**Fall 2017** | FLEPPC Newsletter Volume 28 | Number 3

# Florida EPPC

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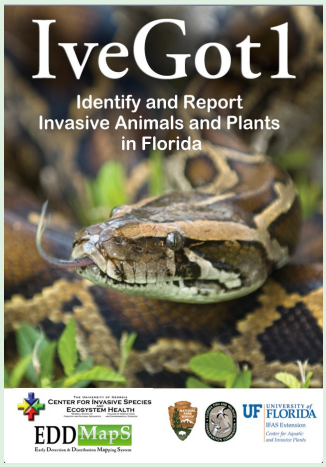


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## MESSAGE FROM THE CHAIR

The abundant seed production of mission grass (*Cenchrus polystachion*) could make this species difficult to control (photo: C. Mason)

Several months ago, as I was heading home after work a strange grass caught my eye. It was growing in dense patches along a stretch of canal that had recently been cleared of all its trees. I pulled over and collected a sample of what turned out to be *Cenchrus polystachion* (missiongrass), a USDA noxious weed recently listed as a Category II plant on the FLEPPC 2017 plant list. Our FLEPPC members on the west coast of Florida are familiar with this species, but to us on the east coast it was a new county record. In fact, it had not previously been documented east of Lake Okeechobee. My immediate assumption was that it had been brought over from west Florida on the equipment doing the tree removal work. However, subsequent surveys revealed scattered clumps of missiongrass along miles of undisturbed canal. It is possible that missiongrass has quietly persisted in this location, hidden within the trees, for a number of years and the earthwork created optimal conditions for the population to explode.

Heavy equipment isn't the only culprit in habitat alteration. Thanks to Irma, there are now going to be many locations that have experienced soil disruption and canopy loss. Add to that a pinch of abundant seed production by a species like missiongrass and a dash of prolonged hurricane force winds and you have the recipe for widespread dispersal and colonization events. I have a list of sites that I am going to monitor closely for the next year in an attempt to detect unwanted plants that might take advantage of the newly disturbed conditions, post-Irma. I'm certain that many of you have similar site lists. Now that the weather is cooling off it's a great time of year to spend some long days in the field. While you're out there this month don't forget about the FISP Fall HalloWeed Count! The purpose of this week-long data collection event is to collect credible invasive plant data in EDDMapS using the IVEGOT1 app. Contact your local CISMA for more information.

Many thanks,
Christen Mason

**HAPPY HALLO-WEEDING!**

## Note from the Secretary:

This Newsletter contains news from our members and highlights from our July 31, 2017 BOD meeting. Our next meeting will be held on Tuesday, October 24, 2017 at 10:00 a.m.

'Like' us on Facebook!

'Follow' us on Twitter!

## Annual Meetings & Upcoming Events

**Florida CISMA 4th Wednesday Monthly Call**
1:30 PM
floridainvasives.org/cismas.cfm

**October 16-19, 2017**
**FAPMS Annual Conference**
Lake Buena Vista, FL
fapms.org

**October 22-26, 2017**
**International Conference on Aquatic Invasive Species (ICAIS)**
Marriott Coral Springs, Ft. Lauderdale, FL
icais.org

**April 4-6, 2018**
**FLEPPC Annual Symposium**
Crowne Plaza - Oceanfront, Melbourne, FL
http://fleppc.org/

## Research and Educational Grants

Julia Morton Invasive Plant Research Grant Program

FLEPPC and FISP CISMA Grant

Kathy Craddock Burks Education Grant Program

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## AN OPULENT, JEWELED MAIDEN SCORNED

Jimmy Lange, Field Botanist | Fairchild Tropical Botanic Garden | jlange@fairchildgarden.org

If you haven't heard of the jeweled maiden fern, *Thelypteris opulenta*, it's probably because this large, aggressive, exotic fern is currently restricted to just a handful of preserves in Miami-Dade County. That doesn't sound so bad, but the problem is that these sites are home to several rare and endangered ferns already struggling to survive in the face of past deforestation, fragmentation, lowering water tables, and myriad other exotic species competing for space. *T. opulenta*, once introduced to an area by spore, can mature extremely quickly relative to our natives and further spread by both spore and creeping rhizome to quickly dominate the herbaceous understory of these limestone-laden habitats (Figure 1). It is already a documented nuisance weed in many parts of the tropics.


