New, Poorly Known or Expected Invasive Graminoids & Vines of Southern Georgia

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Graminoids

- Monocots with linear leaves & reduced flowers
- Grasses & grass-like plants
- Primarily three families of plants
  - Grasses (Poaceae)
  - Sedges (Cyperaceae)
  - Rushes (Juncaceae)

Some characteristics contributing to the weediness of graminoids

- Many species heliophytes – adapted to open, sunny habitats with reduced competition
- Rapid growth
- Vegetative proliferation (e.g., intercalary meristem, runners, stolons, rhizomes, corms)
- High reproductive output (i.e., numerous small seeds)
- Extended seed dormancy

Grasses vs. Sedges

Grass Family (Poaceae)
- Stems internodes usually hollow
- Stems usually terete (round in cross section)
- Leaves with open sheaths
- Leaves usually 2-ranked
- Fruit a grain (caryopsis)

Sedge Family (Cyperaceae)
- Stems usually solid
- Stems usually trigonous (3-angled)
- Leaves with closed sheaths
- Leaves usually 3-ranked
- Fruit an achene

Invasive Grasses

Poaceae

Torpedo Grass

Panicum repens L.

- Tropics and subtropics worldwide, mostly coastal
- Common along Gulf Coast
- Shores of ponds, lakes, ditches, moist sandy beaches
- Not reported in Jones & Coile *Atlas*.... (1988)
- More recently dispersed into Georgia – Colquitt, Cook, Lowndes, McIntosh counties
- Likely dispersed by road traffic, mowers, highway construction & maintenance

Torpedo Grass

- Perennial
- Rhizomes long, highly branched, scaly, sharp-pointed
- Plants to 0.9 m tall, mostly <0.5 m
- Inflorescence stiffish with lower branches ascending
- Spikelets acute, pale green, 2.2-2.8 mm long
- Lower glume truncate to broadly acute

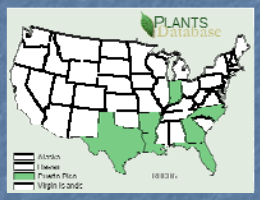
Illustration from USDA-NRCS PLANTS Database / Hitchcock, A.S. (rev. A. Chase). 1950. *Manual of the grasses of the United States.* USDA Misc. Publ. No. 200. Washington, DC.

Torpedo Grass
Colquitt County, GA

Itchgrass

Rottboellia cochinchinensis (Lour.) Clayton

- Native to SE Asia
- Widespread in tropical & subtropical areas
- Federal Noxious Weed
- Seed dispersal along railroads & highways
- Aggressive weed of corn, cotton, peanut, soybean, sugarcane, ditch banks, highway & railroad ROW, natural areas



Itchgrass

- Annual
- Prop roots well developed
- Plants mostly 1-2 m high
- Leaf sheaths with stiff, irritating hairs
- Inflorescence jointed, breaking apart transversely when mature
- Spikelets with fruits embedded in inflorescence axis

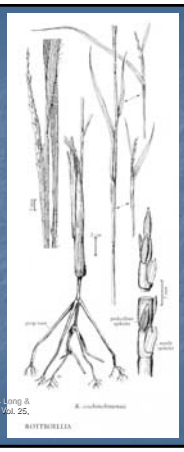


Illustration by LA Vorobik in Barkworth, ME, KM Capels, S Long & MB Piep. 2003. Poaceae, Part 2, Flora of North America, Vol. 25, Oxford University Press, New York.

Itchgrass

Photocredit: USDA APHIS Archives; USDA APHIS | www.forestryimages.org

UGA1148148

Itchgrass
Brooks County, GA

Cogon Grass
Imperata cylindrica (L.) Beauv.

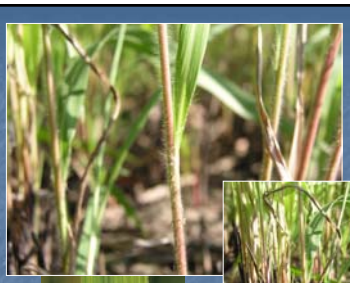
- Native to Asia
- Introduced early 1900s: LA, s AL, s GA, FL for soil stabilization
- Federal Noxious Weed
- Aggressive invader of natural areas, forming dense colonies
- Dense stands = fire hazard
- Fire stimulates flowering
- Seeds dispersed by wind

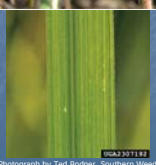
Cogon Grass

- Perennial
- Rhizomes long, slender, scaly
- Stubble stiff, sharp-pointed – SHOES REQUIRED!
- Leaf sheaths usually hairy
- Leaf blades with offset midrib, often yellow-green
- Inflorescence a terminal, spike-like panicle
- Fruiting spikelet with basal tuft of silky, white hairs

Illustration from USDA-NRCS PLANTS Database / Hitchcock, A.S. (rev. A. Chase). 1950. *Manual of the grasses of the United States.* USDA Misc. Publ. No. 200. Washington, DC.

