to crowd out planted forage grasses. West Indian Dropseed is not good for forage and not easily controlled. Because of the resistance of this weed to control methods, it has been able to multiply and spread throughout its current range in Florida. Recently, this grass has started spreading into natural pinelands and palmetto barrens adjacent to open and woodland pastures, perhaps best exemplified by the invasion of native palmetto prairie at Archbold Biological Station in Highlands County (see following photograph).

Some Australian publications note that *Sporobolus jacquemontii* in Australia is behaving just as it is in Florida. Having started as an occasional pasture weed, it now has become a major problem and is spreading from pastures. Having determined that West Indian Dropseed is not native in Florida, the plant list committee of the FLEPPC has placed this weed on the List of Invasive Plant Species as of 2015. Research is underway concerning the earliest and therefore correct scientific name for West Indian Dropseed. This effort may cause the scientific name to be changed, but the common name and its weedy nature will remain the same.
West Indian Dropseed invasion of native palmetto prairie at Archbold Biological Station, Highlands County, Florida (photograph by David Hall)
THE CRACKER BARREL

Y’all may already know this, but back in the day people used to sit on the front porch of the town store and swap tales of local goings-on. A barrel of soda crackers figures into this setting, as history would have it. That cracker barrel was the precursor to the water cooler. Nowadays there ain’t no barrels or coolers or whatnot, so the best we might do is to swap stories right here, all virtual-like.

Introducing a new and (hopefully) continuing feature in *Wildland Weeds*! Everyone has stories, but often not a venue for sharing them with a broad audience. And some people, like Ellison “now that’s an interesting story...” Hardee, are natural storytellers whose stories just have to be recorded for posterity. I was honored that Ellison accepted my invitation to be the inaugural author for this feature.

But YOU don’t have to be famous, or even good-looking. If you are a contractor working in the Southeast and have a story of weed-whacking adventure, we want to hear (and share) it! Your story doesn’t have to be polished (that’s what editors are for, after all), but it does have to be sincere and honest-to-goodness true! [Not to be confused with “true” in the FactCheck sense of the word.]

So send y’alls stories to this here editor with “Cracker Barrel” in the subject line.

When Rook invited me to submit this piece, I considered telling of airboat wrecks, stuck trucks, big snakes, super low tides, non-target damage (not much), impregnable islands, or high water. I finally decided on the following tale that held a lot of excitement, anticipation, intrigues, and finally [SPOILER REMOVED -ed.] for us.

A few years ago, our company was providing invasive plant management service in Florida Panther National Wildlife Refuge. Things were going well and we were working in a systematic process south to north. We had a big crew with two supervisors.

The crew found a strongbox; closed and locked. After the day was over one of the supervisors called to report the find.

Another one of the supervisors speculated that after a certain length of time a find such as this became the finder’s property. He is no longer with our company. Our first report was that it was full of treasure, first gold, then silver dollars. Many calls to the supervisors and crew members during the night only added to speculation and a realization that we must report and turn in this treasure. I speculated that it was a strongbox hidden by drug traffickers; gold belonging to Jake Summerlin, the cattle baron of the past (who was paid in gold coin); or a Spanish treasure chest left by pirates. We even wondered if it was being guarded and our people would be shot the next day when they went to recover the box!

I called Ben Nottingham with the US Fish and Wildlife Service, who we were working for, to report this amazing discovery. I told Ben we wanted no part of this situation and wanted to be rid of any responsibility that may have come to us. Ben, to say the least, was not impressed, but did agree for us to bring the box to his office. We contacted the supervisor who called in the find. He was a really strong fellow and I asked him if he could handle the box personally. He said he could; he was really strong. We instructed him to go get the box (in the night) and maintain possession (chain of evidence) until we could surrender it to USFWS. He recovered the box and carried to his hotel room, with instructions to carry it to Mr. Nottingham’s office the next morning.

The next morning, he lugger it upstairs to meet with, apparently, a host of Federal folks. Upon entering the office a series of chuckles were enjoyed by several in attendance. The strongbox, you see, had been used by the Feds in the past to anchor a deer capture net while they were doing a whitetail deer study. The box was filled with ... very heavy rocks. You run into all kinds of situations in the invasive plant management business in Florida.

