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## Florida Department of Agriculture and Consumer Services Division of Plant Industry

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### Identifying Grasses: Starting with a Few Easy Ones

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#### INTRODUCTION

Grasses make up one of the most economically useful families in the plant kingdom, providing crops such as rice, corn (maize), wheat, oats, barley, millet, sorghum, rye and sugar cane, as well as forage for livestock and many horticulturally valuable ornamental plants. Grasses are also biologically valuable as dominant elements of several major ecosystems on every continent except Antarctica, for example, North American prairies, Asian steppes, African savannahs, Australian rangelands and South American pampas. Grasses are necessary to maintain the structure of these plant communities and provide food and shelter for wildlife living in grasslands. As important as grasses are to people, few people learn to recognize grasses other than the cereal grain crops. This document offers information to assist in learning to identify grasses and provides descriptions of a few species beginners can use to gain confidence as they become more familiar with identifying grasses.

Perhaps one reason the grasses seem so difficult to identify lies in the small size of their flowers. We often depend on recognizing flowers to identify plant species. A hand lens or microscope is usually required to see the flower parts of grasses clearly, but some grass flowers are distinctive even without magnification. Other barriers to confront with identifying grasses include the specialized structures of the grass plant and the special vocabulary used to describe these structures in botanical literature. General information about the morphology of grass plants and a glossary of terms used to describe grasses are included in this publication. These tools will help the reader pursue skills needed to make more complicated identifications of grasses after initial success with the “easy to identify” grasses included here.

The species in this document were chosen because each has some distinctive identifying characteristics, and each has been submitted multiple times to the botanists of the Division of Plant Industry (DPI) for identification within the past 10 years. The descriptions include the species’ scientific and common names, diagnostic features for quick identification and a more detailed description of the species with information about habitat, uses and geographic distribution. The species included are either native to Florida or invasive species disruptive to native plant communities.

#### BACKGROUND

The grass family may be called Gramineae, the traditional name, or Poaceae, conforming to more recent conventions of naming plant families. Both names are valid, but we use Gramineae in this publication. Botanists recognize 10,000 to 12,000 species of grasses, making Gramineae the fourth or fifth largest plant family in terms of species number. These disagreements are sometimes based on differing perspectives about plants considered subspecies or varieties. Some botanists see them as distinct species while others think they do not reach that level. We learn to live with the ambiguity and the absence of an exact number, but the range is probably accurate enough. In Florida, the number of native or naturalized grasses, according to the Atlas of Florida Plants (2020), is 458, including the subspecies and varieties, with 266 native and 192 non-native, while Hall (2019) reports the number as 463. Several grass species are listed as state or federal noxious weeds and as invasive species by various non-regulatory groups.

#### GRASS PLANT MORPHOLOGY (structure)

Although all grasses (except for bamboos) are simple, non-woody plants, a brief review of some aspects of their structure can help clarify where to look for identifying characteristics described in the text for each species.

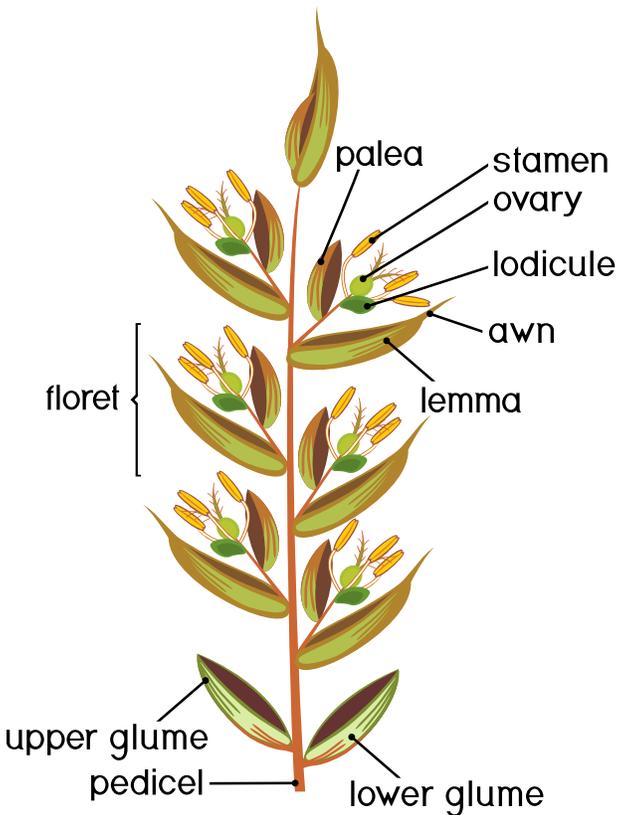


**Roots:** Grasses have abundant fibrous roots, as opposed to a single tap root. Some, like corn, can have above ground roots originating high on the stem. These roots serve to prop up the plant and are called “prop” roots or, more formally, “adventitious” roots.

**Stems:** Some grass species have underground, horizontal stems (rhizomes) running below ground with new leaves arising from the nodes. (A node is the area on the stem of a plant at which leaves are attached.) Others have above ground horizontal stems, called “stolons,” running along the soil surface with new leaves also arising from the nodes. These grasses are sometimes called “running” grasses. Grasses without these horizontal stems are called “clumping” or, more formally, “cespitose.” The vertical stems of grasses are known as “culms” and are usually hollow except at the nodes.

**Leaves:** Grass leaves consist of a tubular sheath, wrapping the stem or tightly folded around it, starting from the node of origin and a blade or lamina bending away from the stem at the next higher node. The blade is usually flattened. At the point of transition from sheath to lamina is a structure called a “ligule.” The ligule can be a membranous flange, a row of hairs or a slight ridge.