Figure 1: Infestations of *Thelypteris opulenta* in Miami-Dade County. (L) Deering Estate, featuring Jennifer Possley (R) Castellow Hammock (photos by the author and Jennifer Possley).

Native to Asia (and interestingly classified as endangered by IUCN), *T. opulenta* was first discovered in Florida – where it has escaped from cultivation – by Don Keller in the late 80s while surveying all over South Florida for rare and unusual ferns, particularly the rare and mysterious *T. patens*. He discovered roughly a dozen *T. opulenta* in "a small tree preserve near the Sears store in Cutler Ridge". It has since been found in at least three other preserves, and has reached problematic levels in at least one. Areas where it is found typically are abundant with other fern species, many quite similar to the untrained eye, and identification can be problematic. We'll use this as an opportunity to use some fern jargon, and hopefully make all of us a bit more comfortable with our cryptogamic friends (and enemies).

*T. opulenta* can be confused with several of our native ferns, but I'll discuss two here. *T. opulenta* resembles the state-threatened Abrupt-tipped maiden fern (*T. augescens*) with its relatively narrow pinnae (leaflets of fronds)

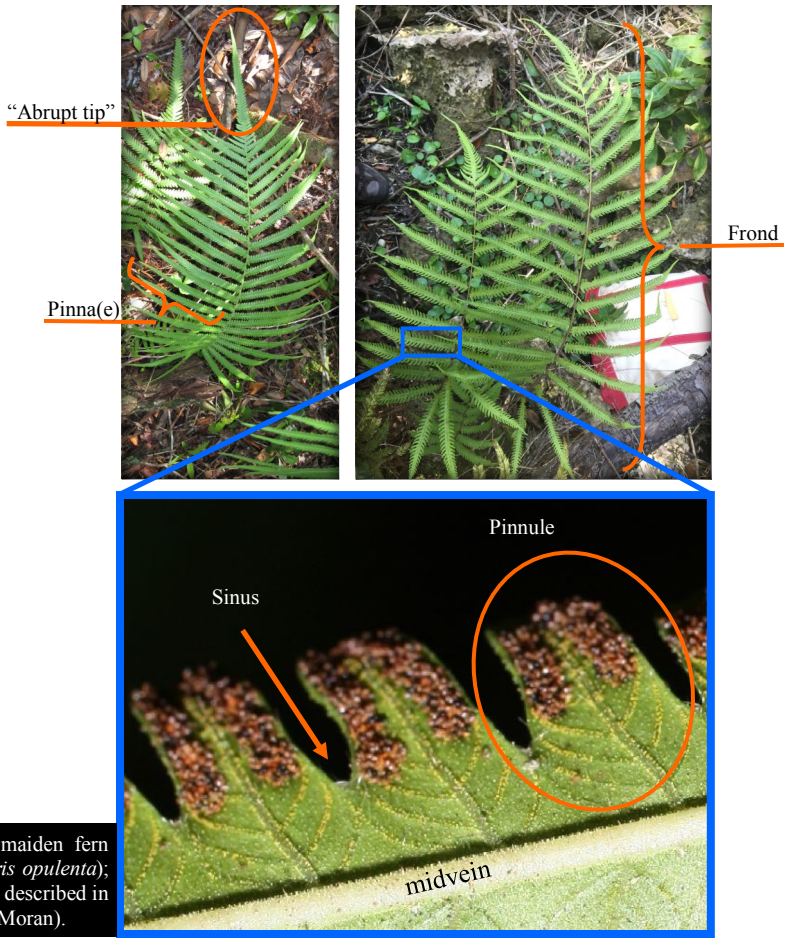



Figure 2: Clockwise top left to right: Abrupt-tipped maiden fern (*Thelypteris augescens*); jeweled maiden fern (*Thelypteris opulenta*); and close-up of *T. opulenta* pinna. Notice terminology as described in text (photos by Jennifer Possley and close-up by Robbin Moran).

