



FDACS-P-00124

October - December 2017

Volume 56, Number 4

TRI-OLOGY

A PUBLICATION FROM THE DIVISION OF PLANT INDUSTRY, BUREAU OF ENTOMOLOGY, NEMATODOLOGY, AND PLANT PATHOLOGY
Division Director, Trevor R. Smith, Ph.D.



BOTANY

Providing information about plants:
native, exotic, protected and weedy



ENTOMOLOGY

Identifying arthropods, taxonomic
research and curating collections



NEMATOLOGY

Providing certification programs and
diagnoses of plant problems



PLANT PATHOLOGY

Offering plant disease diagnoses
and information



Florida Department of Agriculture and Consumer Services • Adam H. Putnam, Commissioner



Osmunda cinnamomea L., cinnamon fern
 Photograph courtesy of Patti J. Anderson, DPI

ABOUT TRI-OLGY

The Florida Department of Agriculture and Consumer Services Division of Plant Industry's Bureau of Entomology, Nematology, and Plant Pathology (ENPP), including the Botany Section, produces TRI-OLGY four times a year, covering three months of activity in each issue.

The report includes detection activities from nursery plant inspections, routine and emergency program surveys, and requests for identification of plants and pests from the public. Samples are also occasionally sent from other states or countries for identification or diagnosis.

HOW TO CITE TRI-OLGY

Section Editor. Year. Section Name. P.J. Anderson and G.S. Hodges (Editors). TRI-OLGY Volume (number): page. [Date you accessed site.]

For example: S.E. Halbert. 2015. Entomology Section. P.J. Anderson and G.S. Hodges (Editors). TRI-OLGY 54(4): 9. [Accessed 5 June 2016.]

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ACKNOWLEDGEMENTS

The editors would like to acknowledge the work of all those who contributed information and explanations by providing data, photographs or text, and by carefully reading early drafts.







We welcome your suggestions for improvement of TRI-OLGY. Please feel free to contact the [helpline](#) with your comments at 1-888-397-1517.

Thank you,

Gregory Hodges, Ph.D.
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 Assistant Director, Division of Plant Industry

Patti J. Anderson, Ph.D.
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 Botanist, Division of Plant Industry

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Cover Photo

Bactrocera correcta (Bezzl), guava fruit fly.
 Photograph courtesy of Gary J. Steck, DPI



HIGHLIGHTS



1 *Pseudomonas savastanoi* pv. *savastanoi* (olive knot disease) was found on two-year-old olive trees (*Olea europaea*) in a Gilchrist County nursery. The trees displayed typical symptoms of galls along the stems and tumorous growths at the root line. The sample originated in California through a nursery in Hillsborough County.



1 - *Pseudomonas savastanoi* pv. *savastanoi* (olive knot disease) on a galled stem of infected *Olea europaea* (olive).
Photograph courtesy of Susan B. Youngblood, DPI

2 *Hemicycliophora robbinsi* Van den Berg *et al.*, 2018, a sheath nematode, a new species, recently identified after long-term studies of sheath nematodes (*Hemicycliophora* sp.) occurring on grasses.

3 *Trichostema dichotomum* L. (forked bluecurls), an annual (sometimes perennial) plant, can be found in beaches, sandhills, flatwoods and mesic forests in the eastern third of the United States from Texas to Maine and the Canadian provinces of Quebec and Ontario. It can be a beautiful addition to a native plant garden.



2 - Mixed weedy grasses, including *Andropogon virginicus*, in a typical site for *Hemicycliophora robbinsi* infestation.
Photograph courtesy of Forest and Kim Starr, [Wikimedia](#)

4 *Asturodes fimbriauralis* (Guenée), a crambid moth, a new Continental USA record. This species is native to Central America and the Greater Antilles. The caterpillars feed on *Colubrina* and *Gouania* (Rhamnaceae) in the tropics.



3 - *Trichostema dichotomum* (forked bluecurls).
Photograph courtesy of Roger Hammer, [Atlas of Florida Plants](#)



4 - *Asturodes fimbriauralis* (Guenée), a crambid moth.
Photograph courtesy of James E. Hayden, DPI





BOTANY

Compiled by Patti J. Anderson, Ph.D.

This section identifies plants for the Division of Plant Industry, as well as for other governmental agencies and private individuals. The Botany Section maintains a reference herbarium with over 12,000 plants and 1,400 vials of seeds.

QUARTERLY ACTIVITY REPORT

	OCTOBER- DECEMBER	2017 - YEAR TO DATE
Samples submitted by other DPI sections	1,116	4,264
Samples submitted for botanical identification only	122	527
Total samples submitted	1,238	4,791
Specimens added to the Herbarium	149	444

Some of the samples received for identification are discussed below:

1 *Argyrea nervosa* (Burm. f.) Bojer (baby woodrose, wooly morning-glory, elephant creeper), from a genus of about 130 species in the plant family Convolvulaceae, native from the Indomalesia bioregion to Australia. This species has been introduced to warm regions around the world, including Hawaii and the Caribbean, as well as Florida. This vine is considered a weed in Australia where it grows to 10 m in length and can overtop trees. The large, cordate leaves can grow up to 30 cm in length and width. The upper surface of the leaf is glabrous, while the underside is covered by a thick, silvery gray tomentum. The name *Argyrea* refers to this silver color (based on *argyr*, the Greek word for silver). The tubular flowers to 7.5 cm long are produced in dense clusters. The corollas are pink to nearly white with a deep purple throat. The fruits are tough, globose berries attached to a persistent calyx and are similar to, but smaller than, the better known woodrose, *Merrimia dissecta*, found throughout Florida. The plant is known to produce psychoactive chemicals as well as beautiful flowers. (Miami-Dade County; B2017-410; Olga Garcia, USDA; 5 October 2017.) (Mabberley 2017; Staples and Herbst 2005; Wunderlin and Hansen 2011; https://keyserver.lucidcentral.org/weeds/data/media/Html/argyrea_nervosa.htm [accessed 14 December 2017].)



