

FLEPPC Plant List Committee
Documentation of the Criteria used in
Determination of Category I and Category II Invasive Species

Species name: *Spermacoce verticillata* L.

Category proposed: Cat. II

Proposed by and Date: Colette Jacono, 4-14-2014

Start date of this document: 06-2013

Document Author/s: Colette Jacono w/contributions by Pat Howell, Chris Lockhart, Jean McCollom

Common names: shrubby false buttonweed

Synonyms: *Borreria verticillata* (L.) G. Meyer

Has the species been vouchered? Yes. USF Plant Atlas depicts 25 counties total as having vouchered records within peninsular Florida



. The spreadsheet inserted below, however, denotes 16 counties as having occurrences in natural areas.

Early vouchered collections from Florida (1929 to ~1969) depicted more natural areas. Perhaps because much of the state was in better shape, roadsides were not over managed with herbicide and heavy equip. The 1970s through 1990s though produced increased collections at disturbed areas and right of ways as the species moved to new counties. The two most northern placed counties in the mapped distribution are St. Johns and Alachua. Collections there were made in ruderal sites and lawns. Entering and progressing through the 2000s, however, more records were made, and continue to be reported from natural areas.

Counties with vouchered records for natural areas:

Broward, Brevard, Collier, DeSoto, Glades, Hendry, Hillsborough, Lee, Martin, Miami-Dade, Palm Beach, Pinellas, Polk, Sarasota.

Natural Area Vouchers (only) listed by date:

COUNTY	LOCALITY	HABITAT	COLLECTOR	DATE	MUS	COORDINATE
Dade	Tamiami Trail to Florida Keys		Jennings	1929	USF	
Martin	Stuart, 2 miles south.	Low flatwoods	West	1944	FLAS	
Martin	Jonathon Dickinson State Park		Beck	1950	FLAS	
Hillsborough	SE of Tampa	wet grassy border of cypress pond w/ <i>Myrica</i> , <i>Magnolia</i> , <i>Persea</i> , <i>Smilax</i> and <i>Taxodium</i> .	Ray	1960	USF	
Palm Beach	Jupiter Island		Cooley	1956	USF	
Martin	Off exit 706, w of I-95.	Moist margins of pond.	Lakela	1964	USF	
Dade	Dante Fascell Park, Miami		Avery	1974	FLAS	
Monroe	Big Pine Key	Along a woodland path in partially cleared pinelands	Brumbach	1979	USF	
Miami-Dade	SW corner of junction of 123 Avenue and Sw 56th Street	wet prairie, disturbed	Sauleda 201	1979	USF	
Miami-Dade	Limerock pineland	in fire excluded area	Tan	1990	FLAS	
Collier	Monroe Station, along FL 94.	Scattered <i>Taxodium</i> forest and adjacent open savannas, associated with numerous graminoid herbs, scattered shrubs, and coniferous islands.	Reveal	1992	USF	
Miami-Dade	Near end of unimproved road W of N end of SW 207th Avenue, ca. 2 mi. N of Howard Drive (SW 136th Street), ca. 3.5 air mi. W of Krome Avenue. CJ note: Now ENP	Rocky muhly prairie/glade. Soils - Biscayne-rock outcrop (Typic Fluvaquents).	S. L. Orzell 18213	1991	USF	
Collier	Monroe Station, along FL 94.	Scattered <i>Taxodium</i> forest and adjacent open savannas, associated with numerous graminoid herbs, scattered shrubs, and coniferous islands.	Orzell and Bridges	1992	USF	
Polk	Avon Park Air Force Range.	Edge of moist hammock	vanHoek	1996	FLAS	
Collier	Fakahatchee Strand Preserve	Strand swamp/roadside	Pires	1998	USF	
Broward	Snake Creek Natural Area (Miramar Pinelands)	Prairie	Howell	2000	USF	
Broward	Fern Forest Nature Center		Howell	2001	USF, FLAS	
Broward	Pine Island Ridge Natural Area		Howell	2002	USFF LAS	
Broward	Hillsboro Pineland Natural Area			2003	FLAS	