but lacks the clearly abrupt-tip. *T. opulenta* is also a larger plant with the pinnae typically further apart, and the sinus (meeting point) of the pinnules (leaf-like lobes of pinnae) is closer to the midvein of the pinnae (phew!), giving it a more saw-like appearance (Figure 2).

Due to its size, it may also be confused with the state-endangered Florida tree fern, *Ctenitis sloanei*, but can easily be distinguished by being pinnate-pinnatifid (bi-pinnately compound with pinnule lobes on pinnae, or "pinnate-a-bit") when mature rather than tri-pinnate, i.e. not merely lobed, but pinnately divided pinnae (Figure 3). The defining characteristic, however, of *T. opulenta*, that which gives it the descriptive moniker "jeweled" and the epithet meaning rich and luxurious, is the presence of small, yellow glands that litter the underside of the leaves, particularly on the veins (Figure 2 and 4). You will likely need a hand lens to see them, but they are your best bet for definitively identifying *T. opulenta*. You are now trained to be on the lookout!

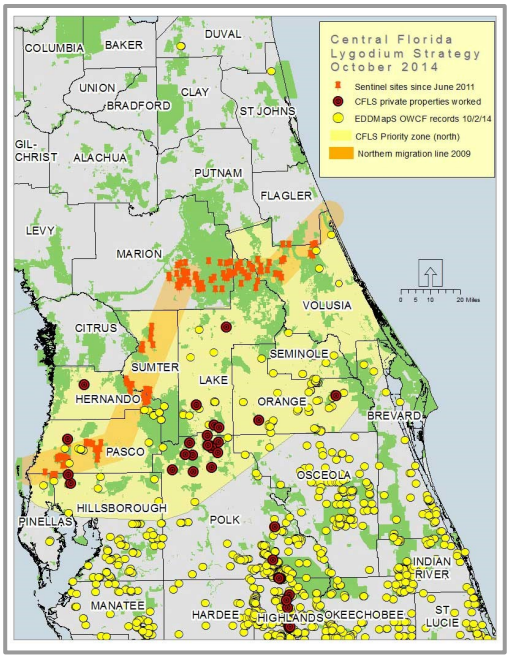
Figure 3: (C-L) Tri-pinnate *Ctenitis sloanei*; (C-R) pinnate-pinnatifid *Thelypteris opulenta*; (C-B) once-pinnate *Nephrolepis* exaltata (photo by Jennifer Possley).

Figure 4: 63x magnification of the decidedly lavish glands of *Thelypteris opulenta*. (photo by Jack Hahn).

## UPDATE: TNC'S CENTRAL FLORIDA LYGODIUM STRATEGY

Cheryl Millet, Biologist & Project Manager | The Nature Conservancy | cmillett@tnc.org

After 12 years, the sun has set on the Central Florida Lygodium Strategy, but the effort to get partners looking for Early Detection on the northern edge of invasive Old World climbing fern's range continues through raised awareness via Cooperative Invasive Species Management Areas (CISMAs). Rapid Response on public conservation lands continues through The Florida Fish and Wildlife Conservation Commission's (FWC) Early Detection Rapid Response (EDRR) Strike Team in CISMAs where it is on the EDRR list. The private lands treatment work has ended, with the last private land treated and then followed up with a biocontrol moth and mite release May 2017. This effort at raising awareness and getting treatments on public lands complemented by partner funds treating on private lands did a remarkably good job at keeping this remarkably tenacious invasive at bay for a good long time, but the past two years' warm, wet winters that allowed it to grow and remain inaccessible year-round finally made the effort less strategic. We will continue to raise awareness and advocate for continued treatment funding, but we will no longer lead this effort. May our partners and biocontrols be successful! Click on the link to learn how to Identify, Find and Kill Old World Climbing Fern.