1a - *Argyrea nervosa* (elephant creeper) leaves with silvery gray tomentum. Photograph courtesy of Forest Starr and [Kim Starr](#)



1b - *Argyrea nervosa* (elephant creeper) flower. Photograph courtesy of Loi Miao, [Wikipedia](#)



2 *Smilax bona-nox* L. (saw greenbrier, zarzaparrilla, catbrier)

from a genus of about 260 tropical and temperate species in the family Smilacaceae. In the United States, this species is native in the South and Southeast from Texas to Delaware. In Florida, *S. bona-nox* is found in almost every county, but this sample represents the first time it's been documented in Broward County. This evergreen vine climbs by tendrils and has underground stolons and tuberous rhizomes. The stems become woody with age and are usually armed with prickles, at least near the base where the stem also appears scurfy because of its orange to tan scales. Leaves are alternate along the vine and quite variable in shape and color. They might have varying amounts of white mottling on the leaf blade, but can be solid, pale green over both surfaces. The shape varies from broadly ovate to lanceolate-ovate or hastate, and leaf bases are frequently lobed. The thickened margins may be entire or spinous. Inflorescences are axillary umbels with 10–15 (and occasionally more) flowers. Flowers are small, 3–4.5 mm across, unisexual and pale green. Fruits are globose, shiny or dull black berries formed when pistillate (female) flowers are pollinated. Plants also spread by runners in the flatwoods, flood plains, hammocks and disturbed areas where they can grow rampantly. (Broward County; B2017-425; Jake M. Farnum, CAPS; 16 October 2017.) (Godfrey 1988; Nelson 2011; http://efloras.org/florataxon.aspx?flora_id=1&taxon_id=242101927 [accessed: 15 December 2017].)



2 - *Smilax bona-nox* (saw greenbrier) with prickles around leaf margin. Photograph courtesy of Keith Bradley, [Atlas of Florida Plants](#)

3 *Trichostema dichotomum* L. (forked bluecurls),

from a genus of about 16 North American species in the plant family known as Labiatae or Lamiaceae. This annual (sometimes perennial) plant can be weedy in the beaches, sandhills, flatwoods and mesic forests where it is usually found throughout the eastern third of the United States from Texas to Maine and the Canadian provinces of Quebec and Ontario. The 30-80 cm tall stems branch several times and are covered with tiny, glandular hairs. The opposite leaves are ovate to oblong and as large as 6 cm long and 2 cm wide, but not more than five times as long as wide. The inflorescence is terminal, diffuse and many-flowered, composed of helicoid cymes, but resembling a panicle. Flowers have a two-lipped calyx with two short lobes and three longer ones and a blue and white bilabiate corolla. Its lower lobe is mainly white with blue dots and is about twice as long as the other four mostly blue lobes. The common name, "bluecurls," was inspired by the four elongated, blue stamens of the flower with their arching and coiled filaments. The fruit is a schizocarp (a dry fruit that splits at maturity) with four rough-textured nutlets held within the persistent calyx. Unlike many members of the mint family, this species is not prized for its medicinal or culinary uses, but bees make use of its nectar and pollen. The intense blue flowers of this Florida native make it a dramatic addition to wildflower gardens throughout the state, as well as a lovely late summer or early fall surprise in natural areas of almost every county in Florida. (Madison County; B2017-407; Michael Bentley; 3 October 2017 and Marion County; B2017-447; Tavia L. Gordon; 31 October 2017.) (Deyrup *et al.* 2002; Hammer 2016; <https://plants.usda.gov/core/profile?symbol=TRDI2> [accessed: 14 December 2017]; http://www.missouriplants.com/Blueopp/Trichostema_dichotomum_page.html [accessed: 14 December 2017].)



3 - *Trichostema dichotomum* (forked bluecurls). Photograph courtesy of Roger Hammer, [Atlas of Florida Plants](#)




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- Hammer, R. 2016.** Central Florida wildflowers: a field guide to wildflowers of the Lake Wales Ridge, Ocala National Forest, Disney Wilderness Preserve, and more than 60 state parks and preserves. Falcon Press, Guilford, Connecticut. 234 p.
- Mabberley, D.J. 2017.** Mabberley's plant-book: a portable dictionary of plants, their classification and uses, 4th edition. Cambridge University Press, New York, New York. 1,102 p.
- Nelson, G. 2011.** Botanical keys to Florida's trees, shrubs, and woody vines. Pineapple Press, Sarasota, Florida. 207 p.
- Staples, G.W. and D.R. Herbst. 2005.** A tropical garden flora: plants cultivated in the Hawaiian Islands and other tropical places. Bishop Museum Press, Honolulu, Hawaii. 908 p.
- Wunderlin, R.P. and B.F. Hansen. 2011.** Guide to the vascular plants of Florida, 3rd edition. University Press of Florida, Gainesville, Florida. 783 p.

BOTANY IDENTIFICATION TABLE

The following table provides information about **new county** records submitted in the current volume's time period. The table is organized alphabetically by collector name. The full version of all botany samples for the period is downloadable as a [PDF](#) or [Excel Spreadsheet](#).

NEW RECORD	COLLECTOR 1	COLLECTOR 2	COUNTY	SAMPLE NUMBER	COLLECTION DATE	GENUS	SPECIES
	Jake M. Farnum, CAPS		Broward	B2017-425	October 16, 2017	<i>Smilax</i>	<i>bona-nox</i> L.





ENTOMOLOGY

Compiled by Susan E. Halbert, Ph.D.

This section provides the division's plant protection specialists and other customers with accurate identifications of arthropods. The Entomology Section also builds and maintains the arthropod reference and research collection (the Florida State Collection of Arthropods with over 9 million specimens) and investigates the biology, biological control and taxonomy of arthropods.

QUARTERLY ACTIVITY REPORT

OCTOBER - DECEMBER

Samples submitted	1,179
Lots identified	1,476
Specimens identified	11,527

2017 - YEAR TO DATE

Samples submitted	4,937
Lots identified	6,586
Specimens identified	55,528



1 - *Asturodes fimbriauralis* (Guenée), a crambid moth. Photograph courtesy of James E. Hayden, DPI

1 *Asturodes fimbriauralis* (Guenée), a crambid moth, a new Continental USA record. This species is native to Central America and the Greater Antilles. There are similar undescribed species in Central America, but this appears to be true *A. fimbriauralis*, based on specimens previously identified in the FSCA by Dr. M.A. Solis. One specimen was collected on Key Largo. These attractive yellow moths have also been reported, without follow-up, on the South Florida mainland. The caterpillars feed on *Colubrina* and *Gouania* (Rhamnaceae) in the tropics (Janzen and Hallwachs 2009), so larvae should be sought on representatives of those genera in South Florida. (Monroe County; E2017-4802; James T. Troubridge, FSCA Research Associate; 25 January 2017.) (Dr. James E. Hayden.)