**Inflorescences:** Yes, grasses have flowers. For most plant families, the inflorescence is based on flowers and is defined by the arrangement of flower clusters on branches that support them. Grass flowers are enclosed in a pair of modified leaves, and the flowers with these leaf-like bracts compose a spikelet. For grasses, the arrangement of these spikelets determines the inflorescence type, usually a variation on the basic forms of a simple spike or branched panicle. The main axis of the inflorescence is the rachis.



**Figure 1: Diagram grass inflorescence.**  
Image from Shutterstock

**Flowers:** Grass flowers (spikelets) have no sepals or petals, but many have a pair of tiny, scale-like structures, called “lodicules,” attached in the location petals or sepals might be expected on other flowers. Spikelets typically begin with a pair of bracts, called “glumes,” more specifically, the first or lower glume and the second or upper glume. Within the glumes are two additional bracts, the “lemma” and “palea,” although many grass species have variations on this pattern. In a generalized grass flower, the lemma partly encloses the palea which, in turn, encloses the stamens, stigma, ovary and lodicules, forming the floret within the spikelet. When grass flowers mature, the lodicules swell to push the lemma and palea apart, allowing the stamens and stigmas to be exposed.(Fig. 1) The main axis of the spikelet is the “rachilla.”

**Fruit:** Each fertile grass flower potentially produces a fruit with a single seed called a “caryopsis” and is familiar as the grain of cereal grasses.

## LIST OF SPECIES INCLUDED

<i>Arundo donax</i>	giant reed
<i>Dactyloctenium aegyptium</i>	Durban crowfootgrass
<i>Imperata cylindrica</i>	cogon grass
<i>Melinis repens</i>	rose Natalgrass
<i>Tripsacum dactyloides</i>	eastern gamagrass; Fakahatchee grass
<i>Uniola paniculata</i>	sea oats

### ARUNDO DONAX

**Arundo donax L. (giant reed)**, from a genus of five species of Mediterranean, African and Asian origin.

**What's in a name?** The genus name *Arundo* is the Latin word for a reed or cane, while *donax* is the Greek name for a particular kind of reed.

Selected synonyms:

*Amphidonax bengalensis*

*Arundo bambusifolia*

*Cynodon donax*

*Donax arundinaceus*

*Scolochloa arundinacea*

**What to look for:** A robust, erect, perennial grass, 2-8 m tall forming dense thickets, with a large, silvery, upright panicle and leaves with a conspicuous pale tan collar at the base of the leaf blade.

**Description:** Although the original nativity of this species is unclear because of its widespread cultivation throughout Asia, southern Europe, northern Africa and the Middle East, *Arundo donax* is likely native in eastern Asia. It was introduced in California in the early 1800s and planted in the southern United States as an ornamental and for erosion control. It has escaped and become an invasive pest in wet natural areas. In Florida, it can be seen growing in open and disturbed locations of numerous counties from the panhandle to Miami-Dade and Monroe counties, but it has not been documented in the Florida Keys.

Clumps of this tall reed grow from stout, spreading rhizomes, with culms 2-3 cm in diameter. The leaves are 30-100 cm long and 2-7 cm wide with an alternate and distichous arrangement, that is, they grow in a single plane on opposite sides of the stem with each leaf held alternately from one side of the stem to the other, forming two rows. A characteristic pale beige (but sometimes darker tan), clasping collar surrounds the culm at the base of each leaf. The inflorescence is a large (30-60 cm long) plumose (feathery) panicle, silvery-white when mature. In Florida, flowering can occur throughout the year. A cultivar named 'Variegata' is available in the nursery trade, but it has also escaped cultivation in Florida. This grass has been used in construction, basketry and erosion control as well as to make reeds for wind instruments.

**Might be confused with:** other large reed-like species, including *Phragmites australis* and several bamboos, such as *Phyllostachys aurea*. *Phragmites australis* has culms with distinctive longitudinal grooves; in addition, it is shorter in stature (to 3 m tall) and has narrower leaves (10-35 mm wide) than *Arundo donax*. The leaves of bamboos have a narrow extension of the leaf blade (like a short petiole) attached to the culm while *Arundo donax* has clasping leaves forming a collar around the culm. (Allred, 2003; Bryson and DeFelice, 2009; Hall, 2019; Mabberley, 2017; Quattrocchi, 2006; Taylor, 2009; Wunderlin and Hansen, 2011; <https://www.fs.fed.us/database/feis/plants/graminoid/arudon/all.html#INTRODUCTORY> [accessed 15 February 2021]).

*Arundo donax*  
Photo by Shirley Denton



*Arundo donax*, giant reed, conspicuous pale tan collar at the base of the leaf blade.

Photo by Shirley Denton, Atlas of Florida Plants



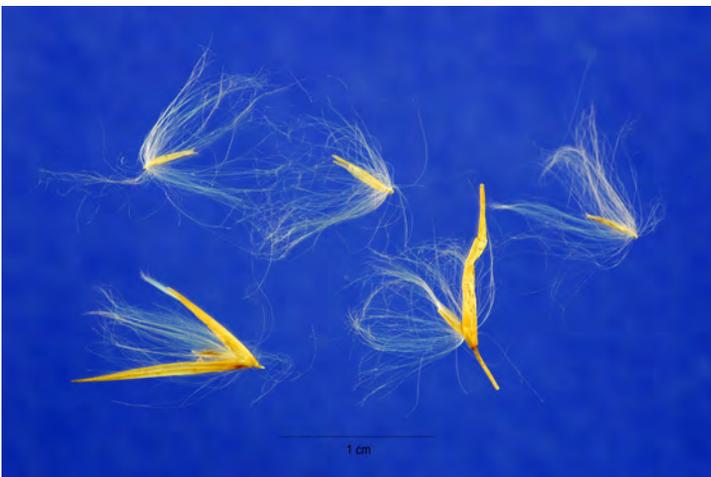
*Arundo donax*, giant reed, whole plant in habitat.