Click on the map to enlarge the image.

## LEGISLATIVE COMMITTEE SENDS LETTER OF CONCERN TO COMMISSIONER ADAM PUTNAM

Deah Lieurance, IFAS Assessment Coordinator | University of Florida, Center for Aquatic & Invasive Plants | dmlieurance@ufl.edu

On May 24, 2017 the letter below was prepared and sent to Adam Putnam, Commissioner Florida Department of Agriculture and Consumer Services (FDACS), regarding our concern for the invasive potential of bioenergy crops in the state of Florida on behalf of the following organizations (Florida Exotic Pest Plant Council, Florida Invasive Species Partnership, Florida Native Plant Society, Florida Wildlife Federation, Invasive Plant Management Association, National Environmental Coalition on Invasive Species, Center for Invasive Species Prevention, Natural Areas Association, National Association of Invasive Plant Councils, National Wildlife Federation). Please refer to p. 10 of this newsletter for the references:

As groups who care deeply about the issue of invasive species in Florida, we are particularly concerned about the potential for bioenergy crops to be invasive. Florida has one of the strongest state permitting programs in the country when it comes to non-native plantings, and we are very appreciative of the work that the Florida Department of Agriculture & Consumer Services (FDACS) does to protect Florida businesses and ecosystems from the threat of invasive species. However, we do have some issues to bring to your attention regarding the permitting of species with a high risk of invasion, as assessed by the University of Florida's Institute for Food and Agriculture Sciences (UF/IFAS).

In particular, we are concerned that FDACS has issued permits for the company OnlyMoso to grow *Phyllostachys edulis*. This variety of bamboo is being promoted for use in bioenergy, fiber, and food products, particularly for land owners who are eagerly looking to replace citrus crops lost to Greening. However, in 2013 the UF/IFAS Assessment of Nonnative Plants in Florida's Natural Areas found that *P. edulis* poses a high potential for invasion.[1] *Phyllostachys* species are characterized by aggressive vegetative reproduction via rhizomes, which grow quickly and spread horizontally from underground.[2] Planting these species near waterways would be especially problematic by providing a vector for dissemination to areas downstream, leading to escape and invasion of natural areas.[3] Established bamboo can be difficult to eradicate; rhizomes that remain in the ground after mechanical removal can still re-sprout.[4] Our understanding is that *P. edulis* is currently only permitted to grow on a few limited plots of land. **Given the high risk of this species escaping cultivation and the difficulty in eradicating it, we ask that FDACS not expand or renew this permit. Regarding existing plantings, we ask that FDACS monitor the permitted area for expansion from those plantings and prepare a clear management and control plan if spread is observed**.

Another species of concern is *Millettia pinnata*, also known as "pongamia". It is unclear whether cultivation of *M. pinnata* has been permitted in Florida. The company, TerViva Inc., has already planted pongamia, as documented by the Wall Street Journal, "The startup, which has planted pongamia on some 170 acres since 2012, plans to put in at least another 1,000 acres of trees in the next 18 months".[5] Like *P. edulis*, UF/IFAS has predicted *M. pinnata* poses a high risk for invasion.[6] **We ask that FDACS verify whether *M. pinnata* has been permitted to grow in Florida, and whether there is a bond, monitoring, and control plan in place to protect from potential spread**.