[Note: I may be a little off with some details, but that is my story.]

Ellison Hardee, VP, Southeastern Chemtreat, Inc.
**FLIP: A mobile-friendly website for identifying invasive plants**

By necessity, most land managers and environmental specialists are quite adept at identifying invasive plants in their regions, but members of the public generally are not. Thanks to notorious species like melaleuca and Brazilian pepper, almost everyone knows that invasive plants are a serious problem, but few people can identify more than a handful of them. As a result, unknowing people continue to plant them in their landscapes or fail to eradicate them when they creep in uninvited.

To help people to broaden their knowledge of invasive plant species, the Orange County Environmental Protection Division applied for and received from FLEPPC in 2011 funding to develop an online field guide to invasive plants in central Florida. The project was funded by the Kathy Craddock Burks Education Grant, and Orange County contracted with the University of South Florida to complete the work. USF’s Florida Center for Community Design & Research (FCCDR) was a natural choice, as it is the creator and administrator of the *Atlas of Florida Vascular Plants* and the *Alabama Plant Atlas* and also hosts the *Orange County Water Atlas*. (The FCCDR was recently reorganized, with urban design projects remaining with FCCDR in the School of Architecture, and water-related and informatics projects, including the online Plant Atlases, moving to the USF Water Institute in the School of Geosciences.)

Dubbed “FLIP” (for FLorida Invasive Plants), the original version of the website had only central Florida species but now has information for most Category I invasives. FLIP can be accessed at [http://www.plantatlas.usf.edu/flip/](http://www.plantatlas.usf.edu/flip/). Because it is a website and not an “app”, it is viewable on any device with a web browser, without no download, software installation or login required.

FLIP is focused on identification of, and education about, exotic invasive plants, rather than on reporting. For this reason it has several photographs for each species and includes information about strategies for removing or containing infestations. The goal is to bring together the best information about invasive plants from various sources in a format designed for mobile devices, and to provide online references for additional information.

Data about each plant species includes scientific name, common names, place of origin, ecological impact, physical description, identification tips, history, Florida range, prevention/management strategies, and photographs. A primary source of the information on the site is *Identification & Biology of Non-Native Plants in Florida’s Natural Areas* (1998), by Kenneth Langeland and Kathy Craddock Burks, as well as the Second Edition of that book. Most photos used on the site come from the *Atlas of Florida Vascular Plants* website, with the Bugwood Image Database System ([images.bugwood.org](http://images.bugwood.org)) a secondary source. Whenever available, multiple photographs of a plant are provided, showing the full plant, as well as leaf, flower and fruit details to aid in identification.

Users can browse the list of plants in order by common or scientific name, or filter the list by entering a search term. They can also search the database for plants that match one or more of 8 different characteristics: plant type, leaf arrangement, leaf edges, flower arrangement, number of petals, flower color, stem characteristic, or bark characteristic. Botanical terms like “crenate” and “sessile” used by botanists to describe a plant’s physical characteristics flummox most people, so FLIP includes a glossary of the terms that are used. It also has a page of bibliographical references, with links to online information whenever possible, for users who want to learn more.

A perfect use for FLIP is during volunteer invasive plant removal events, to help participants recognize targeted species at the work site as well as other invasives that might be present.
The original funding provided for creation of the site and the addition of an initial complement of around 20 central Florida invasives. Since the site was launched, student interns have added information for the remaining Category I invasives. USF intends to continue to host FLIP indefinitely. With the contribution of student and volunteer labor, it is hoped that all Category II invasive species will eventually be added.