Cogon Grass
Thomas County, GA





Cogon Grass – leaf sheath, leaf blade, stubble

Photograph by Ted Bodner, Southern Weed Science Society, www.forestryimages.org

Cogon Grass
Thomas County, GA

Cogon Grass
Thomas County, GA

?Tussock Paspalum

Paspalum quadrifarium Lam.

- Plants robust, 2 m high, forming large tufts
- Native temperate S America
- Ornamental in FL, naturalized Dade Co.
- Noxious weed in NSW Australia
- 2004 observed, vouchered in GA: Grady & Tift Cos.

Grady County, GA

Chinese Silvergrass

Miscanthus sinensis Anderss.

Photographs by James H. Miller, USDA Forest Service, www.forestryimages.org

Invasive Sedges

Cyperaceae

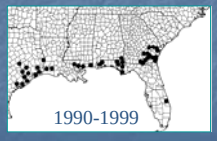
Deeproot Sedge

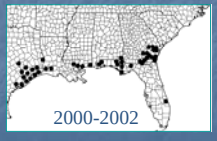
Cyperus entrerianus

Known Distribution of Deeproot Sedge before 1989

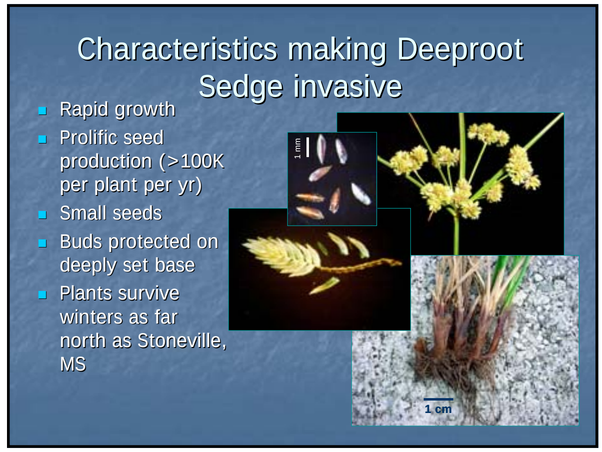
- Temperate South America
  - Argentina
  - Paraguay
  - Uruguay
  - S Brazil
- Mexico

Deeproot Sedge 1941 – 2002

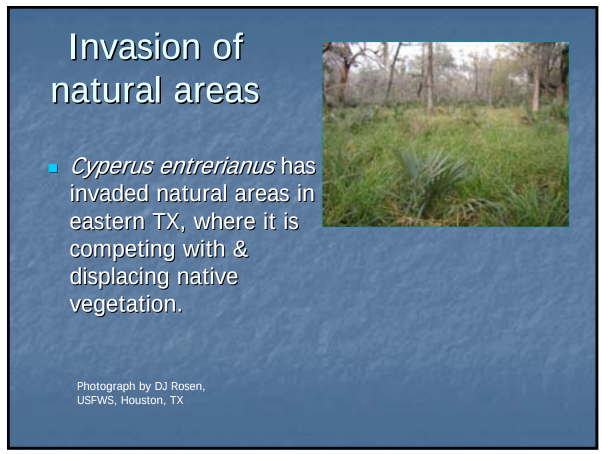





Deeproot Sedge
in Georgia
Edge of flatwoods, Echols County, GA
Truckstop, Long County, GA


Characteristics making Deeproot Sedge invasive
Rapid growth
Prolific seed production (>100K per plant per yr)
Small seeds
Buds protected on deeply set base
Plants survive winters as far north as Stoneville, MS
1 mm
1 cm


Deeproot Sedge
in Texas
Fallow rice field,
Matagorda Co., TX
Powerline right-of-way, San Bernard
NWR, Brazoria Co., TX
Photograph by DJ Rosen, USFWS, Houston, TX

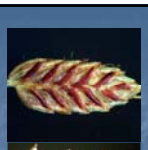

Invasion of
natural areas
Cyperus entrerianus has invaded natural areas in eastern TX, where it is competing with & displacing native vegetation.
Photograph by DJ Rosen,
USFWS, Houston, TX