*Eucalyptus grandis* is another species that is being evaluated for use as a bioenergy feedstock, and one that poses a high risk for invasion in Florida.[7] FDACS rule "5B-57.011 Non-Native Species Planting Permits" specifically exempts *E. grandis* from requiring a permit, despite its potential risk.[8] UF/IFAS underwent a careful process to determine best management practices for limited and specified uses of *E. grandis* to prevent invasion, such as harvesting of biomass prior to seed development.[9] **We recommend that *E. grandis* not be exempted, but be permitted only under these identified uses.**

The UF/IFAS' Assessment of Nonnative Plants in Florida's Natural Areas is a scientific, empirical, and fact-driven tool. The assessment accurately predicts invasiveness 92% of the time, providing an incredibly effective method for screening out risky crops.[10] As groups and individuals concerned about the health and sustainability of Florida's ecosystems, we find it alarming that these crops were identified as high-risk and are still being cultivated. The undersigned groups strongly urge FDACS to adhere to UF/IFAS' findings when making a determination on permitting for new cultivars. The results of this tool should be utilized to simplify the FDACS decision-making process and increase procedural transparency for the people of Florida.

Many of today's most problematic invasive plants—from melaleuca to Old World climbing fern—were intentionally imported and propagated for horticultural, agricultural, conservation, and forestry purposes.[11, 12] Florida is no stranger to invasive species and the economic drain they impose on the state. The agricultural losses from invasive plants, animals, and diseases total an estimated $179 million every year in Florida,[13] not to mention the estimated $90 million the state spends

on managing these species in a single year.[14] Given that Florida is already engaged in an invasive species crisis, it is particularly important to take a precautionary approach to introducing new species. FDACS should take swift measures to prevent the spread of *P. edulis, M. pinnata,* and *E. grandis*. In addition, this coalition would like to recommend several ways FDACS can increase its ability to safeguard against invasive species:

1) **Evaluate risk of invasion**: The UF/IFAS Assessment should be used to evaluate crops that have not already been identified as low-risk species. Although this will require budgeting for new species analyses, this practice can concurrently prevent agency costs associated with invasion or public outcry, such as regulatory review and public input processes. FDACS can further provide regulatory clarity by establishing a "clean list" or "white list" of species that the UF/IFAS Assessment finds to pose low-risk of invasion.

2) **Close the two acre loophole**: FDACS policy only requires permits for crops grown on two or more acres of land. This limits the agency's authority over invasive species. At this point in time, any number of invasive species can be grown on plots under two acres. FDACS should close this loophole to make sure that any plant in Florida soil will not jeopardize the state's ecosystems, agriculture, or wildlife.

3) **Implement enforcement provisions**: Beyond legal liability, FDACS authority should include punitive measures when necessary. The ability to revoke privileges, like agriculture exemption from property taxes, would help FDACS deter individuals and companies from violating permit requirements.

4) **Take precautions for invasion**: FDACS currently requires a surety bond in case a grower is unable to eradicate a crop. However, the bond only covers eradication on land that has been permitted, omitting coverage in the case of escape. Surety bond coverage should include both permitted land and surrounding areas. The permitting process should also include creating a plan to eradicate plants that escape.

*Phyllostachys edulis* grove (photo: Bamboo Gardens of Louisiana)

*Millettia pinnata* trees in landscape (photo: S.K. Sar)

Artist's rendition of a *Eucalyptus grandis* plantation (photo: Veracel/Brazil)

**Minutes from FLEPPC Board of Directors Meeting & Conference Call**
**Recorded by Aimee Cooper (FLEPPC Secretary) | July 31, 2017, 2:00 p.m.**

***ADMINISTRATIVE***

**Call to Order/Roll Call**: 2:00 p.m.

ATTENDING (*Officers*): Karen Brown (Treasurer), Aimee Cooper (Secretary), Jimmy Lange (2nd-year & Chair-Elect) Christen Mason (Chair), Sherry Williams (Past-Chair); (*Board of Directors*): Kris Campbell (2nd-year), Mike Middlebrook (2nd-year), Cody Miller (2nd-year), Katherine Murray (1st-year), Gregg Walker (2nd-year); (*At-large Members*): Gayle Edwards, Sarah Laroque, Deah Lieurance. ABSENT: Ruark Cleary (Officer, with notice), **Brian Lockwood** (1st year, without notice), Erick Revulta (1st year, with notice), **Craig van der Heiden** (1st year, without notice).

