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

Species name: *Praxelis clematidea*

Category proposed: Cat. II

Proposed by and Date: Debi Stone (TNC), Charles Cook (FL DEP), Steve Richardson (FIPRI), Kent Williges (FWCC); Colette Jacono (FWCC)

Start date of this document: 6/18/2014

Document Author/s: Debi Stone, Colette Jacono

Common names: The name praxelis will be used for now.
Synonyms: not of recent concern

Has the species been vouchered? Yes

Counties with vouchered records for natural areas: Manatee, Hillsborough, Osceola

Voucher data:

County	Locality	Habitat	Date	Museum
Natural Areas				
Manatee	Moody Branch Mitigation Park WEA, Parrish.	Ground Cover Restoration Site	Nov 2013	FLAS
Hillsborough	Fish Hawk Nature Preserve; E side of Boyette Road across the street from Camp Dorothy Thomas	sand hill - dry flatwoods	Jun 2013	USF
Osceola	Disney Wilderness Preserve	Wet flatwoods having a diverse herbaceous & shrub layer	July 2014	Enroute to USF
Lake	Hilochee WMA, Clermont	Seven year old native groundcover restoration site, flatwoods	July 2014	Enroute to FLAS
Disturbed Areas				
Hardee	Wauchula, Johns Road.	Found in herb garden	April 2013	FLAS
Hillsborough	Adjacent to Wimauma Airport, S of FL 674, E of FL 579.	Abandoned citrus grove w/ thousands of plants in flower	May 2014	USF
Lake	Hilochee WMA, Clermont	In a weedy fencerow w/ Vitis, Rubus & Smilax. *Also in isolated, dense patches throughout property and along roadside.	Dec 2012	FLAS
Orange	Lake Hancock Road	Roadside w/ Paspalum notatum, Heterotheca subaxillaris, Bidens alba, Cyperus rotundus, Eupatorium capillifolium, Urena lobata, Sida rhombifolia	July 2007	USF, FLAS

Orange	Note: Collected as part of dissertation related to the evaluation of risk factors associated with decreased nutritional status and reproduction in gopher tortoises	Abandoned citrus grove, now open field dominated by Rhynchelytrum repens, Richardia brasiliensis; on edges, Urena lobata and Cenchrus spinifex, Heterotheca subaxillaris, Bidens alba	July 2006	FLAS
Orange	SSW of Reedy Lake, near the Rapid Infiltration Basin Systems of the Reedy Creek Improvement District along Old Hartzog Road	Roadside and edge of pine plantation w/ *Paspalum notatum, Heterotheca subaxillaris, Bidens alba, Lantana camara, Panicum maximum, Rhynchelytrum repens*	July 2007	FLAS
Orange	Boggy Creek Road, ca 0.1 mile E of small bridge over Boggy Creek	In deep canal (cut-over swamp to the S) w/ *Paspalum notatum, Andropogon, Panicum repens, P. maximum, Aeschynomene indica, Ludwigia peruviana, Sesbania punicea*, etc.	Sept 2008	FLAS
Osceola	Disney Wilderness Preserve	Roadside in disturbed flatwoods.	May 2014	USF
Reclaimed Areas				
Polk	Homeland, near the Peace River (photo below)	Sandy reclaimed pine flatwoods. The reclamation earthmoving was completed in the late '70s, hence the soil has matured for more than 40 years ("The site is not a recently disturbed area" C. Cook 07/28/14).	Nov 2013	USF

Counties and natural area with non-vouchered records:

Lake County: Hilochee WMA, Clermont.

1) Known since 2010 at the Upland Habitat groundcover restoration site when the first restoration phase was complete. Four years after its planting, graminoid cover (primarily *Aristida stricta* & *Sorghastrm secundum*) was 41% - higher than at donor sites yet, native, non-weedy herbaceous plants and small-statured grasses were low. *Praxelis clematidea* was found in the northern portion of the site with *Richardia brasiliensis* at 5% mean cover each while Melinis repens and Sporobolus indicus were only 0.4% (Hilochee Fall 2010, FWCC Upland Habitat Program, Kent Williges).

2) Roadsides and other disturbed areas of a recently logged northern tract of approx. 750 acres and in a similar manner and acreage at the southern Osprey Unit tract. Populations are increasing at both sites (Mike Blondin, FWCC biologist, personal communication 07/23/14).

Osceola County: Disney Wilderness Preserve. Populations first identified in 2013. Observed in 2014 at 8 sites, mainly along roadsides and in disturbed areas. Largest current population is only 0.6 gross acres with an estimated cover of 25%, but that is because it is spread very far along a road. The epicenter of this population is in the 75 to 95% cover range and probably about 0.08 gross acres. The others are all roadside. *Praxelis* is beginning to germinate in the palmetto in one of the populations, but it is still within about 3 feet of the road footprint.