Broward	east side of U.S. 1	Open grassy roadside, grading into marshy edge of river, with <i>Eustoma exaltatum</i> , <i>Hydrocotyle bonariensis</i> , <i>Ammannia latifolia</i> , <i>Scirpus americanus</i> , <i>S. robustus</i> , <i>Vitex trifolia</i> , <i>Tribulus cistoides</i>	Abbott	2008	FLAS	
Lee	Cape Coral	Coastal field, around burrowing owl nesting burrows.	Strong	2008	USF	
DeSoto	Deep Crk Preserve	Trail in mesic hammock, near stream.	Franck	2009	USF	
Glades	Fisheating Crk WMA	Edge of pond in mesic hammock	Frank	2009	USF	
Sarasota	Deer Prairie Crk Pres	Mesic hammock	Birch	2009	USF	
Broward	Tradewinds Park, Coconut Creek.	Abundant across open, mown field with ~ <i>Richardia grandiflora</i> ~.	Howell	2013	FLAS	
Pinellas	Honeymoon Island S.P., rd. leading to Osprey Trail.	Open, coastal scrub with <i>Pinus palustris</i> , <i>Serenoa repens</i> , <i>Myrica cerifera</i> , in grassy openings with <i>Aristida</i> and <i>Andropogon</i> ; bordering salt flats with <i>Avicennia germinans</i>	Jacono	2014	FLAS	28.06042N-82.82424W
Hendry	OK Slough WMA, W of Twin Mills Grade, ca 14yds from rd.	Wet flatwoods and wet prairie with diverse native graminoids & herbs.	McCollom	2014	FLAS	26.36425N-81.57213W
Collier	Private land E of Friendship Ln & S of CR 832.	Mesic flatwood edge near wet prairie with diverse, native understory species.	McCollom	2014	FLAS	26.36425N - 81.57213W
Collier	Corkscrew Regional Ecosystem Watershed	Wet flatwoods intermixed w/mesic flatwoods	McCollom	2014	FLAS	26.35003N-81.60606W
Collier	McCollom land, 985 Sanctuary Rd, 5 acre.	Mesic & wet flatwoods & wet prairie, drained; once abundant in wet prairies and common in mesic and hydric flatwoods - prior management.	McCollom	2014	FLAS	26.35003N-81.60606W
Collier	Florida Panther NWR	Hydric flatwoods w/ minor canal drainage. Along restricted, primitive rd., extending no more than 10ft from rd where groundcover in excellent condition.	McCollom	2014	FLAS	26°11'18.76"8 1°21'07.45"
Palm Beach	Delray Oaks Natural Area	Open, sandy area near edge of scrub boundary.	Lockhart	2014	FLAS	
Palm Beach	Delray Oaks Natural Area	Open, sandy disturbed edge of oak hammock	Lockhart	2014	FLAS	
Palm Beach	Delray Oaks Natural Area	Frenchman's Forest.	Lockhart	2014	FLAS	

Counties with non-vouchered records:

Suwannee. Suwannee Valley NFREC, Live Oak. Recurring from basal buds of planted material, ornamental garden at office front (20 Mar 2014, Jacono). Also planted in experimental ag field to serve as host for larra wasp.

Name of non-vouchered natural area invaded:

Habitats invaded: flatwoods, both mesic and wet; wet prairie (D. Hall), coastal field and scrub, mesic hammock, pond edge.

Population density / age structure:

Alteration observed to natural community:

Fire tolerance: Not ascertained. Because this species is highly dependent on seed for regeneration, recruitment from the seed bank might be promoted by the ensuing gaps provided by fire. Vouchers cited herein describe occurrence at wet flatwoods and wet prairies under fire management at OK Slough WMA and Corkscrew Regional Ecosystem Watershed, and at the hydric flatwoods of Florida Panther NWR (Jean McCollom). Fire is not required for recruitment.