***OFFICER REPORTS***

**Chair Activities/Correspondence, Christen Mason**
Coordination continues with Max Broad (National Wildlife Federation) regarding potential modifications to FDACS permitting of non-native plants for biomass. Max is working on setting up a meeting sometime in the next month with FDACS to discuss in person.

There were multiple emails and phone calls this quarter about problematic plants in peoples' yards/neighborhoods. Bamboo, Australian pine, waterlilles (native and non-native) and earleaf acacia were some of the plants that folks inquired about. One email was from a gentleman that wanted us to know that as someone without extensive plant knowledge, our plant list is hard to navigate. He suggested thumbnails next to each plant so people could quickly scan the list for familiar plants. I thanked him for his input and told him that we're hoping to revamp the website and will take his suggestion into consideration.

Nancy Smith (Eckert College) met her fundraising goal for CAL-IPC and FLEPPC. She finished in the top 20% for her age in the San Francisco marathon.

**Treasurer's Report, Karen Brown**
Bank balances (July 31, 2017): $43,000 in combined checking and savings, with savings earning $0.35/month. We earned $8,000; $2,000 from the chance drawing & silent auction went to the scholarship fund.

**Secretary's Report, Aimee Cooper**
The minutes from our April 2017 meeting were approved by the BOD via email. These minutes were drafted into our Summer 2017 FLEPPC Newsletter that was distributed on Tuesday, July 25. **Please remember**: any success stories, upcoming projects, ongoing projects, events, news releases, photos, memorials, etc. that you would like to see in the newsletter, forward them to me at coopera@stlucieco.org.

***COMMITTEE REPORTS***

**Bylaws, Mike Middlebrook**
Karen motioned to have Mike serve as our new Chair of the Bylaws Committee; the motion was seconded by Gregg Walker, and accepted unanimously by the BOD.

**Finance, IMMEDIATE VACANCY**
An email was distributed to the BOD by Christen requesting their vote to accept/reject the FY2018 Budget on July 31, 2017.

**Grants**
**Research, Jim Cuda**
On 7 June 2017, Jim received a request from Past Chair Sherry Williams for some data on past research grants that had been funded by FLEPPC. According to his records, FLEPPC has funded between 8-11 grants from 2010-2017. There are no data for years 2011-2013. To date, FLEPPC has awarded $15,000 for student research grants. This figure may be higher if the dollar amounts for 2011-2013 can be determined.

**Legislative, Deah Lieurance**
In a discussion with Eugene Kelly (FNPS) about listing species with FDACS , a total of eight (8) species were ranked. The first four (4) species that will be petitioned for listing are Japanese honeysuckle, nandina, sword fern, and cat's claw vine.

On May 24, 2017 a letter was prepared and sent to Adam Putnam, Commissioner Florida Department of Agriculture and Consumer Services (FDACS), regarding our concern for the invasive potential of bioenergy crops in the state of Florida. The letter was written on behalf of the following organizations: Florida Exotic Pest Plant Council, Florida Invasive Species Partnership, Florida Native Plant Society, Florida Wildlife Federation, Invasive Plant Management Association, National Environmental Coalition on Invasive Species, Center for Invasive Species Prevention, Natural Areas Association, National Association of Invasive Plant Councils, National Wildlife Federation. See p. 5 of this newsletter to view the letter.

**Membership, Gayle Edwards**
Our current membership roster shows 144 active members. Gayle regularly sends out reminders to folks who have let their membership lapse.

**Merchandise, Jimmy Lange (Christen Mason, Sherry Williams, Aimee Cooper)**
$800.00 was spent purchasing new totes and hats for the 2017 symposium. We were able to recover $728.00; however we have plenty of totes and hats for the 2018 symposium, as well as past merchandise that has been in the possession of our previous Merchandise Chair, Billy Snyder. In addition to the merchandise we have already, we have budgeted $500.00 to purchase coffee mugs with the 2017 Walking Weeds symposium logo theme without the year, as this logo theme was a favorite among the attendees.