2 - *Glyphodes rubrocinctalis*, (Guenée), a crambid moth. Photograph courtesy of James E. Hayden, DPI

2 *Glyphodes rubrocinctalis* (Guenée), a crambid moth, a new Continental USA record. A specimen was collected on the same occasion as *Asturodes fimbriauralis*. Also like the latter, *G. rubrocinctalis* comprises a species complex distributed in Central and South America, and Cuba. The larvae feed on a species of Apocynaceae in the tropics (Janzen and Hallwachs 2009). Larval feeding on latex-bearing plants, especially Apocynaceae and Moraceae, is common in *Glyphodes* and related genera. (Monroe County; E2017-4802; James T. Troubridge, FSCA Research Associate; 25 January 2017.) (Dr. James E. Hayden.)



3 *Melanaspis leivasi* Costa Lima, leivasi scale, a Continental USA record. The leivasi scale is known from Brazil, Colombia, Guatemala, Mexico and Panama, but previously this scale was not known to occur in the United States. There are two species of *Melanaspis* known from Florida: obscure scale, *M. obscura* (Comstock), and gloomy scale, *M. tenebricosa* (Comstock), both serious pests of landscape trees. Therefore, we consider *M. leivasi* to be a potential pest of concern in Florida. The sample was initially identified as *Melanaspis* sp. pending examination of additional material. Mark J. Aubry (USDA-APHIS-PPQ) sent more samples from the same host, and they were all confirmed as *M. leivasi* by Dr. Douglas R. Miller (retired USDA identifier) and myself. The samples also were sent for further confirmation to Dr. Gregory A. Evans (USDA-APHIS), Dr. Scott A. Schneider (USDA-SEL) and Dr. Ian C. Stocks (USDA-APHIS). *Melanaspis leivasi* has been found previously on host plants from four families: *Anacardium excelsum*, wild cashew (Anacardiaceae); *Bursera* sp. (Burseraceae); *Ficus* sp. (Moraceae) and *Vitis* sp. (Vitaceae). This sample was found in Florida on strangler fig, *Ficus aurea*. Please see Ahmed and Miller (2017) for more detail. (Palm Beach County; E2017-3765; Mark J. Aubry, USDA-APHIS-PPQ; 27 September 2017). (Dr. Muhammad Z. 'Zee' Ahmed).



3 - *Melanaspis leivasi* infested (a) and uninfested (b) branches of *Ficus aurea*. Photograph courtesy of Muhammad Z. 'Zee' Ahmed, DPI

4 *Brachynoea* sp., a leaf beetle, a new Florida state record. A female specimen of this genus was collected in a multi-lure fruit fly trap hanging in a tamarind tree in Homestead. The genus has two species reported from North Florida, none from South Florida. This specimen belongs to the *insignis* species group, which occurs in Central America, and is characterized in part by the unusual ridges and grooves on the female elytra. Species determination is impossible until a taxonomic revision has been completed on this diverse group of beetles. (Miami-Dade County; E2017-4474; Olga Garcia, USDA; 20 November 2017.) (Dr. Paul E. Skelley.)



4 - *Brachynoea* sp. female. Photograph courtesy of Paul E. Skelley, DPI

5 *Chrysomphalus bifasciculatus* Ferris, bifasciculate scale, a new Florida state record. Bifasciculate scale was found first in California in 1938. Since then, it has been known to occur in several states (Alabama, California, Georgia, Louisiana, Maryland, New Jersey, North Carolina, Oklahoma, South Carolina, Texas and Virginia), including two states bordering Florida. It also was reported from several countries in Asia and South America. The first Florida sample was found on cast-iron plant, *Aspidistra elatior*. Previously, there were only two species of *Chrysomphalus* known to be in Florida, *C. aonidium* and *C. dictyospermi*. The genus *Chrysomphalus* contains polyphagous pests that usually occur on leaves and branches of various fruiting and ornamental plants. Their infestations cause economically significant damage to citrus, coconut palms, date palms, olive trees, cinnamon, mango, banana, avocado, eucalyptus, guava, grape, papaya, and tea all over the world. (Baker County; E2017-4531; M. Jane Echols; 28 November 2017). (Dr. Muhammad Z. 'Zee' Ahmed).



5 - *Chrysomphalus bifasciculatus* on *Aspidistra elatior*. The infestation looks very much like an infestation of Florida red scale, *C. aonidium* on citrus. 1) Infested upper leaf surface of *A. elatior* with an adult female (a) and immature stages (b); 2) the close-up of adult female; 3) dorsal view of adult female without dorsal cover (a) and the ventral view of dorsal cover of adult female. Photograph courtesy of Muhammad Z. 'Zee' Ahmed, DPI



6 *Homaledra n. sp.*, a palm leaf skeletonizer moth, a new Florida state record. This undescribed species has been in Central and North Central Florida for several years. It has been misidentified previously as *Homaledra sabalella* (Chambers), which is native to the southeastern United States. The specimens of this lot are the earliest collected in Florida and deposited in the FSCA, but the species had been reared on cabbage palm in Gainesville in 2010 (Lyle Buss, UF, pers. comm.), and a photograph online hints that it was in Lake County as early as 2006. Conspecific specimens, collected in the 1980s–1990s in southern Texas and donated to the Florida Museum of Natural History, suggest a possible geographic origin. This new species differs from *H. sabalella* in having white forewing veins, different male and female genitalia, and a distinct DNA COI “barcode” sequence. This is the second undescribed invasive *Homaledra* species attacking palms in Florida: the “coconut skeletonizer” that has been in South Florida since 1995, possibly of Caribbean origin, is specifically distinct from *H. sabalella* and the present species in several characters. The species’ distributions and host preferences have yet to be clarified. The larvae make tubes of frass underneath palm leaves and cause cosmetic damage to leaf tissue. (Alachua County; E2017-3844; Ryan G. Fessenden, University of Florida and other University of Florida employees; 30 November 2011.) (Dr. James E. Hayden.)



6 - *Homaledra n. sp.*, a palm leaf skeletonizer moth. Photograph courtesy of James E. Hayden, DPI

7 *Bactrocera correcta* (Bezzi), guava fruit fly, a regulatory incident. A single male specimen was trapped in a Jackson trap baited with methyl eugenol in a guava (*Psidium guajava*) tree in St. Petersburg. Increased trap densities in a 58-square-mile area around the detection site will be maintained, and traps monitored closely for an estimated two life cycles (until approximately 21 April 2018). If more flies are found, trap monitoring will be extended. (Pinellas County; E2017-4836; Linda G. McRay; 19 December 2017.) (Dr. Gary J. Steck.)