Native Range: South America

Native Habitat:

Additional Comments:

- 1) Identification Tips: Suffrutescent herb; stems to 30 cm. Calyx lobes 2 long, 2 short/vestigial. Globose flower heads to 1 cm diam. and terminating stems, often 2nd node from apex also with flower cluster. Calyx 2-lobed, tube .6 – 1.0cm, corolla white; capsule <1.5mm long. Similar to the native *S. terminalis* which overall has smaller stature yet larger flowers, tubes 1.2-2.5cm and capsule >1.5mm long.
- 2) Contaminant in commerce: Lake Co, Eustis, Jons nursery, 24546 Nursery way. Occasional volunteer growing in nursery pots. Herb 1-2 feet. 24 sept 1999.
- 3) Genera is adapted to naturally disturbed areas, i.e. *S. remota* natural environments include wet grassy border of ponds, grassy openings in longleaf/scrub coastal areas; weed in cultivated ground and garden margins, etc.
- 4) IFAS is recommending for planting across the state to promote biocontrol of mole crickets by the larra wasp.

Supporting images: As follows are representative of three of the 2014 sites submitted by McCollom.



Photo 1. Hendry Co. OK Slough WMA, W of Twin Mills Grade, Wet flatwoods and wet prairie.



Photo 2. Collier Co. Corkscrew Regional Ecosystem Watershed



Photo 3. Collier Co. Friendship Lane

Supporting documents:

A. Larra wasp

[Environ Entomol.](#) 2010 Jun;39(3):939-43.

Nectar-seeking and host-seeking by *Larra bicolor* (Hymenoptera: Crabronidae), a parasitoid of *Scapteriscus* mole crickets (Orthoptera: Gryllotalpidae).

[Portman SL¹](#), [Frank JH](#), [McSorley R](#), [Leppla NC](#).

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Abstract

Larra bicolor F. (Hymenoptera: Crabronidae) is a specialist parasitoid of *Scapteriscus* (Orthoptera: Gryllotalpidae) mole crickets, attacking adults and medium to large nymphs of the hosts. Adult wasps derive energy from plant nectars. In replicated trials in pastures in northern Florida, many more wasps fed on nectar of *Spermacoce verticillata* F. (Rubiaceae), a non-native plant, than on nectar of the native plants *Spermacoce prostrata* Aubl. or *Spermacoce remota* Lamarck. Few of them fed on the native plant *Solidago fistulosa* Michx. (Asteraceae). About as many fed on the native plant *Chamaecrista fasciculata* (Michx) Greene as on *S. verticillata* in the autumn months until the native plant ceased flowering by October. In contrast, *S. verticillata* continues flowering until the first hard freeze, which typically occurs in December, so overall, it is a more reliable nectar source in northern Florida and may

be still more reliable in frost-free areas of southern Florida where it may flower year-round. The number of immature wasps (eggs and larvae) parasitizing mole crickets was positively related to host density but also declined with distance from a plot of *S. verticillata* out to 200 m, based on samples of pitfall trap-collected mole crickets. The occurrence of parasitized mole crickets at a 200-m distance suggests that female wasps recruited to a plot of *S. verticillata* forage for hosts out to at least 200 m. This in turn suggests that mole cricket populations might be diminished by planting plots of *S. verticillata* at least 400 m apart when *L. bicolor* wasps are present.

B. Further descriptive data submitted by Jean McCollom

Hendry Co., OK Slough WMA, West of Twin Mills Grade ca 14 yds from rd. Wet flatwoods and wet prairie. Burned, slightly drained, area treated for Cat 1&2 Invasive species ans some pasture grasses. 26.62687N -81.30560W. 1/13/2014.

Associated Species:

<i>Amphicarpum muhlenbergianum</i>	little blue maidencane
<i>Andropogon glomeratus</i> var. <i>glaucopsis</i>	bluestem, chaulky bushy
<i>Andropogon virginicus</i> var. <i>virginicus</i>	broomsedge bluestem
<i>Caperonia castaneifolia</i>	chestnutleaf falsecroton
<i>Centella asiatica</i>	pennywort
<i>Dichanthelium aciculare</i>	needleleaf witchgrass
<i>Dichanthelium erectifolium</i>	erect-leaf witchgrass
<i>Eragrostis elliotii</i>	lovegrass, Elliott's
<i>Euthamia caroliniana</i>	flat-topped goldenrod
<i>Hyptis alata</i>	musky mint
<i>Ludwigia microcarpa</i>	smallfruit primrose willow
<i>Mikania scandens</i>	climbing hempvine
<i>Panicum hians</i>	gaping panicum
<i>Panicum repens</i>	torpedo grass
<i>Panicum rigidulum</i>	redtop panicum
<i>Phyla nodiflora</i>	carpetweed
<i>Pluchea baccharis</i>	rosy camphorweed
<i>Rhynchospora colorata</i>	white-top sedge
<i>Rhynchospora fascicularis</i>	fascicled beakrush
<i>Setaria parviflora</i>	foxtail or bristlegrass
<i>Viola lanceolata</i>	long-leaf violet
<i>Xyris, several species</i>	Yelloweyed grass, several species