Please pass the word about FLIP as part of National Invasive Species Awareness Week! http://www.plantatlas.usf.edu/flip/

Jan Allyn, Content Manager
janallyn@usf.edu
USF Water Institute
http://waterinstitute.usf.edu/
http://www.plantatlas.org/
http://www.wateratlas.org/

Plants growing in retention ponds and drainage ditches within the freshwater zone were surveyed in Daytona Beach, South Daytona, Port Orange, Ormond Beach, Deltona, and DeLand, Florida. The project involved two years of field work to conduct the inventory of aquatic plants, which included surveying of ponds and ditches, photographing and identifying species, and photograph editing. The surveyed plants were then organized into how the species would be presented in the publication. With the funding from the Florida Exotic Pest Plant Council (FLEPPC), Bethune-Cookman University (B-CU), and the Florida Aquatic Plant Management Society (FAPMS), a field guide book entitled “Plants of Retention Ponds and Drainage Ditches: the Greater Daytona Beach Area” [1] was completed and published both in hard copies and on-line (http://www.fleppc.org/Publications/AquaticPlantsOfTheGreaterDaytonaBeachAreaREDUCED.pdf). The book lists and displays original photos and descriptions of approximately 150 native and non-native species of plants growing in and along over 100 retention ponds, ditches, and canals.

As overwhelming as the invasive plant problem is, there is no room for retreat. Budgets are tight and time is limited, however, to do nothing about them will only delay their inevitable damage of urban infrastructure.
Billions of dollars are spent each year fighting the effects of these invasive organisms — whether they are exotic plants, animals, insects, or disease-causing microbes. The damage invasive organisms cause to ecosystems and the economic loss due to these pests is significant. It is estimated that approximately 50,000 exotic species are established in the United States [2], and as of today, Florida has over 1,400 exotic plants established in our urban and natural landscapes. A 2005 study estimated that losses for forest and non-forest products due to exotic species cost the American taxpayers $138 billion each year [3].

Table 1. List of non-native plant species and similar looking species found in and along retention ponds and drainage ditches in Daytona Beach and the vicinity area. Red font denotes non-native. The zone numbers pertain to basins that are designed to maintain a permanent water level.

<table>
<thead>
<tr>
<th>Zone</th>
<th>Not Native</th>
<th>Compare with</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deep water pool and shallow water edge</td>
<td>Salvinia minima</td>
<td>Spirodela polyrhiza</td>
</tr>
<tr>
<td>that is 1 ft below the normal pool</td>
<td>Eichhornia crassipes</td>
<td>Limnobium spongia</td>
</tr>
<tr>
<td></td>
<td>Pistia stratiotes</td>
<td>Egeria densa</td>
</tr>
<tr>
<td></td>
<td>Myriophyllum aquaticum</td>
<td>Elodea canadensis</td>
</tr>
<tr>
<td></td>
<td>Hygrophyta polysperma</td>
<td>Myriophyllum heterophyllum</td>
</tr>
<tr>
<td></td>
<td>Polygonum persicaria</td>
<td>Ludwigia repens</td>
</tr>
<tr>
<td></td>
<td>Alternanthera philoxeroides</td>
<td>Other Polygonum spp.</td>
</tr>
<tr>
<td></td>
<td>Colocasia esculenta</td>
<td>Peltandra virginia</td>
</tr>
<tr>
<td>1 ft above the normal pool</td>
<td>Hydrocotyle sibthorpioides</td>
<td>Hydrocotyle umbellata</td>
</tr>
<tr>
<td></td>
<td>Panicum repens</td>
<td>Tradescantia ohiensis</td>
</tr>
<tr>
<td></td>
<td>Commelina diffusa</td>
<td></td>
</tr>
<tr>
<td>1-4 ft above the normal pool, periodically</td>
<td>Arundo donax</td>
<td>Setaria sp.</td>
</tr>
<tr>
<td>inundated</td>
<td>Polypogon monspeliensis</td>
<td>Carex retroserus</td>
</tr>
<tr>
<td></td>
<td>Cyperus roduntus</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sisyrinchium rosulatum</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ruellia simplex</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sphagnetica trilobata</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Calyptocarpus vialis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sapium sebiferum</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Schinus terebinthifolius</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dioscorea bulbifera</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lantana camara</td>
<td></td>
</tr>
</tbody>
</table>