7 - *Bactrocera correcta* (Bezzi), guava fruit fly. Photograph courtesy of Gary J. Steck, DPI

REFERENCES

Ahmed, M. Z. and D. Miller. 2017. First continental record of *Melanaspis leivasi* Costa Lima, (Hemiptera: Diaspididae), a leivasi armored scale (suggested common name). Florida Department of Agriculture and Consumer Services, Division of Plant Industry, Gainesville. Entomology Circular No. 437. 4p. www.freshfromflorida.com/content/download/78338/2314234/Melanaspis_leivasi_Costa_Lima_-_Circular.pdf [accessed 17 January 2018].

Janzen, D. H. and W. Hallwachs. 2009. Dynamic database for an inventory of the macrocaterpillar fauna, and its food plants and parasitoids, of Area de Conservación Guanacaste (ACG), northwestern Costa Rica. Hosted by University of Pennsylvania. <http://janzen.sas.upenn.edu>. [accessed 11 January 2018].



🔍 ENTOMOLOGY IDENTIFICATION TABLE

Below are tables with entries for records of new hosts or new geographical areas for samples identified in the current volume's time period, as well as samples of special interest. An abbreviated table, with all the new records, but less detail about them, is presented on this page and another version with more complete data is downloadable as a [PDF](#) or [Excel](#) spreadsheet.

The tables are organized alphabetically by plant host, if the specimen has a plant host. Some arthropod specimens are not collected on plants and are not necessarily plant pests. In the table below, those entries that have no plant information included are organized by arthropod name.

PLANT NAME	ARTHROPOD	ARTHROPOD COMMON NAME	COLLECTOR	RECORD
<i>Abies fraseri</i>	<i>Aspidiotus cryptomeriae</i>	cryptomeria scale	Carolyn P. Hall, P. Karen Coffey, Melanie Cain	REGULATORY INCIDENT
<i>Abies fraseri</i>	<i>Aspidiotus cryptomeriae</i>	cryptomeria scale	Lindsay M. Wheeler	REGULATORY INCIDENT
<i>Abies fraseri</i>	<i>Aspidiotus cryptomeriae</i>	cryptomeria scale	Lindsay M. Wheeler	REGULATORY INCIDENT
<i>Abies fraseri</i>	<i>Chionaspis pinifoliae</i>	pine needle scale	Carolyn P. Hall, P. Karen Coffey, Melanie Cain	REGULATORY INCIDENT
<i>Abies fraseri</i>	<i>Chionaspis pinifoliae</i>	pine needle scale	Melanie Cain	REGULATORY INCIDENT
<i>Abies fraseri</i>	<i>Chionaspis pinifoliae</i>	pine needle scale	Laura Ureta-Cooper	REGULATORY INCIDENT
<i>Abies fraseri</i>	<i>Fiorinia externa</i>	elongate hemlock scale	Carolyn P. Hall, P. Karen Coffey	QUARANTINABLE PEST
<i>Abies fraseri</i>	<i>Fiorinia externa</i>	elongate hemlock scale	Carolyn P. Hall, P. Karen Coffey	REGULATORY INCIDENT
<i>Abies fraseri</i>	<i>Fiorinia externa</i>	elongate hemlock scale	Carolyn P. Hall, P. Karen Coffey, Melanie Cain	REGULATORY INCIDENT
<i>Abies fraseri</i>	<i>Fiorinia externa</i>	elongate hemlock scale	P. Karen Coffey, Melanie Cain	REGULATORY INCIDENT
<i>Abies fraseri</i>	<i>Fiorinia externa</i>	elongate hemlock scale	Carolyn P. Hall, P. Karen Coffey, Melanie Cain	REGULATORY INCIDENT
<i>Abies fraseri</i>	<i>Fiorinia externa</i>	elongate hemlock scale	P. Karen Coffey, Melanie Cain	REGULATORY INCIDENT
<i>Abies fraseri</i>	<i>Fiorinia externa</i>	elongate hemlock scale	Lisa M. Hassell	REGULATORY INCIDENT
<i>Abies fraseri</i>	<i>Fiorinia externa</i>	elongate hemlock scale	Melanie Cain	REGULATORY INCIDENT
<i>Abies fraseri</i>	<i>Fiorinia externa</i>	elongate hemlock scale	Melanie Cain	REGULATORY INCIDENT
<i>Abies fraseri</i>	<i>Fiorinia externa</i>	elongate hemlock scale	Lindsay M. Wheeler	REGULATORY INCIDENT
<i>Abies fraseri</i>	<i>Fiorinia externa</i>	elongate hemlock scale	Lindsay M. Wheeler	REGULATORY INCIDENT
<i>Abies fraseri</i>	<i>Fiorinia externa</i>	elongate hemlock scale	Lindsay M. Wheeler	REGULATORY INCIDENT
<i>Abies fraseri</i>	<i>Fiorinia externa</i>	elongate hemlock scale	Carolyn P. Hall, Melanie Cain	REGULATORY INCIDENT
<i>Abies fraseri</i>	<i>Fiorinia externa</i>	elongate hemlock scale	Carolyn P. Hall, Melanie Cain	REGULATORY INCIDENT
<i>Abies fraseri</i>	<i>Fiorinia externa</i>	elongate hemlock scale	Carolyn P. Hall, Melanie Cain	REGULATORY INCIDENT
<i>Abies fraseri</i>	<i>Fiorinia externa</i>	elongate hemlock scale	Carolyn P. Hall, Melanie Cain	REGULATORY INCIDENT
<i>Abies fraseri</i>	<i>Fiorinia externa</i>	elongate hemlock scale	Carolyn P. Hall, Melanie Cain	REGULATORY INCIDENT
<i>Abies fraseri</i>	<i>Fiorinia externa</i>	elongate hemlock scale	Melanie Cain	REGULATORY INCIDENT
<i>Aleurites fordii</i>	<i>Icerya purchasi</i>	cottony cushion scale	farmer	NEW FLORIDA COUNTY RECORD; NEW FLORIDA HOST RECORD
<i>Aspidistra elatior</i>	<i>Chrysomphalus bifasciculatus</i>	bifasciculate scale	Mary Jane Echols	NEW FLORIDA STATE RECORD
<i>Brassica oleracea</i>	<i>Bemisia tabaci</i> "Q"	sweetpotato whitefly	Lisa M. Hassell	REGULATORY INCIDENT
<i>Brassica oleracea</i>	<i>Bemisia tabaci</i> "Q"	sweetpotato whitefly	Lindsay M. Wheeler, Lisa M. Hassell	REGULATORY INCIDENT
<i>Brugmansia</i> sp.	<i>Scolothrips sexmaculatus</i>	six-spotted thrips	Carolyn P. Hall, Melanie Cain	NEW FLORIDA COUNTY RECORD
<i>Capsicum annuum</i>	<i>Bactericera cockerelli</i>	potato psyllid	Cheryl A. Jones, Kelly K. Douglas	REGULATORY INCIDENT