Polk County: 1) Bok Tower Gardens - In a disturbed area undergoing restoration from fallow citrus to LLP/sandhill habitat. On a maintained portion of one acre that was very heavily planted two years ago with wildflowers and mulched with pine straw. The pine straw or potted materials are suspected sources of introduction because *Praxelis* has not been found on any other portion of the 30 acre unit (Katrina Noland, Land Steward, personal communication 07/24/14).

2) Lakeland, Tenoroc Fish Management Area (Casey Beavers, DEP)

3) Bartow, CR 555, reclaimed phosphate parcel (Noralyn Phosphoria Mine) - The CR 555 *Praxelis* grows on reclaimed sandy soils that were revegetated as pine flatwoods more than 10 years ago. At this

time the ground cover consists primarily of weedy species along with a few native desirables. Weed associates: *Melinis repens*, *Richardia brasilensis*, *Heterotheca subaxillaris*, *Eupatorium*, *Cyperus* sp., *Phyla nodiflora*, *Digitaria* sp., *Baccharis* sp. , *Ambrosia artemisiifolia*, *Schinus terebinthefolius* and *Imperata cylindrical* (Charles Cook, DEP, personal communication 07/25/14) (Also see pre-herbicide and post-herbicide photos below).

4) Bartow, FIPR, SR 60 (Steven Richardson, Florida Polytechnic Univ., Industrial and Phosphate Res. Institute)

Habitats invaded:

Osceola County: Mainly where natal populations are/have been, but also tolerating more hydric conditions. One population occurs along a culvert next to a bay head. The *Praxelis* grows throughout most of the ditch by the culverts and is moving into the palmetto less than 10 feet away from bay trees.

Population density / age structure:

Osceola County: Disney Wilderness Preserve. Quick to grow and to mature, rapid reproduction rate leads to dense colonization of open areas within a few months. Individuals often begin flowering at 3 to 4 inches tall. When the flower heads are opened, the seeds appear to be mature, even though flowers are still intact. Debi Stone is investigating the germination rate of fresh seed collected from flowering heads.

Polk County: Homeland, FL. March 2014. A newly discovered invasion was hand-pulled and the individual plants counted. The colony consisted of 3 flowering/seeding adults (18-24" tall), 9 flowering/non-seeding sub-adults (12-18" tall), and 90 seedlings (< 12" tall). The patch covered an area of approximately 12x12'.

Alteration observed to natural community:

1) *Praxelis* seems to be capable of outcompeting many of our native weedy species (blackberry, bluestems, maidencane, etc.), and can grow to dense concentrations to alter vegetation structure and composition.
2) The plants have fibrous root systems that might act to displace native seed germination.
3) The plants grow into such crowded patches that they may shade out native plants.

Fire tolerance:

1) Documents from Australia indicate a positive reaction to fire (see linked articles below).
2) Fire tolerance of a seed bank has been reported in a population that was treated and apparently killed with glyphosate.
3) In a flatwoods restoration parcel a persisting seed bank was liberated following fire treatment (Kent Williges, FWCC, 2014, Pers. Comm.)

Native Range: Restricted to South America - Argentina, Bolivia, Paraguay and Brazil (see Abbott et al. 2008). Introduced to China, Hong Kong and Australia. Considered an environmental weed in Australia (Randall 2002)

Native Habitat: uplands, riparian

Additional Comments:

Perennial and annual. When stressed (drought, herbicide, etc.) *Praxelis* responds by casting off a large amount of seed. Plumose achenes are prone to wind borne and mechanical dispersal by vehicles. Literature suggests the species not be hand-pulled due to risk of spreading seed.

Supporting images:

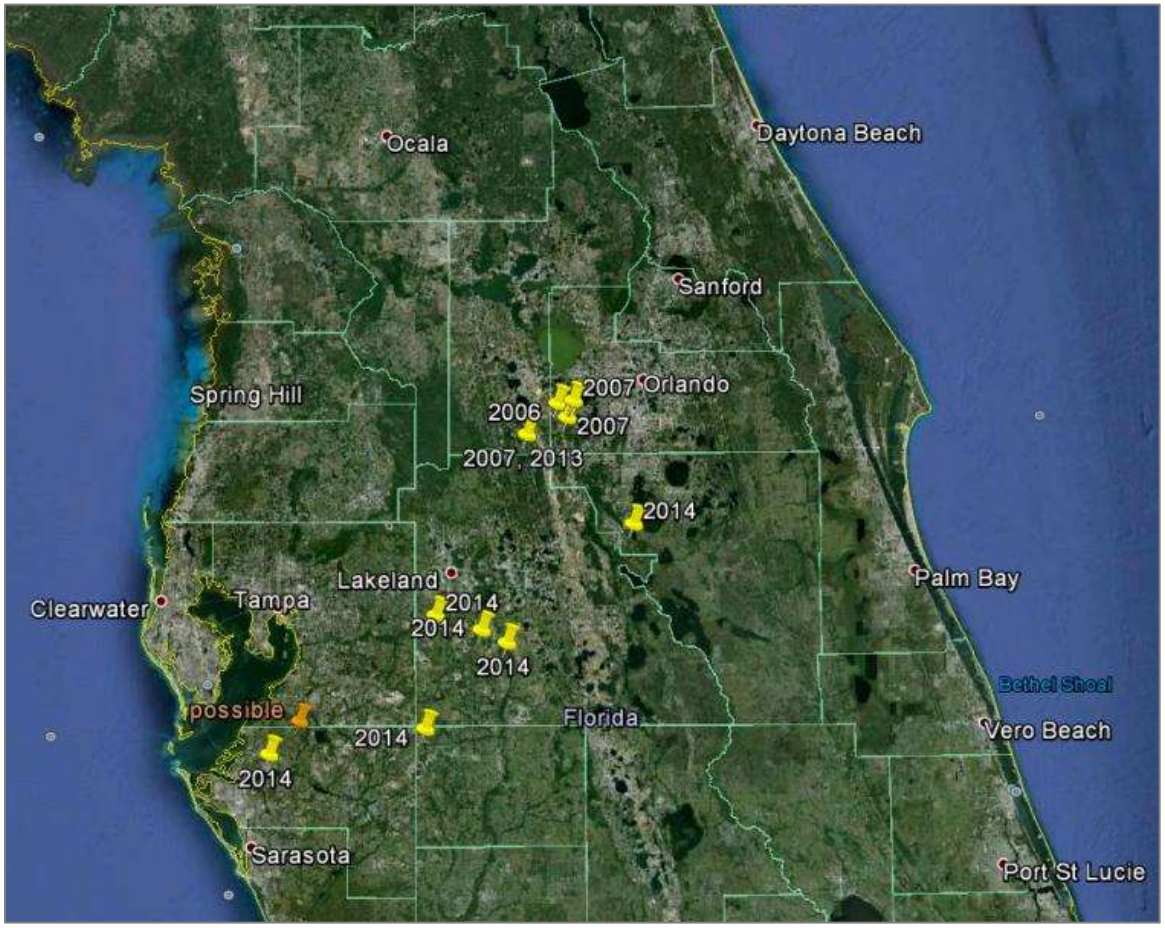
Seed derived plants of *Praxelis clematidea* invade good quality wet flatwoods at Disney Wilderness Preserve. This site is located seven feet from the road footprint and approx. 0.75 miles from the vouchered population. There are no washouts or erosion problems nearby. Photo: Debi Stone.

Praxelis clematidea near the Peace River, Homeland, >40yr old reclaimed pine flatwoods. Photo C. Cook.

Distinguishing features: Shrubby, pubescent herb to 1.3m. Leaves with margins irregularly toothed. Heads longer than wide having conical shaped receptacles; pappus w/ bristles ~40, florets 25-30, phyllaries 15-25, unequal, flat, dropping at time of achene maturation.
Photos: *Praxelis clematidea* C. Cook

Polk Co., CR 555 reclaimed phosphate parcel (Noralyn Phosphoria Mine). *Praxelis clematidea* occurs with other weedy species at a 10 yr old site where native ground cover restoration had not been employed.

Polk Co., CR 555 reclaimed phosphate parcel (Noralyn Phosphoria Mine) after herbicide treatment. The mining company is aggressively treating the species. Photos by: Charles Cook, DEP



General distribution of *Praxelis clematidea* in Florida as of 29 July 2014.
Map by Charles Cook, DEP.

Supporting documents:

Abbott, J. Richard, C. LeeAnn White, and S. Barry Davis. 2008. *Praxelis clematidea* (Asteraceae), a genus and species new for the Flora of North America. J. Bot. Res. Inst. Texas 2(1): 621-626. This first report, excellent description, and key to the genus is based on the first Orange County specimens 2006–2008.

Randall, Rod. 2002. A Global Compendium of Weeds. Victoria, Australia. 905 pg.

Williges, Kent. Hilochee Fall 2010 Report, Upland Habitat Research and Monitoring, FFWCC, Williston, FL; 10 pg.

http://www.daff.qld.gov.au/plants/weeds-pest-animals-ants/weeds/a-z-listing-of-weeds/photo-guide-to-weeds/praxelis/?a=63172

http://www.weeds.org.au/cgi-bin/weedident.cgi?tpl=plant.tpl&state=&s=&ibra=all&card=H33

Corlett , R.T. and J.C. Shaw. 1995. *Praxelis clematidea*: yesterday South America, today Hong Kong, tomorrow the world? Mem. Hong Kong Nat. Hist. Soc. 20:235–236. Available at http://www.hku.hk/ecology/staffhp/rtc/corlett-pdf/RTC-praxelis-1995.pdf

Cronquist, A. 1980. Asteraceae. In: A.E. RadfordPollock , S., A. Holland, W. Smi th, and R. Price. 2004. New alien weed for Queensland: Praxelis. Queensland Herbarium Alert Sheet 1/2004. Queensland Government Environmental Protection Agency. Available at http://www.epa.qld.gov.au/publications/p01248aa.pdf/Praxelis_new_alien_weed_for_Queensland.pdf

_____ 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