4 ft and above normal pool

Plantago lanceolata
Imperata cylindrica
Cynodon dactylon
Dactylotenum aegyptium
Kyllinga brevifolia
Crinum asiaticum
Richardia scabra
Richardia grandiflora
Portulaca amilis
Oxalis articulata
Ipomoea purpurea
Emilia sonchifolia
Emilia fosbergii
Russelii equisetiformis
Oxalis auriculata
Portulaca oleracea
Sonchus oleraceus
Ludwigia peruviana
Dioscorea bulbifera
Lantana camara

Doctylotenium aegyptium
Cynodon dactylon

Richardia grandiflora
Richardia scabra
Portulaca pilosa
Oxalis drummondii, Oxalis corniculata

Emilia fosbergii
Emilia sonchifolia

Oxalis corniculata, Oxalis drummondii
Portulaca amilis, Portulaca pilosa

Ludwigia octovalvis
In this book, we outline the state of the water conveyance and retention systems of several cities in eastern Volusia County, FL. We undertook this project because we recognize the potential for localized flooding due to poor water management. Any organization, private or public, that has a responsibility to manage water conveyance or retention should have a “Best Management Practices” plan and regularly inspect their retention ponds and canals. In addition to their ability to disrupt water flow, invasive plants can over run unmanaged areas and crowd out native plants. The management plan should include: maintenance procedures (i.e. mowing and debris control), repairing damage to side slopes, and the ways (chemical or mechanical) to remove invasive vegetation.

In conjunction with the development of this guide, a workshop was conducted at B-CU; and a field survey event was conducted along the International Speedway Boulevard in Daytona Beach (Figures 1 and 2). The event was designed to increase the public’s awareness of the invasive species problem and to highlight easily confused native and invasive species. This project provided B-CU students and faculty, local environmental managers, teachers, and the general public with hands-on field experiences in understanding the status of invasive plants in their community. This project was conducted through a partnership among B-CU, various environmental and governmental agencies, and local volunteers. The information contained in this publication will be beneficial to our partners by assisting them with tips on species identification and provide them with justification (for the allocation of time and money) in their efforts to limit the spread of these invasive species, which in the long run, will help keep our natural areas free of these pests.

Bethune-Cookman University was recently awarded with a College & University Disaster Assessment and Research Center (CUDARC) to conduct a project entitled “GIS Mapping and Gap Analysis of Existing Research Projects for the Consortium-level Project H$_2$O.” “Project H$_2$O” is a new initiative that was organized by academic, government, and non-profit organizations from Volusia County in order to leverage the existing efforts in order to (1) identify knowledge/research gaps and (2) pursue and obtain external funds to continue and expand the consortium-level, watershed-level research and outreach activities in order to achieve sustainable coastal and aquatic resources and communities of East-Central Florida. Through this CUDARC project, our work on inventorying retention ponds and drainage ditches will now allow us to develop a more detailed classification system that will include their status as reclaimed, man-made/natural, and their potential to contribute to non-point source pollution. This increased level of detail will allow us to identify which water systems are managed by which agency and identify potential sources of non-point source pollution, such as residential run off, golf courses, and agricultural/farming areas.

Literature Cited
UF/IFAS Assessment Launches an Interactive Website
Deah Lieurance and S. Luke Flory

Discussion of non-native invasive plants in the southeastern United States is often primarily focused on heavy-hitters like kudzu (Pueraria montana var lobata), air potato (Dioscorea bulbifera), Japanese honeysuckle (Lonicera japonica), and cogongrass (Imperata cylindrica). Many of these species are regulated and their ecological impacts are well known. The Florida Exotic Pest Plant Council lists 76 species as Category I invasive plant species present in the state and causing ecological damage (FLEPPC, 2014). However, it is estimated there are approximately 1,400 non-native plant species in the state of Florida, with 124 species currently present in state parks (Adams et al. 2011; FLEPPC 2014). Are these species problematic but less widely researched or publicized? Are they non-threatening? Or will they be a problem in the future? Given the limited resources available for monitoring and removal efforts for invasive plants, identifying species that are safe to use for landscapes and gardens and those that should be regulated, monitored for escape, or targeted for removal is a top priority.