PLANT NAME	ARTHROPOD	ARTHROPOD COMMON NAME	COLLECTOR	RECORD
<i>Capsicum annuum</i>	<i>Bactericera cockerelli</i>	potato psyllid	Catherine E. White, Dyrana N. Russell-Hughes	REGULATORY INCIDENT
<i>Citrus sinensis</i>	<i>Dieuches armatipes</i>	an African seed bug	Jerri A. Shirey	NEW FLORIDA COUNTY RECORD
<i>Citrus sinensis</i>	<i>Hentzia mitrata</i>	a jumping spider	Mary E. Graham	NEW FLORIDA COUNTY RECORD
<i>Coccoloba uvifera</i>	<i>Athyra</i> sp. cf. <i>ganglio</i> (Hübner)	an erebid moth	Agueda Christina Urbina	NEW FLORIDA COUNTY RECORD
<i>Coriandrum sativum</i>	<i>Autographa californica</i>	alfalfa looper	Catherine E. White	REGULATORY INCIDENT
<i>Cornus alba</i>	<i>Phenacoccus madeirensis</i>	Madeira mealybug	Lindsay M. Wheeler, Lisa M. Hassell	NEW FLORIDA HOST RECORD
<i>Crossandra infundibuliformis</i>	<i>Bemisia tabaci</i> "Q"	sweetpotato whitefly	Lisa M. Hassell	QUARANTINABLE PEST
<i>Dracaena braunii</i>	<i>Lepidosaphes chinensis</i>	lepidosaphes scale	Lindsay M. Wheeler, Lisa M. Hassell	QUARANTINABLE PEST.
<i>Eragrostis elliotii</i>	<i>Balclutha caldwelli</i>	a leafhopper	Travis J. Streeter	NEW FLORIDA HOST RECORD
<i>Eragrostis elliotii</i>	<i>Hysteroneura setariae</i>	rusty plum aphid	Travis J. Streeter	NEW FLORIDA HOST RECORD
<i>Eriobotrya japonica</i>	<i>Deraeocoris sayi</i>	a mirid bug	Carolyn P. Hall	NEW FLORIDA COUNTY RECORD
<i>Eriobotrya japonica</i>	<i>Diphleps unica</i>	a jumping tree bug	Carolyn P. Hall, Tracy L. Wright	NEW FLORIDA COUNTY RECORD
<i>Eriobotrya japonica</i>	<i>Simplicia cornicalis</i>	palm thatch moth	Carolyn P. Hall	NEW FLORIDA COUNTY RECORD
<i>Ficus aurea</i>	<i>Melanaspis leivasi</i>	leivasi scale	Mark J. Aubry	NEW US CONTINENTAL RECORD
<i>Helianthus annuus</i>	<i>Agallia albidula</i>	a leafhopper	Travis J. Streeter	NEW FLORIDA HOST RECORD
<i>Helianthus annuus</i>	<i>Protalembrella brasiliensis</i>	Brasilian leafhopper	Travis J. Streeter	NEW FLORIDA HOST RECORD
<i>Ipomoea batatas</i>	<i>Paratachardina pseudolobata</i>	lobate lac scale	Lindsay M. Wheeler, Lisa M. Hassell	NEW FLORIDA COUNTY RECORD
<i>Lactuca sativa</i>	<i>Deltocephalus fuscineruosus</i>	a leafhopper	Catherine E. White, Dyrana N. Russell-Hughes	REGULATORY INCIDENT
<i>Lactuca sativa</i>	<i>Deltocephalus fuscineruosus</i>	a leafhopper	Catherine E. White	REGULATORY INCIDENT
<i>Lactuca sativa</i>	<i>Deltocephalus fuscineruosus</i>	a leafhopper	Eric M. Dougherty	REGULATORY INCIDENT
<i>Lactuca sativa</i>	<i>Liriomyza langei</i>	California pea leafminer	Catherine E. White	REGULATORY INCIDENT
<i>Lactuca sativa</i>	<i>Liriomyza langei</i>	California pea leafminer	Eric M. Dougherty	REGULATORY INCIDENT
<i>Lactuca sativa</i>	<i>Liriomyza langei</i>	California pea leafminer	Catherine E. White, Dyrana N. Russell-Hughes	REGULATORY INCIDENT
<i>Lactuca sativa</i>	<i>Nasonovia ribisnigri</i>	currant-lettuce aphid	Eric M. Dougherty	REGULATORY INCIDENT
<i>Lavandula multifida</i>	<i>Tetranychus ludeni</i>	spider mite	Lindsay M. Wheeler	REGULATORY INCIDENT
<i>Lavandula</i> sp.	<i>Bemisia tabaci</i> "Q"	sweetpotato whitefly	Lindsay M. Wheeler	QUARANTINABLE PEST
<i>Liriope muscari</i>	<i>Taeniothrips eucharii</i>	oriental lily flower thrips	Mary C. Sellers	NEW FLORIDA COUNTY RECORD
<i>Melissa officinalis</i>	<i>Bemisia tabaci</i> "Q"	sweetpotato whitefly	Lindsay M. Wheeler, Lisa M. Hassell	REGULATORY INCIDENT
<i>Ocotea coriacea</i>	<i>Cedusa inflata</i>	a derbid planthopper	Jake M. Farnum	NEW FLORIDA HOST RECORD