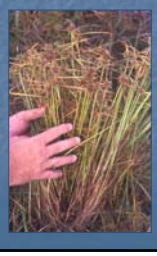

Smallflower Umbrellasedge
(Cyperus difformis L.)
•Annual
•Small seeds
•50K seeds per plant!
•Short life cycle
•Herbicide resistance
•Major weed in rice
•Introduced from Asia
1996 – Lanier County, GA
2003 – McIntosh County, GA

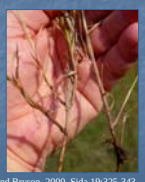

Bloodscale Sedge
Cyperus sanguinolentus Vahl

Bloodscale Sedge

- Annual
- Small seed
- Rice weed in Asia
- Late-season flowering
- Non-native invasive





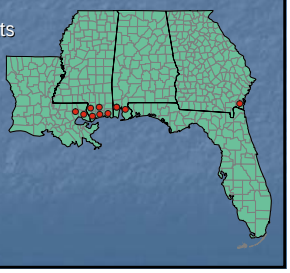


Carter and Bryson. 2000. Sida 19:325-343.

Bloodscale Sedge
Camden County, GA

Bloodscale Sedge
Distribution, Ecology & Life History

- Widespread & weedy in SEUS
- Often locally abundant
- Invader of disturbed habitats
  - roadside ditches
  - margins of ponds
- Range expanding in SEUS
- Phenology: flowers & fruits Sept. until frost

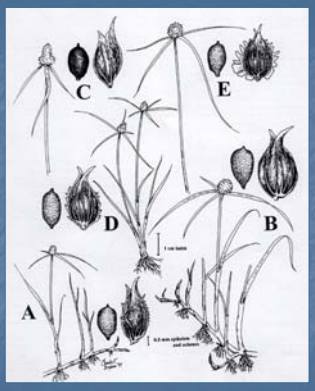


Kyllinga

- 5 species in continental U.S.
- Annual & perennial
- Weeds of lawns, flowerbeds, golf courses, athletic fields

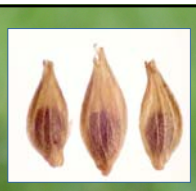
A) ***K. brevifolia* Rottb.***
B) ***K. gracillima* Miq.***
C) ***K. odorata* Vahl***
D) ***K. pumila* Michx.**
E) ***K. squamulata* Thonn. ex Vahl***

*non-indigenous



Bryson, Carter, McCarty, and Yelverton. 1996. Weed Technol. 11:838-842.

Fragrant Kyllinga
Kyllinga odorata Vahl



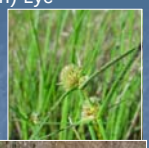
- Common & widespread in SEUS
- Weed of roadsides, lawns, athletic fields, golf courses
- Introduced before 1836
- Plants cespitose, not rhizomatous

Cock's Comb Kyllinga
Kyllinga squamulata Thonn. ex Vahl

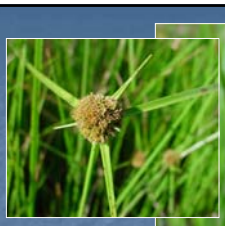
- Introduced from Asia
- In US, until recently only known from FL
- Found in Lowndes Co., GA (1998), Chatham Co. (2001)
- Lawns, athletic fields, golf courses
- Likely dispersed in turf
- Difficult to control with mowing & herbicides
- Annual habit, not rhizomatous

Oxycaryum cubense (Poepp. & Kunth in Kunth) Lye

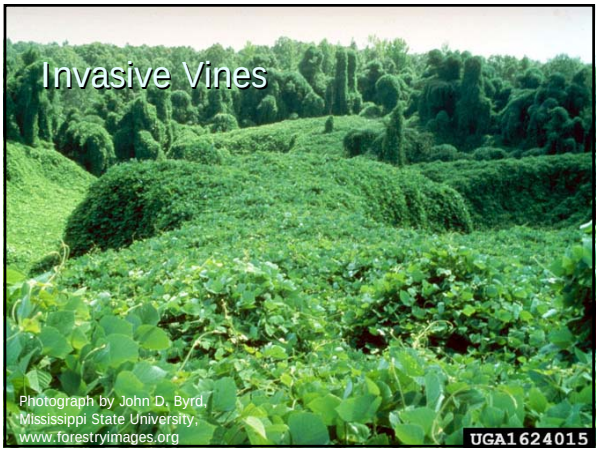
- Perennial
- Widespread in tropics
- Floating mats in swamps & ponds
- Known from SEUS pre-1900 – TX, LA, s AL, FL
- 1996 – s GA
- 2004 – Tennessee-Tombigbee Drainage in MS & AL