The UF/IFAS Assessment of Non-native Plants in Florida’s Natural Areas (hereafter, UF/IFAS Assessment) was developed in the late 1990s by the UF/IFAS Invasive Plant Working Group to provide objective, data driven recommendations for the use of non-native plants in the state, and to help identify species before they cause ecological damage and become costly for land managers. Initially, the UF/IFAS Assessment was used as an internal tool to provide information to IFAS faculty and staff on the potential use of non-native plant species. In the years since its creation, the UF/IFAS Assessment has become a valuable resource for more than just university personnel. Master gardeners, homeowners, professional landscapers, and the Florida Department of Agriculture and Consumer Services also regularly consult the Assessment database for guidance on what should be recommended for planting and what should be removed.

The UF/IFAS Assessment utilizes three tools to evaluate non-native species: the Status Assessment for species already present in the state, the Predictive Tool for species proposed for introduction (or a new use such as biomass planting), and the Infraspecific Taxon Protocol for cultivars, varieties, hybrids, or subspecies of non-native, invasive species found in Florida (see http://edis.ifas.ufl.edu/ag376 for more information on the specifics of these tools). Of the 800+ species evaluated thus far, approximately 70% have been designated as safe for use in the state. Many of these species are sold by the horticulture industry in the region and add to the state economy. An “ok to recommend” from the UF/IFAS Assessment provides some confidence that the species will not become a problem in the future.

The UF/IFAS Assessment takes a different approach than the traditional Exotic Pest Plant Council (EPPC) plant listing process. Instead of only focusing on species thought to cause immediate or impending ecological harm (a so-called “black list”), the UF/IFAS Assessment provides results for all non-native species, including those safe for planting (a “white list”). In addition, UF/IFAS Assessment protocols incorporate economic and geographical data for each species evaluated. The results are compiled in a comprehensive database that identifies problematic species that should not be planted, species that should be monitored for invasive characteristics, and species that are not predicted to be a problem and are safe to plant.

In November 2014 the UF/IFAS Assessment launched an interactive, searchable website and database to help people in the region determine if that non-native plant in your backyard should be removed or propagated (http://assessment.ifas.ufl.edu; Figure 1). Results found in the database are specific to the north, central, and south regions (or zones) of the state.
The database can be filtered by zone, conclusion type, origin, growth habit, and evaluation method (Figure 2). For example, a simple search can tell you what vines to avoid planting in north Florida or which grasses originating from temperate regions in Asia are acceptable to plant in central Florida (Figure 3). Over 1500 images were added to the database, as well as relevant links to USDA Plants Database, EDDMapS, and the UF Center for Aquatic and Invasive Plants. Additionally, the site is mobile-friendly, meaning it can be readily accessed on smartphones and tablets. UF/IFAS Assessment staff are actively identifying and evaluating potentially problematic non-native species and species are regularly re-evaluated to account for changes in their status in the state. New species entries and changes to the current recommendations are updated regularly in the database so users have access to the most current information.

Development of the web site and database was made possible by a unique partnership between UF/IFAS, the Florida Fish and Wildlife Conservation Commission, and the Florida Department of Agriculture and Consumer Services, demonstrating how land grant universities can work with agencies to benefit the state. Everyone from weekend gardeners to professional landscapers to UF faculty and staff rely on the recommendations of the UF/IFAS Assessment team when considering the use of non-native plants. The new IFAS Assessment web site provides one more tool for Floridians to manage and conserve our valuable natural resources by helping to prevent further non-native plant invasions. Find your plant here: http://assessment.ifas.ufl.edu.

References

And finally,

THIS JUST IN!!

Cal-IPC, in partnership with toxicologist Susan Kegley of the Pesticide Research Institute, has published a new manual on “Best Management Practices (BMPs) for Wildland Stewardship: Protecting Wildlife When Using Herbicides for Invasive Plant Management.” The manual includes field techniques from experienced land managers as well as risk charts for commonly used herbicides.

The 47-page manual is available as a pdf for free download at www.cal-ipc.org/ip/management/BMPs.