PLANT NAME	ARTHROPOD	ARTHROPOD COMMON NAME	COLLECTOR	RECORD
<i>Olea europaea</i>	<i>Bactrocera oleae</i>	olive fruit fly	Gregg D. Farina & K-9	REGULATORY INCIDENT
<i>Olea europaea</i>	<i>Saissetia miranda</i>	Mexican black scale	Cheryl A. Jones, Christine A. Zamora	NEW FLORIDA COUNTY RECORD; NEW FLORIDA HOST RECORD
<i>Pinus</i> sp.	<i>Gnorimella maculosa</i>	a scarab beetle	Eric M. Dougherty	NEW FLORIDA COUNTY RECORD
<i>Pinus strobus</i>	<i>Chionaspis pinifoliae</i>	pine needle scale	Lisa M. Hassell	REGULATORY INCIDENT
<i>Psidium guajava</i>	<i>Bactrocera correcta</i>	guava fruit fly	Linda G. McRay	REGULATORY INCIDENT
<i>Pyrus communis</i>	<i>Vanduzeeia segmentata</i>	a treehopper	Kelly K. Douglas	NEW FLORIDA HOST RECORD
<i>Raphanus</i> sp.	<i>Agallia albidula</i>	a leafhopper	Travis J. Streeter	NEW FLORIDA HOST RECORD
<i>Rhododendron</i> sp.	<i>Pseudococcus odermatti</i>	Odermatt mealybug	Lisa M. Hassell	NEW FLORIDA HOST RECORD
<i>Sabal palmetto</i>	<i>Homaledra</i> sp. 2	a palm-leaf skeletonizer moth	Deborah Matthews Lott, Terry A. Lott	NEW FLORIDA COUNTY RECORD
<i>Sabal palmetto</i>	<i>Homaledra</i> sp. 2	a palm-leaf skeletonizer moth	Jonathan S. Bremer	NEW FLORIDA COUNTY RECORD
<i>Solanum lycopersicum</i>	<i>Bemisia tabaci</i> "Q"	sweetpotato whitefly	Lindsay M. Wheeler	REGULATORY INCIDENT
<i>Solidago stricta</i>	<i>Clastoptera xanthocephala</i>	a spittlebug	Travis J. Streeter	NEW FLORIDA HOST RECORD
<i>Tamarindus indica</i>	<i>Brachypnoea</i>	a leaf beetle	Olga Garcia	NEW FLORIDA STATE RECORD.
<i>Ulmus americana</i>	<i>Alconeura macra</i>	a leafhopper	Travis J. Streeter	NEW FLORIDA COUNTY RECORD; NEW FLORIDA HOST RECORD
<i>Washingtonia robusta</i>	<i>Homaledra</i> sp. 2	a palm-leaf skeletonizer moth	Gabriel A. Lopez, Heather A. Rohrer, James E. Hayden, Keith W. Curry-Pochy, Meagan K. Reagle	NEW FLORIDA HOST RECORD
<i>Washingtonia</i> sp.	<i>Homaledra</i> sp. 2	a palm-leaf skeletonizer moth	Ryan G. Fessenden and university employees	NEW FLORIDA STATE RECORD.
	<i>Acyrtosiphon malvae</i>	an aphid	Jennifer L. Mestas, Michael L. Golub & K-9s	REGULATORY INCIDENT
	<i>Asturodes fimbriauralis</i>	a spilomeline moth	James T. Troubridge	NEW US CONTINENTAL RECORD
	<i>Bemisia tabaci</i> "Q"	sweetpotato whitefly	Lindsay M. Wheeler, Lisa M. Hassell	REGULATORY INCIDENT
	<i>Glyphodes rubrocinctalis</i>	a spilomeline moth	James T. Troubridge	NEW US CONTINENTAL RECORD
	<i>Ischnodemus variegatus</i>	West Indian marsh grass bug	Vince L. Golia	NEW FLORIDA COUNTY RECORD
	<i>Lyctus africanus</i>	powder post beetle	Douglas A. Restom-Gaskill, owner	REGULATORY INCIDENT
	<i>Siphunculina striolata</i>	a grass fly	homeowner	NEW FLORIDA COUNTY RECORD
	<i>Tarophagus colocasiae</i>	a taro planthopper	Vince L. Golia	NEW FLORIDA COUNTY RECORD
	<i>Tetragonoderus laevigatus</i>	a ground beetle	Vince L. Golia	NEW FLORIDA COUNTY RECORD



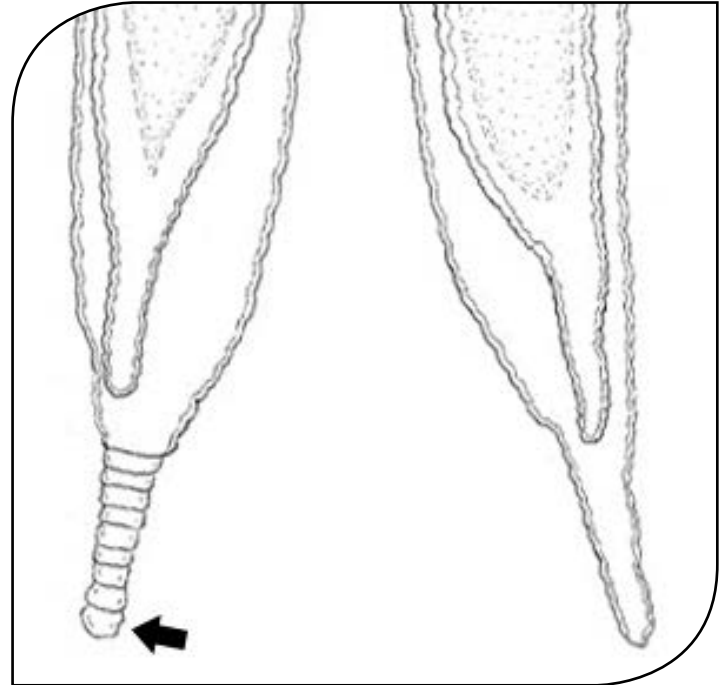
NEMATOLOGY

Compiled by Renato N. Inserra, Ph.D., Jason D. Stanley, M.S., Charles L. Spriggs, B.S., and Janete A. Brito, Ph.D.

This section analyzes soil and plant samples for nematodes, conducts pest detection surveys and provides diagnoses of plant problems, in addition to completing identification of plant parasitic nematodes involved in regulatory and certification programs. State of Florida statutes and rules mandate the predominant regulatory activities of the section. Analyses of plant and soil samples include those from in-state programs, plant shipments originating in Florida destined for other states and countries, as well as samples intercepted in Florida from outside the United States.