2) Collier Co., Private land E of Friendship Ln and S of Immokalee Rd (CR832). Mesic flatwood edge near wet prairie. Drained, not burned, not treated for exotics. 26.36425 -81.57213 W . 316/2014

Associated Species:

<i>Andropogon glomeratus</i> var. <i>glaucopsis</i>	bluestem, chaulky bushy
<i>Andropogon virginicus</i> var. <i>deciens</i> (probably)	broomsedge bluestem
<i>Aristida stricta</i> var. <i>beyrichiana</i>	wiregrass
<i>Asimina reticulata</i>	pawpaw
<i>Axonopus furcatus</i>	carpetgrass, big
<i>Chamaecrista nictitans</i> var. <i>aspera</i>	sensitive pea
<i>Dichantherium aciculare</i>	needleleaf witchgrass
<i>Dichantherium portoricense</i>	hemlock witchgrass
<i>Emilia sonchifolia</i>	lilac tasselflower
<i>Eupatorium capillifolium</i>	dog fennel
<i>Eustachys glauca</i>	fingergrass, saltmarsh
<i>Helenium pinnatifidum</i>	southeast sneezeweed
<i>Hypericum tetrapetalum</i>	fourpetal St. John's-wort
<i>Hypoxis</i> sp	yellow stargrass
<i>Ilex glabra</i>	gallberry
<i>Lachnanthes caroliana</i>	bloodroot
<i>Ludwigia maritima</i>	seaside primrose willow
<i>Lyonia fruticosa</i>	staggerbush
<i>Mecardonia acuminata</i> subsp. <i>peninsularis</i>	axilflower
<i>Panicum hians</i>	gaping panicum
<i>Paspalum setaceum</i>	thin paspalum
<i>Pinus elliotii</i> var. <i>densa</i>	slash pine
<i>Pityopsis graminifolia</i>	golden aster
<i>Pluchea baccharis</i>	rosy camphorweed
<i>Polygala rugelii</i>	yellow batchelor's button
<i>Polypremum procumbens</i>	rustweed
<i>Pterocaulon pycnostachyum</i>	blackroot
<i>Quercus minima</i>	dwarf live oak
<i>Serenoa repens</i>	saw palmetto
<i>Smilax auriculata</i>	earleaf greenbriar
<i>Syngonanthus flavidulus</i>	bantam-buttons
<i>Vaccinium myrsinites</i>	shiny blueberry
<i>Xyris brevifolia</i>	shortleaf yelloweyed grass
<i>Xyris elliotii</i>	Elliott's yelloweyed grass

<i>Xyris flabelliformis</i>	savannah yelloweyed grass
<i>Cladonia cristatella</i>	British soldier lichen
<i>Dichanthelium strigosum</i> var. <i>glabrescens</i>	roughhair witchgrass

3) Collier Co., Corkscrew Regional Ecosystem Watershed , managed by SFWMD. School section S of Corkscrew Swamp Sanctuary and W of Immokalee Rd. Wet flatwoods intermixed w/ mesic flatwoods. Burned, woody exotics treated. 6.35003N -81.60606W. 3/16/2014.