Photo by John Ruter, Bugwood



*Arundo donax*, giant reed, variegated form.

Photo by Chris Evans, Bugwood



*Arundo donax*, giant reed, florets.

Photo by Steve Hurst, hosted by the USDA-NRCS PLANTS Database



*Arundo donax*, giant reed, inflorescence.

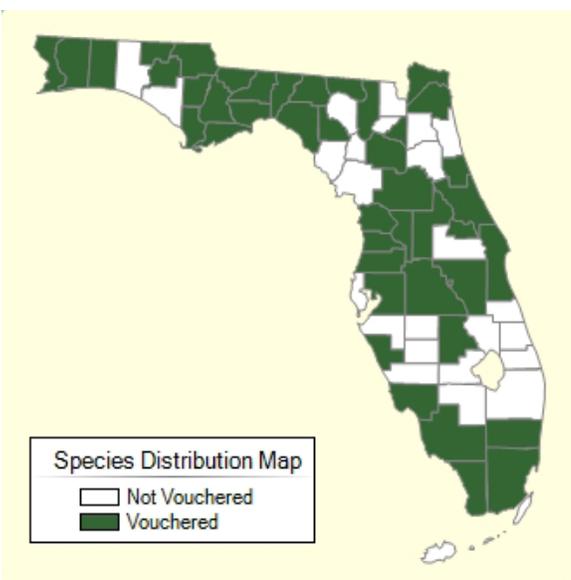
Image from Shutterstock



**Arundo donax, giant reed, ligule.**  
Photo by Mark A. Garland, hosted by the USDA-NRCS PLANTS Database



**Arundo donax, giant reed, rhizome.**  
Photo by Mark A. Garland, hosted by the USDA-NRCS PLANTS Database



**Arundo donax in Florida.**  
Map from Atlas of Florida Plants

## **DACTYLOCTENIUM AEGYPTIUM**

***Dactyloctenium aegyptium* (L.) Willd. ex Asch. & Schweinf. (Durban crowfootgrass)** from a genus of 10-13 species native to warm regions around the world.

**What's in a name?** This genus name is from the Greek words for finger, *dactylos*, and small comb, *ktenion*, to describe the finger-like inflorescences and the rows of spikelets like the teeth of a comb. The species epithet, *aegyptium*, refers to Egypt, one of the many African countries to which it is native.

Selected synonyms:

*Aegilops saccharinum* Walter  
*Chloris mucronata* Michaux  
*Cynosurus aegyptius* Linnaeus  
*Eleusine aegyptia* Desfontaines

**What to look for:** A grass in disturbed areas with light sandy soils having four to eight finger-like (digitate) inflorescences coming together at a single point, like an open mini-umbrella, with ribs but no fabric between them.

**Description:** This weedy annual or short-lived perennial, now widely distributed throughout warm regions, is thought to be native to the Old World Tropics. In Africa, the seeds of this species have been used as a medicine, fish poison and famine food. The distinctive inflorescence makes this grass easily identifiable, but it can be a pest plant in the wrong place. It can spread easily in loose sandy soil, sometimes a good thing, other times, as in sandy crop fields, a problem. This grass is a serious weed of cotton, sugar cane, peanuts and corn in tropical and subtropical countries. It has been listed as a Category II invasive species by the Florida Invasive Species Council (formerly Florida Exotic Pest Plant Council) as a potentially habitat-altering plant in Central and South Florida. It is commonly found throughout Florida and has been documented in almost every county in the state.

The culms are 10-35 cm long (but sometimes up to 1 m long), spreading horizontally, but branching and ascending as well as rooting at the nodes. The grass appears stoloniferous and can form mats over time. The sheaths and leaf blades have bulbous based (papillose) hairs. Leaf blades can be 5-22 cm long and 2-8 mm wide. The ligules are membranes 0.5-1.5 mm long, fringed with fine hairs. The inflorescence is technically a panicle with two to six branches all in one plane, 1.5-7.0 cm long, with the first few spikelets touching adjacent inflorescence branches. The rachis of each branch appears to extend for 1-6 mm beyond the final spikelet. The spikelets are about 5 mm long, in a comb-like, flattened arrangement in two rows but on only one side of the rachis. The light tan to reddish-brown seeds are roughly cube-shaped, 1 mm long and wide and transversely ridged.

**Might be confused with:** *Dactyloctenium aegyptium* is similar in appearance to other members of this distinctive genus, but it is the only species within the genus documented in Florida. In other areas of the United States, *D. radulans* is known to occur, but the panicle branches of that species are usually shorter (0.4-1.5 cm) than those of *D. aegyptium* (1.5-70 cm), and most spikelets of *D. radulans* touch spikelets of adjacent panicle branches. (Florida Exotic Plant Pest Council, 2019; Hatch, 2003; Mabberley, 2017; Quattrocchi, 2006; Taylor, 2009; Wunderlin and Hansen 2011; <https://www.cabi.org/isc/datasheet/19321#tosummaryOfInvasivene> [accessed 11 January 2021].)