Impounded bayswamp
Lowndes Co., GA



Oxycaryum cubense



Invasive Vines

Photograph by John D. Byrd, Mississippi State University, www.forestryimages.org

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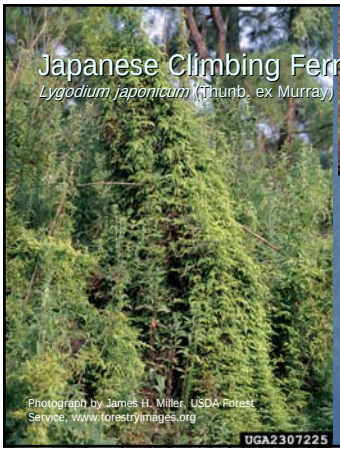

Japanese Climbing Fern

Lygodium japonicum (Thunb. ex Murray) Sw.

Photograph by James H. Miller, USDA Forest Service, www.forestryimages.org

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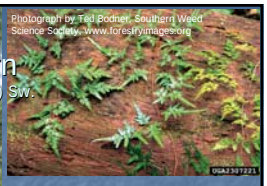


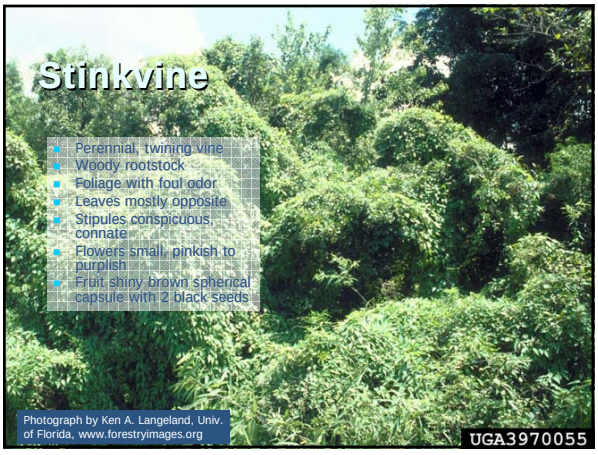
Photograph by Ted Bodner, Southern Weed Science Society, www.forestryimages.org

- Native e Asia
- Naturalized from cultivation
- e TX to NC, mostly coastal plain
- Common invasive weed of natural areas in s GA
- Climbing by leaf rachis (not stem!), ~30m
- Reproducing by spores
- Spores dispersed by wind

Stinkvine, Skunkvine

Paederia foetida L. (Rubiaceae)

- Native to E, S Asia
- Pre-1897, introduced by USDA as potential fiber plant to Brooksville, FL
- By 1916 already troublesome weed in FL
- Escaping to thickets, fencerows in FL (Small 1933)



Stinkvine

- Perennial, twining vine
- Woody rootstock
- Foliage with foul odor
- Leaves mostly opposite
- Stipules conspicuous, connate
- Flowers small, pinkish to purplish
- Fruit shiny brown spherical capsule with 2 black seeds

Photograph by Ken A. Langeland, Univ. of Florida, www.forestryimages.org

UGA3970055

Stinkvine

Cat's claw vine

Macfadyena unguis-cati (L.) Gentry (Bignoniaceae)

- Native to tropical America
- Cultivated ornamental
- Naturalized through much of FL, including Leon Co., also LA
- Expected in S GA

Cat's Claw Vine

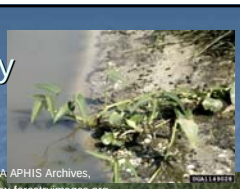
- High-climbing woody vine
- Climbing by tendrils
- Opposite, compound leaves, each with 2 leaflets & 3-forked tendril
- Tips of tendrils stiff, hooked, claw-like
- Leaves & tendrils similar to native Cross Vine (*Bignonia capreolata* L.)
- Flowers large, showy, tubular, bright yellow (orange to reddish orange in Cross Vine)
- Fruits long (~50 cm/20 in), slender, flattened

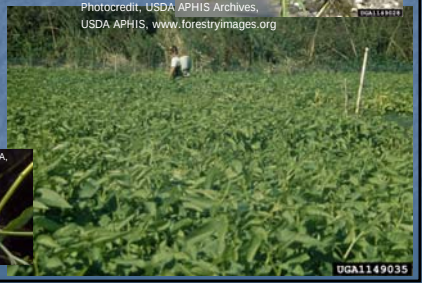
Swamp Morning-glory

Ipomoea aquatica Forsk.
(Convolvulaceae)

- Native to Asia
- Introduced in FL
- Edible leaves sold in farmer's markets
- Readily propagated from stem cuttings
- Planted locally as food source

Swamp Morning-glory





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