QUARTERLY ACTIVITY REPORT

	OCTOBER - DECEMBER	2017 - YEAR TO DATE
Morphological identifications	3,524	13,992
Molecular identifications	86	2,952
Total identifications	3,610	16,944



1a - *Hemicycliophora robbinsi* (a sheath nematode). Tail shape variations. Note the cylindrical distal portion of the tail ending in a rounded tip. Photograph courtesy of Van den Berg et al. 2014

Nematodes of Special Interest

1 *Hemicycliophora robbinsi* Van den Berg et al., 2018, a sheath nematode, was detected in the roots of various grasses (Gramineae). (Volusia County; N11-00439; Charles L. Spriggs; 12 April 2011.) Since 2011, long-term studies on the characterization of sheath nematodes (*Hemicycliophora* sp.) occurring on grasses in natural and cultivated Florida land have been conducted by nematologists of the Florida Department of Agriculture and Consumer Services. Many of the collected populations of these nematodes have remained unidentified for many years and identified in published papers as *Hemicycliophora* sp. 4 (Subbotin et al. 2014). Studies on the morphological and molecular characters of these populations have indicated that they belong to a new species called *Hemicycliophora robbinsi* that has been recently described by Van den Berg et al. (2018). One major characteristic of this species is the cylindrical terminal portion of the tail ending in a rounded and wide tip. In these studies, DNA sequences of populations of this species from other localities in the United States matched those of the Florida populations, providing evidence that this new species also occurs in California, North Carolina and Texas. Grasses are the preferred hosts of this sheath nematode. DPI records indicate that *Hemicycliophora robbinsi* is often associated with nematode parasites of turf grasses such as lance, ring, root-knot, sting and stubby root nematodes.



1b - Mixed weedy grasses, including *Andropogon virginicus*, in a typical site for *Hemicycliophora robbinsi* infestation. Photograph courtesy of Forest and Kim Starr, [Wikimedia](#)

REFERENCES

Subbotin, S.A., J.J. Chitambar, V.N. Chizhov, J.D. Stanley, R.N. Inserra, M.E. Doucet, M. McClure, W. Ye, G.W. Yeates, D.S. Mollov, C. Cantalapiedra-Navarrete, N. Vovlas, E. Van den Berg and P. Castillo. 2014. Molecular phylogeny, diagnostics and diversity of plant-parasitic nematodes of the genus *Hemicycliophora* (Nematoda: Hemicycliophoridae). *Zoological Journal of the Linnean Society* 171, 475-506.

Van den Berg, E., R.T. Louwrens, G. Liébanas, J.J. Chitambar, J.D. Stanley, R.N. Inserra, P. Castillo and S. A. Subbotin. 2018. Morphological and molecular characterization of two new *Hemicycliophora* species (Tylenchida: Hemicycliophoridae) with a revision of the taxonomic status of some known species and a phylogeny of the genus. *Nematology* 20 (In press).

COLLECTORS

Collectors submitting five or more samples that were processed for nematological analysis from April through June 2017.

COLLECTOR NAME	SAMPLES PROCESSED
Alford, Brian M.	23
Anto, Justin K.	11
Bentley, Michael A.	8
Berryman, Scott D.	28
Bloom, Richard T.	21
Boyar, Jillian	95
Carbon, Peter	9
Churchill, William C.	8
Clanton, Keith B.	79
Golden, Walter W.	7
Harris, Keith J.	37
Hassell, Lisa M.	10
Landress, Craig J.	11
LeBoutillier, Karen W.	121
McMahan, Michael C.	15
Miller, Matthew M.	14
Ochoa, Ana L.	110
Parido, Lavinia D	21
Smith, Lane M.	5
Spriggs, Charles L.	217
St. John, David	51
Stokes, William R.	10
Streeter, Travis J.	6
Taylor, Donald D.	9
Williams, Kevin M.	134
Wolfe, C. David	14
Wates, Johnny J.	6

CERTIFICATION AND REGULATORY SAMPLES

	OCTOBER-DECEMBER	2017 - YEAR TO DATE
Multistate certification for national and international export	1,594	7,334
California certification	313	1,512
Pre-movement (citrus nursery certification)	78	258
Site or pit approval (citrus nursery and other certifications)	30	151

OTHER SAMPLES

	OCTOBER-DECEMBER	2017 - YEAR TO DATE
Identifications (invertebrate)	8	22
Plant problems	16	82
Random intrastate surveys	231	595

SAMPLES FOR MOLECULAR ANALYSIS

	OCTOBER-DECEMBER	2017 - YEAR TO DATE
Regulatory	0	0
Other Purposes		
Surveys	86	2,952
Total	86	2,952

* The majority of these analyses involved root-knot nematode species.





PLANT PATHOLOGY

Compiled by Jodi Hansen, M.S., Taylor Smith, B.S., Kishore Dey, Ph.D., and Debra Jones, M.S.

This section provides plant disease diagnostic services for the department. The agency-wide goal of protecting the flora of Florida very often begins with accurate diagnoses of plant problems. Management recommendations are offered where appropriate and available. Our plant pathologists are dedicated to keeping informed about endemic plant diseases along with diseases and disorders active outside Florida in order to be prepared for potential introductions of new pathogens to our area.

1 *Pseudomonas savastanoi* pv. *savastanoi* (olive knot disease) Two-year-old olive trees (*Olea europaea*) in a Gilchrist County nursery were found with galls along the stems and tumorous growths at the root line. These symptoms are typical in the presentation of olive knot disease. The sample from Gilchrist County originated in California through a nursery in Hillsborough County. Shortly after the collection of the Gilchrist County sample, an olive tree from the Hillsborough County nursery was submitted to DPI for analysis. Both olive samples were confirmed positive for the bacterium that causes olive knot disease, *Pseudomonas savastanoi* pv. *savastanoi* (Psv), based on molecular analysis. (Gilchrist County; P2017-94846; Brian M. Alford; 29 November 2017 and Hillsborough County; P2017-95078; Susan B. Youngblood; 7 December 2017.)



1 - *Pseudomonas savastanoi* pv. *savastanoi* galling on *Olea europaea* (olive). Photograph courtesy of Susan B. Youngblood, DPI

Pseudomonas savastanoi pv. *savastanoi* is the causal agent of olive knot disease. It is common in California and found in all olive-growing regions. In 1980, the only other Florida interception of infected olive occurred when found in a shipment that also originated from California. An infected plant will likely display symptoms of galling, knotting, or tumorous growths on the twigs, branches, and stems while occasionally showing symptoms on leaves or the main trunk, especially if damage occurred in that area.

The pathogen spreads within a plant and is easily transmitted to nearby plants through wind-driven rain, contaminated tools, and infected nursery stock. After galls are observed, it is reasonable to assume a high level of inoculum is present, and the disease can then spread 100 meters or more. It is important to note that Psv can survive epiphytically on the bark of olive; therefore, inoculum is likely present on asymptomatic trees near trees with galls.

Although the Psv strain shows higher virulence in olive, a strain that infects oleander, *P. savastanoi* pv. *nerii* (Psvn), might also cause the knot symptoms characteristic of Psv on olive and oleander.