Associated Species:

<i>Amphicarpum muhlenbergianum</i>	little blue maidencane
<i>Andropogon glomeratus</i> var. <i>glaucoptis</i>	bluestem, chalky bushy
<i>Andropogon virginicus</i> var. <i>decipiens</i> (probably)	broomsedge bluestem
<i>Aristida stricta</i> var. <i>beyrichiana</i>	wiregrass
<i>Carphephorus corymbosus</i>	coastalplain chaffhead
<i>Cassytha filiformis</i>	fine-stem lovevine
<i>Cirsium horridulum</i>	purple thistle
<i>Coreopsis leavenworthii</i>	Leavenworth's tickseed
<i>Dichanthelium aciculare</i>	needleleaf witchgrass
<i>Dichanthelium strigosum</i> var. <i>glabrescens</i>	roughhair witchgrass
<i>Dichanthelium portoricense</i>	hemlock witchgrass
<i>Erigeron quercifolius</i>	southern fleabane
<i>Eryngium baldwinii</i>	Baldwin's coyote-thistle
<i>Eryngium yuccifolium</i>	button rattlesnakemaster
<i>Eupatorium capillifolium</i>	dog fennel
<i>Fimbristylis dichotoma</i> (probably)	forked fimbry
<i>Fuirena scirpoidea</i>	southern umbrellasedge
<i>Helenium pinnatifidum</i>	southeast sneezeweed
<i>Heliotropium polyphyllum</i>	pineland heliotrope
<i>Hyptis alata</i>	musky mint
<i>Ilex cassine</i>	dahoon holly
<i>Ilex glabra</i>	gallberry
<i>Juncus marginatus</i>	shore rush; grassleaf rush
<i>Liatris gracilis</i>	slender gayfeather
<i>Ludwigia microcarpa</i>	smallfruit primrose willow
<i>Lyonia fruticosa</i>	staggerbush
<i>Mecardonia acuminata</i> subsp. <i>peninsularis</i>	axilflower
<i>Melochia spicata</i>	bretonica peluda
<i>Myrica cerifera</i>	Wax-myrtle, Southern bayberry
<i>Panicum tenerum</i>	blue-joint panic grass

<i>Paspalum monostachyum</i>	gulfdune paspalum
<i>Paspalum setaceum</i>	thin paspalum
<i>Piloblephis rigida</i>	pennyroyal
<i>Pinus elliotii</i> var. <i>densa</i>	slash pine
<i>Piriqueta cistoides</i> subsp. <i>caroliniana</i>	pitted stripeseed
<i>Pluchea baccharis</i>	rosy camphorweed
<i>Polygala violacea</i>	showy milkwort
<i>Rhus copallinum</i>	winged sumac
<i>Rhynchospora colorata</i>	white-top sedge
<i>Rhynchospora inundata</i>	Inundated beaksedge
<i>Rhynchospora filiform</i> type	beaksedge
<i>Sabatia stellaris</i>	rose-of-plymouth
<i>Serenoa repens</i>	saw palmetto
<i>Smilax auriculata</i>	earleaf greenbriar
<i>Stillingia sylvatica</i>	queen's-delight
<i>Viola lanceolata</i>	long-leaf violet
<i>Vitis rotundifolia</i>	muscadine grape
<i>Xyris brevifolia</i>	shortleaf yelloweyed grass
<i>Xyris</i> , medium sized	yelloweyed grass

4) Collier Co., Private property managed by Jean McCollom, 985 Sanctuary Rd. Mesic and wet flatwoods, wet prairie. Somewhat drained, not burned, treated for Cat 1&2 invasive species and exotic pasturegrasses. 26.35003N -81.60606W. 3/22/2014

Have been pulling (when standing water is best) and spraying with glyphosate when dry for the last 8 years. For about 5 years it was thick; it would fill in wet prairie areas, some that were disturbed by house construction, but also areas undisturbed. Possibly 5 years to deplete most of the seedbank? Spermacoce was also present in the mesic and hydric flatwoods but not as thick. It was most persistent near the road and drive. After 8 years of persistent pulling, it is getting close to maintenance level. The area is native mesic & hydric flatwoods and wet prairie with a willowhead, slightly drained, not burned for many years, but treated for Cat 1 & 2 exotics & pasture grasses. Spermacoce was present in all but the willowhead. Presence on the dirt drive is continuous despite herbicide treatments 2 or 3 times a year, since it is hard to pull in the stabilizer on the drive; there is probably a continuing seed source there. Most plants found now are young and from seed.

_____ **To be Filled in by List Committee following Hearing of Proposal** _____

Outcome: Cat.II **Date:** 29 July 2014

Vote tally: # 7 Yea # 0 Nay # Abstained # Voting withheld