***Dactyloctenium aegyptium*, Durban crowfootgrass, close view of grain (mm scale).**

Photo by Patti J. Anderson, FDACS-DPI



***Dactyloctenium aegyptium*, Durban crowfootgrass, close view of spikelets (mm scale).**

Photo by Patti J. Anderson, FDACS-DPI

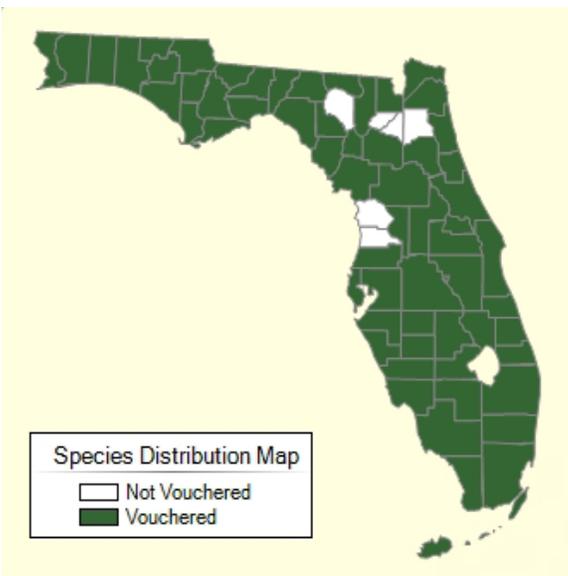


***Dactyloctenium aegyptium***

Photo by Keith Bradley

*Dactyloctenium aegyptium*, Durban crowfootgrass, growing in landscape.

Photo by Keith Bradley



*Dactyloctenium aegyptium* in Florida.

Map from Atlas of Florida Plants



**Plate 161.** DACTYLOCTENIUM AEGYPTIUM (L.) P. Beauv. 1, habit,  $\times \frac{3}{8}$ ; 2, portion of a spike,  $\times 6$ ; 3, spikelet,  $\times 8$ ; 4, lower glume,  $\times 12$ ; 5, upper glume,  $\times 12$ ; 6, lemma,  $\times 12$ ; 7, palea,  $\times 12$ ; 8, flower,  $\times 20$ ; 9, grain,  $\times 20$ ; 10, ligule,  $\times 6$ . (Haines W. 2026.)

***Dactyloctenium aegyptium*, Durban crowfootgrass, Illustration.**  
Illustration from delta- intkey Watson, et al., 1992

## **IMPERATA CYLINDRICA**

***Imperata cylindrica* (L.) Beauv. (cogongrass)**, from a genus of 13 species widely distributed in tropical and warm temperate areas.

**What's in a name?** The genus name, *Imperata*, is a tribute to an Italian apothecary (a person who prepared chemical and botanical medicines for doctors to administer) named Ferrante Imperato (1550-1625). The species name refers to the cylindrical shape of the inflorescence. *Imperata brasiliensis* Trin., Brazilian satintail, is recognized as a separate species by some botanists, but others consider it a synonym of *I. cylindrica*, meaning only one species is found in Florida. The two overlap in most characteristics, although there is a technical difference in the number of stamens. Brazilian satintail hybridizes with cogongrass, offering some justification they should be regarded as a single, highly variable species. Both are listed as federal noxious weeds and are regulated by the state of Florida.

Selected synonyms:

*Imperata arundinacea* Cirillo

*Imperata arundinacea* Cirillo, var. *africana* Andersson

*Imperata cylindrica* (Linnaeus) Palisot de Beauvois, var. *africana* (Andersson) C. E. Hubbard

*Lagurus cylindricus* Linnaeus

*Saccharum cylindricum* (Linnaeus) Lamarck

**What to look for:** A grass in disturbed areas, such as roadsides and powerlines, as well as tilled pastures and orchards. The leaves are up to a meter long and usually have an off-center, bright white mid-vein. If the grass is in flower, the inflorescence is like an elongated, cylindrical spike with cottony, silvery-white hairs gleaming in the sun. The scaly, segmented rhizome is also a giveaway, with its very sharply pointed growing tips. This grass tends to form circular patches in the landscape as its rhizomes spread from the center in all directions.

**Description:** This species has often been described as one of the 10 worst weeds in the world. Both FDACS and USDA include cogongrass on their lists of noxious weeds. This perennial grass expands its territory with underground rhizomes producing new shoots while wind-dispersed seeds spread to more distant locations. Dense stands of this grass can eventually exclude other vegetation from an area by disrupting the processes of germination, growth and decomposition of other species, and by the allelopathic effect of chemicals produced by the grass. Cogongrass was imported to the southeastern United States several times since the early 1900s and into Florida in the 1940s, both accidentally in packing materials and purposefully for forage and erosion control.

This medium to light yellowish-green grass is quite variable in the details of its structures. Leaf blades arise near the base of the plant and can split to form mats of fibers as they age. Leaves of cogongrass are typically 30-95 cm long but can be 150 cm (some reportedly 2 m), and usually 3-11 mm wide. The ligule is a membrane 0.2-3.5 mm long, sometimes with a minute fringe of hairs. The margins are scabrous (rough, like sandpaper, and can cut human skin) and finely serrate. Midveins of the blades are often bright white and almost always off center (dividing the blade asymmetrically). The flower clusters are narrow, cylindrical panicles about 5-24 cm long with silky white spikelets to nearly 5 mm long. The silky hairs extend beyond the spikelet. This grass is frequently found in disturbed areas, such as roadsides, old fields, pastures and natural areas that border them. Because this grass is displacing native plants, it has been placed on the Florida Invasive Species Council (formerly Florida Exotic Plant Pest Council, FLEPPC) list of invasive species (Category I). Cultivars with red or reddish leaves (for example, 'Red Baron') are sold as ornamentals, but these cultivars can revert to green leaves and might also become invasive.