**Symposium Planning/Program, Karen Brown & Sherry Williams**
The 2018 FLEPPC Symposium will be held April 4-6, 2018. The BOD meeting will be held the afternoon of April 3, 2018. Following a planning conference call with the BOD, it was decided that we would have a keynote speaker, a short plenary session (3 speakers), and finally a panel discussion on the first afternoon of our conference (April 4, 2018). We will be focusing on range expansion of invasive species due to weather factors. The Keynote will be discussing this topic on a broad scale and we would like to have the rest of the speakers/panel members be Florida-centric land managers and/or researchers.

***Liaisons with other organizations***

**NAIPC Liaison, Sherry Williams**
Remember to join the quarterly webinars. Visit the na-ipc.org for details.

***Operations***
An ad-hoc website committee held its first meeting on June 7 to discuss the desired changes and updates, and the potential cost. Chuck Bargeron (UGA) estimated that it would cost about $2,000 to complete the website overhaul. More details will be provided once a final proposal has been developed.

***Task Force Reports***

**Brazilian Pepper, Jim Cuda**
On June 16, 2017 Jim received an email from Robert Tichenor, USDA APHIS Biocontrol Agent Permitting Office, in response to his request for the status of the release permit for the leaf galling psyllid *Calophya latiforceps* approved by the TAG in April 2016. According to Mr. Tichenor, APHIS is still waiting for the Biological Assessment concurrence letter from the US FWS that was requested in December 2016. Once APHIS receives the letter from the US FWS, then it will take another six (6) months to one (1) year to complete the NEPA Environmental Assessment. It appears that a release permit would not be issued until sometime in 2018.

***Meeting Adjourned & Scheduling of Board Meeting***

The meeting was adjourned at 4:03 p.m. The next meeting will be held on October 24 at the Disney Wilderness Preserve. Unfortunately this meeting is size-limited and will be offered to the BOD and Committee Chairs first. As always, anyone and everyone is encouraged to join via conference call. An announcement with call-in information and meeting agenda will be distributed once things are finalized.

**Additional Information**

Correspondence from Sherry Williams to Jimmy Lange (cc: Christen Mason): We have the non-native *Macrothelypteris torresiana* which has completely invaded most of our hydric hammocks in Seminole and Orange Counties and is competing heavily with the native bipinnate cuplet fern *Dennstaedtia bipinnata*, the endangered Okeechobee gourd *Cucurbita okeechobeensis*, and several *Pecluma* species. No one has really looked closely at this species in our area. Any information from south Florida?

New non-native sedges *Scleria microcarpa*, *Scleria eggersiana*, *Cyperus blepharoleptos*, and *Luziola subintegra* (another Caribbean spp.) have appeared in natural areas. It isn't clear if their arrivals are due to natural range expansion or to human-mediated events. This distinction will likely determine how land managers choose to treat these new species and could influence restoration plans. If and how climate change influences range expansion of Caribbean species and what we should expect for the future in Florida could be a great discussion to have at the symposium.

The entire collection of *Wildland Weeds* magazines has been added to a federal grant funded project called Expanding Access to Biodiversity Literature. The aim of this grant is to enhance the collection of the Biodiversity Heritage Library (BHL) through the addition of unique and valuable content. BHL is a consortium of major natural history museum libraries, botanical libraries, and research institutions that cooperate to digitize and make accessible the legacy biodiversity literature. Together, the consortium accounts for over two million volumes of biodiversity literature collected over 200 years. Open access to the resources in the Biodiversity Heritage Library supports the work of scientists, researchers, and students in their home institutions and throughout the world.

# References


A. Citations from Legislative Committee Letter to FDACS:

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