QUARTERLY ACTIVITY REPORT

	OCTOBER - DECEMBER	2017 - YEAR TO DATE
Citrus black spot	9	34
Citrus canker	270	603
Citrus greening / HLB	601	1,580
Honey bees	0	21
Interdictions	3	27
Laurel wilt	4	27
Pathology, General	565	2,393
Soil	57	157
Sudden oak death	0	3
Sweet orange scab-like disease	0	3
Texas Phoenix palm decline	9	220
Water	1	1
Miscellaneous	10	14
Budwood Samples	0	2,326
Total	1,529	7,409



🔍 PLANT PATHOLOGY IDENTIFICATION TABLE

Following are table provides information about samples identified in the current volume's time. The table is organized alphabetically by plant species, with new records listed on the right.

CASUAL AGENT	DISEASE NAME	LOCATION TYPE	SPECIMEN NUMBER	COUNTY	COLLECTOR	DATE	NEW RECORDS	COMMENTS
<i>Cylindrocladium pseudonaviculatum</i>	boxwood blight	school	95116, 95117	Manatee	Susan B. Youngblood	12/8/2017		A shipment of North Carolina-origin boxwood holiday wreaths infected with boxwood blight was intercepted at a Manatee County high school. According to DPI records, <i>Cylindrocladium pseudonaviculatum</i> (boxwood blight) is not established in Florida landscapes.
<i>Cucumber mosaic virus (Cucumovirus)</i>		residence	94086	Alachua	home owner	10/12/2017	host	<i>Cucumber mosaic virus</i> (CMV) belongs to the genus <i>Cucumovirus</i> of the family Bromoviridae. This virus has a worldwide distribution and a very wide host range. In fact, it is believed to have the widest host range of any known plant virus. The widely variable symptoms include distortion of foliage, mosaic, mottling, stunting and necrosis. This virus is spread by several aphid vectors. CMV can also be spread mechanically from infected plants to healthy plants.
<i>Corynespora</i> sp.	leaf spot	stock dealer	95003	Volusia	P. Karen Coffey	11/30/2017		<i>Corynespora</i> is a plant pathogenic fungus that has a wide host range. <i>Corynespora</i> often causes circular, reddish-purple leaf spots that, with humidity and warmth, will grow and spread rapidly.
<i>Phoma</i> sp.	leaf spot	nursery	95045	Palm Beach	Lane M. Smith	12/6/2017	host	<i>Phoma</i> is a genus of cosmopolitan coelomycetous soil fungi. <i>Phoma</i> species can be plant pathogenic or saprobic. Symptoms of infection are often stem cankers and/or leaf spots.



CASUAL AGENT	DISEASE NAME	LOCATION TYPE	SPECIMEN NUMBER	COUNTY	COLLECTOR	DATE	NEW RECORDS	COMMENTS
<i>Impatiens necrotic spot virus</i>		nursery	94474	Contra Costa, CA	owner	10/30/2017	host	<i>Impatiens necrotic spot virus</i> (INSV) belongs to the genus <i>Tospovirus</i> of the family Tospoviridae. Its wide host range consists of over 648 plant species including ornamentals, vegetables and horticultural crops. It is largely spread by the western flower thrips. The main symptom is necrotic spots, as the name of the virus suggests, but it may also cause concentric chlorotic rings, stunting and leaf tip dieback. This plant was received by University of Florida from a nursery in Richmond City, California.
<i>Pseudomonas savastanoi</i> pv. <i>savastanoi</i>	stem gall	nursery	94846	Alachua	Brian M. Alford	11/29/2017		The bacterium <i>Pseudomonas savastanoi</i> pv. <i>savastanoi</i> (= <i>Pseudomonas syringae</i> pv. <i>savastanoi</i>) causes the disease called olive knot. Characteristic symptoms of infection present as galls, called "knots," at the infection sites on stem tissue. The bacterium can be spread by rain on the plant surface or may move through the xylem inside the plant to make new galls. The bacterium enters through wounds. According to DPI records, olive knot is not established in Florida.
<i>Pseudomonas savastanoi</i> pv. <i>savastanoi</i>	stem gall	nursery	95078	Hillsborough	Susan B. Youngblood	12/7/2017		The bacterium <i>Pseudomonas savastanoi</i> pv. <i>savastanoi</i> (= <i>Pseudomonas syringae</i> pv. <i>savastanoi</i>) causes the disease called olive knot. Characteristic symptoms of infection present as galls, called "knots," at the infection sites on stem tissue. The bacterium can be spread by rain on the plant surface or may move through the xylem inside the plant to make new galls. The bacterium enters through wounds. According to DPI records, olive knot is not established in Florida.





FROM THE EDITOR

By Patti J. Anderson, Ph.D.

Annual Endangered Plant Advisory Council Meeting Held October 26 & 27, 2017

The Endangered Plant Advisory Council meets at least once annually to discuss endangered plant conservation and review information about endangered plant populations in Florida. Each species protected by the state as threatened or endangered is reviewed at least once every four years to assess changes in its threat level. Endangered Plant Advisory Council meetings usually occur in October and are announced in the Florida Administrative Weekly. Notice of council meetings are emailed to all interested parties whose names and addresses are provided to the department. An opportunity for the public to comment or present data orally or in writing is provided during the council meetings.

The Endangered Plant Advisory Council consists of seven persons appointed by the Commissioner of Agriculture. Each of the following groups is represented by one member: Florida Federation of Garden Clubs; Florida Nursery, Growers and Landscape Association; Committee for Rare and Endangered Plants and Animals; Florida Forestry Association; and, Florida Native Plant Society. In addition, two members are botanists, each of whom is a staff or faculty member at a state university. Current council members include:

- **Richard L. Moyroud**, Chair – Florida Native Plant Society
- **Loran C. Anderson, Ph.D.**, Vice-Chair – Florida State University Botanist
- **Charles D. Daniel, III** – Florida Forestry Association
- **David M. Drylie, Jr.** – Florida Nursery, Growers and Landscape Association
- **Suzanne Koptur, Ph.D.**, – Florida International University Botanist
- **Jack Stout, Ph.D.**, – Florida Committee for Rare and Endangered Plants and Animals
- **Tina Tuttle** – Florida Federation of Garden Clubs

DPI employee, Bryan Benson, serves as the secretary for the council. If you would like to offer information to the council, you may complete a ranking form ([FDACS-08422](#)) and/or contact a council member or staff person at DPI.

- **Bryan Benson**, Bryan.Benson@FreshFromFlorida.com
- **Patti Anderson, Ph.D.**, Patti.Anderson@FreshFromFlorida.com





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