**Might be confused with:** Johnson grass (*Sorghum halepense*), vasey grass (*Paspalum urvillei*) and even broomsedge (*Andropogon virginicus*) have been confused with cogongrass when not in flower. None of these have a dense, cylindrical plume-like flower cluster like cogongrass, nor bloom between March and May. Vasey grass, silver beardgrass and broomsedge all produce an obvious aboveground culm or stem (lacking in cogongrass), and although Johnson grass leaves have a prominent, white midvein, its leaves are wider and do not have serrate margins. Rabbitsfoot grass (*Polypogon monspeliensis*) in flower might be confused with cogongrass because of its dense, cylindrical panicle, but the color is greenish to yellow and turning brown with age, and it is almost always found growing in wet, disturbed areas, such as roadside ditches. (Bryson and Carter, 1993; Coile and Shilling, 1993; Evans, *et al.*, 2006; FLEPPC, 2019; Hall, 2019; Holm, *et al.* 1977; Langeland, *et al.* 2008; Lucardi, *et al.*, 2014; Mabberley, 2017).

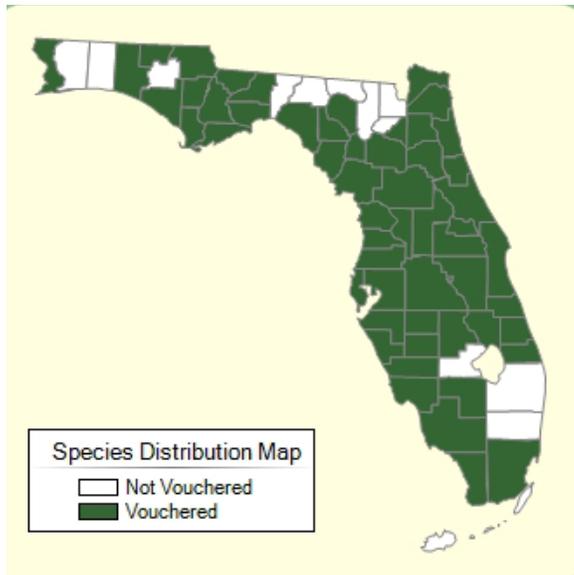


***Imperata cylindrica* (cogongrass).**  
Photo by Shirley Denton, Atlas of Florida Plants

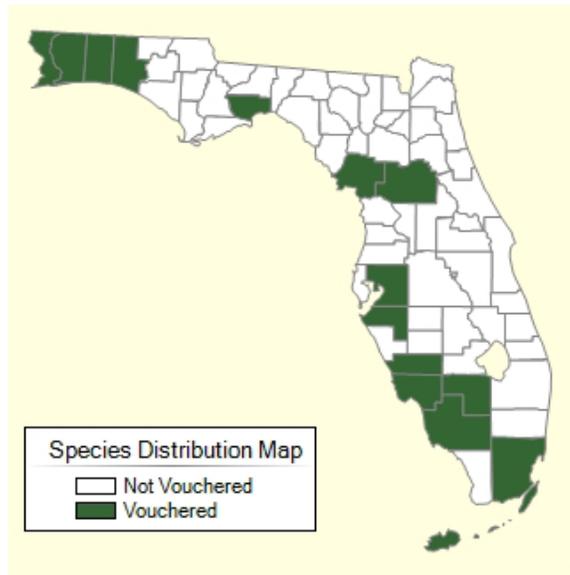


***Polypogon monspeliensis* (rabbitsfoot grass).**  
Brother Alfred Brousseau  
copyright 1995 Brother Eric Vogel F.S.C.,  
St. Mary's College of California

Photo by Alfred Brousseau, Atlas of Florida Plants



***Imperata cylindrica* in Florida.**  
Map from Atlas of Florida Plants



***Imperata brasiliensis* in Florida.**  
Map from Atlas of Florida Plants



***Imperata cylindrica*, cogongrass, inflorescence.**  
Photo from Shutterstock



***Imperata cylindrica*, cogongrass, rhizome.**  
Photo by Chris Evans, Bugwood.org

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## **MELINIS REPENS**

**Melinis repens (Willd.) Zizka. (rose Natalgrass)** from a genus of 22 species native to tropical and southern Africa.

**What's in a name?** The origin of the genus name seems unclear: the name might be derived from the Greek *melas*, meaning "black," referring to the black seeds; from the Latin *mel*, meaning "honey," and could describe a different species in the genus, *M. minutiflora*, known as molasses grass or from the Greek word for millet (*meline*). We are confident the species epithet, *repens*, comes from the Latin word for creeping. The species was recently (until 1988) also known as *Rhynchelytrum repens* (Willd.) C. E. Hubb. and many older references use the name.

Selected synonyms:

*Erianthus repens* (Willdenow) Palisot de Beauvois  
*Rhynchelytrum repens* (Willdenow) C. E. Hubbard  
*Saccharum repens* Willdenow  
*Melinis rosea* (Nees von Esenbeck) Hackel  
*Monachyron roseum* (Nees von Esenbeck) Parlatores  
*Panicum roseum* (Nees von Esenbeck) Steudel

**What to look for:** A grass in dry, disturbed areas and open pastures with silky, pink hairs suggesting the illusion of cotton candy.

**Description:** This is a weedy annual or short-lived perennial, now widely distributed throughout the tropics and subtropics, thought to be native in southern Africa. Introduced to the United States as a forage grass, *M. repens* has become naturalized throughout the southern states from North Carolina to California. A field full of rose Natalgrass is a beautiful sight, especially when backlit by the setting sun. Unfortunately, its beauty belies its weedy tendencies, and it has spread to 55 of Florida's 67 counties. This grass was brought to Florida about 1875 and was sold as a landscape ornamental and for use in restoring former mines.

The culms are 40–150 cm long, creeping (decumbent) and usually rooting at the lower nodes. The erect to spreading leaf blades are 4-27 cm long and 2-9 mm wide. The flower clusters are erect panicles, 6-22 cm long and 3-12 cm wide, borne in late summer or early fall, with distinctive spikelets about 4 mm long, their glumes densely covered in long and silky, pink or red hairs turning silver with age. This grass is commonly found in disturbed areas and open grasslands in a wide range of soil conditions throughout the state. Because this grass is displacing native plants, it has been placed on the Florida Invasive Species Council (formerly Florida Exotic Plant Pest Council, FLEPPC) list of invasive species (Category I).

**Might be confused with:** *Melinis repens* is similar to a grass in the same genus, *M. minutiflora*, known as molasses grass, a tropical forage grass known to be an invasive species in Hawaii and parts of South America. Rose Natalgrass usually has spikelets covered with long, silky pink to lavender-purple hairs. Molasses grass culms often form dense mats, and its spikelets are relatively hairless. The fruits (caryopses) of *M. minutiflora* are 0.9-1.2mm long, while those of *M. repens* are 1.3-1.9 mm long. In Florida, *M. repens* is found in almost every county, but *M. minutiflora* has been documented in only six counties. There are reports of confusion with *Tricholaena teneriffae*, but this species is not found in the United States. (Florida Exotic Plant Pest Council, 2019; Langland *et al.*, 2008; Mabberley, 2017; Quattrocchi, 2006; Taylor, 2009; Wipff, 2003; Wunderlin and Hansen 2011; [https://keyserver.lucidcentral.org/weeds/data/media/Html/melinis\\_repens.htm](https://keyserver.lucidcentral.org/weeds/data/media/Html/melinis_repens.htm) [accessed 28 December 2020]).



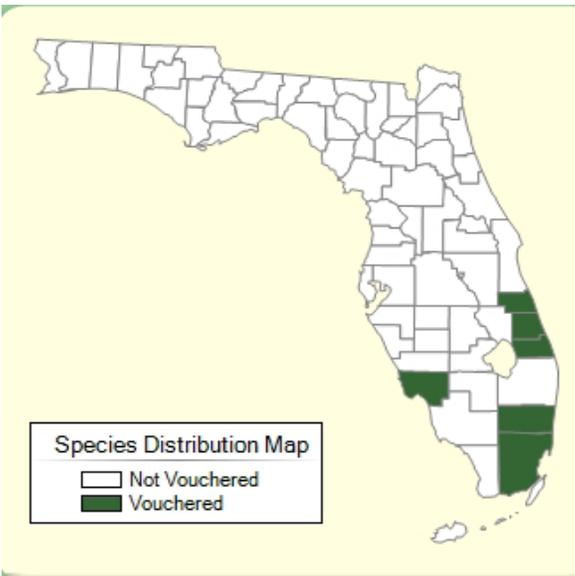
**Melinis repens, rose Natalgrass, close view of floret.**  
Photo by Patti J. Anderson, FDACS-DPI



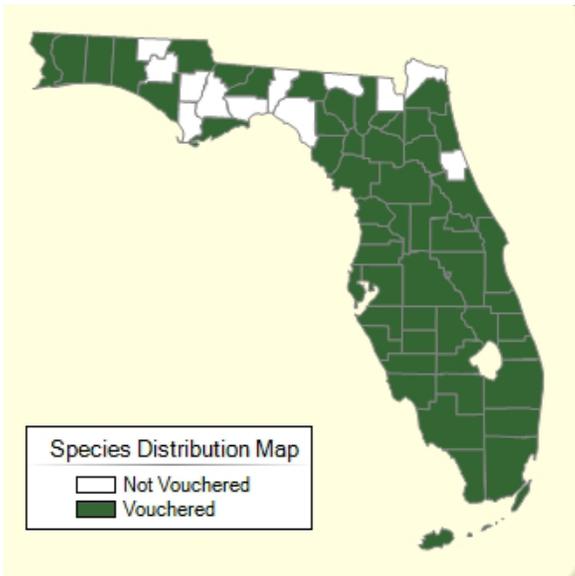
**Melinis repens, rose Natalgrass, inflorescence.**  
Photo by Frank Soltes, Atlas of Florida Plants



*Melinis repens*, rose Natalgrass, silvery pink inflorescences in a landscape.  
Photo by Patti J. Anderson, FDACS-DPI



*M. minutiflora* in Florida.  
Map from Atlas of Florida Plants



*M. repens* in Florida.  
Map from Atlas of Florida Plants

## TRIPSACUM DACTYLOIDES

*Tripsacum dactyloides* (L.) L. (**eastern gamagrass; Fakahatcheegrass**), from a genus of 16 species widely distributed in tropical and warm temperate areas.

**What's in a name?** The genus name is obscure, but although it remains in question, several references suggest *tripsis* meaning "rubbing" or "rubbed" and *psakas* meaning a "small piece broken off" suggesting the polished sheen (rubbed) of the seed head, which also breaks apart easily into individual grains. The specific epithet, *dactyloides*, refers to the finger-like branches of the inflorescence.

Selected synonyms:

*Coix dactyloides*

*Dactylodes angulatum*

*Dactylodes dactyloides*

*Tripsacum monostachyon*

**What to look for:** This grass has arching, medium green leaves with a white midrib, growing in a circular mound. The easy identification depends on seeing plants in flower or fruit. The stem or culm can be topped with a spike of one to five narrowly cylindrical "fingers" of staminate (pollen bearing) flowers growing above female (seed producing) flowers. The female flowers appear sunken into the hardened rachis that holds them.

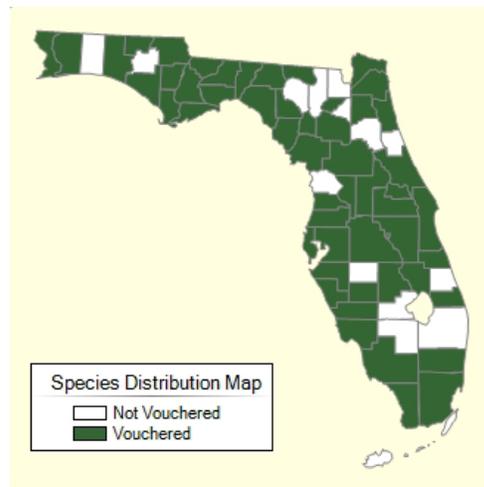
**Description:** This perennial species is native to Florida and most of central and eastern United States from New York and Michigan in the north and westward to the eastern edge of Nebraska and Texas as well as southward through Mexico and northern South America. The distinctive inflorescence makes this grass easily identifiable, and it is found growing in wet habitats including riverbanks, swamps and disturbed sites. This grass is also planted as an ornamental and as a forage. The flowers can be seen from spring through fall. With a good imagination, the developing fruit and hardened grains could seem similar to a single row of corn kernels. *Tripsacum* is a fairly close relative of corn (*Zea mays*) and hybrids of the two species have been observed. Early Floridians reportedly carried grains of *Tripsacum* on their travels as a snack food.

*Tripsacum dactyloides* grows from a short, thick, knotty rhizome to a culm (stem) height of 2 m or more. The stem and leaf sheaths are sometimes pink tinged. Leaves can be 80 cm long and about 23 cm (but rarely up to 35 cm) wide. The blades are flattened (not folded together), mostly glabrous and tapering to a point at the tip. The ligule is a tiny ciliated membrane. The inflorescence can be 10-26 cm long with one to several erect spikes having sessile male spikelets above the basal female spikelets.

**Might be confused with:** other bunching grasses with arching leaves such as *Miscanthus chinensis*, other grasses with a white midrib such as *Imperata cylindrica* (cogongrass) or grasses with spiked inflorescences, for example, *Rottboellia cochinchinensis* (itchgrass). *Miscanthus chinensis* has silvery inflorescences with long awns giving them a feathery appearance. The midribs of cogongrass leaves are off-center, unlike those of Fakahatcheegrass. Although the inflorescence of *Rottboellia cochinchinensis* is similar to that of *Tripsacum dactyloides*, itchgrass leaves are covered with hairs (the hairs causing the itch found in the common name), while Fakahatcheegrass leaves are mostly glabrous (without hairs). (Austin, 2004; Barkworth, 2003; Bryson and DeFelice, 2009; Hall, 2019; Mabberley 2017; Quattrocchi, 2006; Taylor, 2009; Wunderlin and Hansen, 2011).



*Tripsacum dactyloides* (Fakahatcheegrass), hardened grain breaking apart. Photo by Steve Hurst, hosted by the USDA-NRCS PLANTS Database



*Tripsacum dactyloides* in Florida. Map from Atlas of Florida Plants



*Tripsacum dactyloides* (Fakahatcheegrass) whole plant with inflorescence.  
Photo by Shirley Denton, Atlas of Florida Plants



*Miscanthus chinensis* (Chinese silver grass), a species that could be mistaken for *Tripsacum dactyloides*.  
Photo from Shutterstock



*Imperata cylindrica*, (cogongrass), a species that could be mistaken for *Tripsacum dactyloides*.  
Photo by Shirley Denton, Atlas of Florida Plants



*Rottboellia cochinchinensis* (itchgrass), a species that could be mistaken for *Tripsacum dactyloides*.  
Photo by Keith Bradley, Atlas of Florida Plants

## **UNIOLA PANICULATA**

***Uniola paniculata* L. (seaoats)**, from a genus of eight species native to tropical and warm temperate areas.

**What's in a name?** The genus name is derived from the Latin “unione” and appears to refer to “united” spikelets. The specific epithet refers to the inflorescence, a panicle, defined as a loose branching cluster of flowers.

Selected synonyms:

*Briza caroliniana*  
*Trisiola paniculata*  
*Uniola floridana*  
*Uniola maritima*

**What to look for:** A tall grass on a beach or dune with arching stems and drooping, closely spaced, golden brown inflorescences.

**Description:** *Uniola paniculata* is native to Florida, where it has been documented in 29 coastal counties and from Delaware to Texas along the coastal United States. Both the habitat and inflorescences of this species help distinguish it from other grasses. In Florida, it is unlawful to harvest or remove *U. paniculata* from any public land or from any private land without consent of the owner. Of course, nurseries can propagate the species in order to sell commercially grown plants; the grass cannot be harvested for sale directly from the dunes they protect (according to Florida Statutes, 2020; 161.242). Seaoats are an essential element of Florida's coastal dunes and beaches and help stabilize the shoreline. Traditionally, indigenous people of what is now the southeastern United States and Caribbean islands used the seeds as food.

*Uniola paniculata* grows from stout rhizomes, an adaptation helping to stabilize sandy beach soils. This perennial grass reaches 2 m or even taller with leaves as much as 60 cm long and up to 10 mm wide. The ligules are tiny ciliated membranes fringed with hairs about 3 mm long. The inflorescences are dense, drooping panicles of showy, flattened spikelets and can reach 60 cm or more in length.

**Might be confused with:** *Chasmanthium latifolium* (river oats, broadleaf woodoats), but this grass is smaller in stature (about 1 m tall), with leaves only 20 cm long and 25 mm wide. This species is found in Nassau County and the central and western Panhandle, growing in wet hammocks, floodplain forests and near waterways. Woodoats are not salt tolerant and are quite unlikely to be seen on beaches and dunes where seaoats are found. Although the common name “seaoats” suggests a resemblance to the edible grain, oats, the two species are quite different in appearance and ecology. (Austin, 2004; Yates, 2003; Hall, 2019; Mabberley, 2017; Quattrocchi, 2006; Taylor, 2009; Wunderlin and Hansen, 2011).



***Uniola paniculata*, seaoats. Tall grass on a beach or dune with drooping, closely spaced inflorescences.**

Photo from Shutterstock



***Uniola paniculata*, seaoats. Whole plant in habitat.**

Photo from Shutterstock

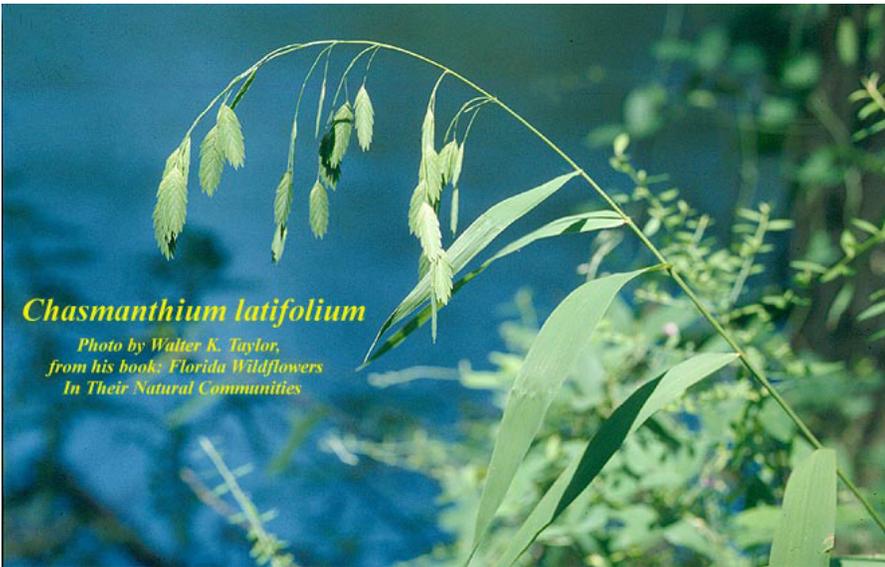


**Uniola paniculata, sea oats. Inflorescence.**  
Photo by Jean-Lou Justine, Wikimedia



**Uniola paniculata**  
Photo by Keith Bradley

**Uniola paniculata, sea oats. Close view of inflorescence.**  
Photo by Keith Bradley, Atlas of Florida Plants



**Chasmanthium latifolium**  
Photo by Walter K. Taylor,  
from his book: Florida Wildflowers  
In Their Natural Communities

**Chasmanthium latifolium, Indian woodoats. Leaves and inflorescences.**  
Photo by Walter K. Taylor, Atlas of Florida Plants



**Avena sativa, edible oats. Leaves and inflorescences.**  
Photo by H. Zell, wikimedia



**Uniola paniculata in Florida.**  
Map from Atlas of Florida Plants

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**GLOSSARY**

<b>Term</b>	<b>Definition</b>
Annual	a plant that persists for only one growing season; in grasses, the underground parts are fibrous rather than rhizomatous
Auricle	ear-like lobes at the base of a blade or the top of the sheath
Awn	a stiff bristle extending from the midrib or other veins of glumes and lemmas
Blade	the part of the grass leaf above the sheath
Bract	a reduced leaf-like structure, including glumes, lemma and palea of the floret
Bristle	a stiff, slender hair-like appendage
Bunchgrass	a grass without stolons or rhizomes; growth habit of forming a clump (or bunch)
Caryopsis	seed of a grass (also called grain)
Cespitose	growing in dense, matlike clumps or tufts without creeping stems
Ciliate	fringed with hairs on the margin
Collar	the outside of the grass leaf at the junction of the blade and sheath
Convolute	rolled longitudinally, with one margin rolled inside the other
Culm	the vertical, above ground stem of a grass plant
Erose	irregularly notched at the apex, appearing gnawed or eroded
Floret	an individual grass flower including its two bracts (lemma and palea), stamens and pistil
Glabrous	smooth, without hairs
Glaucous	covered with powdery or waxy bloom as a plum or grapes
Glumes	pair of bracts at the base of a spikelet
Hyaline	colorless and translucent
Inflorescence	the flowering part of a plant
Internode	the part of a stem between two successive nodes
Involute	rolled inward on the upper surface with each margin separate
Lemma	the lower bract of the two bracts of a grass floret
Ligule	the membranous or hairy, usually flap-like appendage on the inside of a leaf at the junction of the sheath and blade
Lodicules	small scales (analogous to petals) outside the stamens in a grass flower
Membranous	thin, like a membrane
Nerve	another term for vein
Node	region on a stem where leaves, branches and some flowers initiate growth
Palea	the inner of the two bracts of a grass floret
Pedice	the stalk of a spikelet
Perennial	a plant that persists for many growing seasons; in grasses, rhizomes are usually present
Rachis	the stalk of the grass inflorescence that bears the spikelets
Rachilla	the stalk of a spikelet that bears the florets
Rhizome	a modified stem that spreads underground, giving rise to new leaves and roots
Scabrous	roughened with stout projections
Seedhead	the flowering portion of a grass plant
Sheath	the part of a leaf that envelopes the stem
Spike	an unbranched inflorescence in which the spikelets are sessile on a rachis
Spikelet	the unit of inflorescence in grasses consisting of two glumes and one or more florets
Stolon	an above ground modified horizontal stem