

# Is Cogon Grass Really An Exotic?

By David W. Hall

Cogon grass (*Imperata cylindrica*) has been considered a non-native plant in Florida. This species, native to subtropical and tropical areas of the eastern hemisphere, was introduced into the southeastern United States both intentionally and accidentally from several separate sources. It has spread rapidly by rhizomes and seeds and become one of the worst weeds in Florida. Cogon grass was reported to have accidentally escaped into Alabama in 1912. In 1933, J. K. Small in the Manual of the Southeastern Flora listed *Imperata brasiliensis*, Brazil Satintail, as the only species of *Imperata* occurring in Florida. Small cited pinelands, prairies, sand dunes and the Everglades in southern peninsula Florida as the habitat. A. S. Hitchcock in 1935 in the Manual of the Grasses of the United States stated that the only *I. cylindrica* collections known to him were from ballast at Portland, Oregon. Hitchcock and Agnes Chase in the 1950 revision of the Manual of the Grasses of the United States describe both *I. cylindrica* and *I. brasiliensis* and note that *I. cylindrica* was recently introduced into the west central part of Florida.

The range of *I. brasiliensis* is stated to be Mexico south through Central America into South America, the West Indies, and southern Florida. *I. brasiliensis* has also naturalized around Mobile, Alabama, and in Louisiana. Bradley notes several collections of *I. brasiliensis* from the late 1800s. Westbrooks and Eplee report that *I. brasiliensis* was first collected in Miami-Dade County, Florida, in 1905. The range of *I. brasiliensis* could indicate that it is a Florida native as it occurs north into southern Mexico and through the West Indies including the Bahamas and Cuba. Species that occur in both the Bahamas and Cuba may or may not occur in Florida, however, this range and early collection dates do indicate the strong possibility of *I. brasiliensis* extending into Florida. The native, *I. brasiliensis* has not caused problems for the flora in south Florida.

The only definite character by which *I. brasiliensis* and *I. cylindrica* can be sepa-

## Cogon Grass Biocontrol

Grab your bug nets! A cooperative research project - between the Florida Department of Agriculture and Consumer Services (Division of Forestry), the United States Department of Agriculture (Forest Service Health Technology Enterprise Team) and the University of Florida - is trying to identify potential natural enemies (e.g., insects and pathogens) of cogon grass (*Imperata cylindrica*).

The group is asking resource managers to survey and examine existent cogon grass infestations during different seasons for suspicious damage and/or mortality that may be caused by arthropods and/or pathogens. Please send any potential specimens plants and or insects to Jim Meeker, Forest Entomologist, FDACS Division of Forestry, 1911 SW 134<sup>th</sup> Street, Gainesville, FL. Please include a note with the collector's name, collection date, location, and method of collection with each specimen. Reach Jim at (352) 372-3505, or email: [fhealth@doacs.state.fl.us](mailto:fhealth@doacs.state.fl.us) for more information on this project.

rated is the number of anthers. *I. cylindrica* has two anthers and *I. brasiliensis* has one anther. However, *I. cylindrica* is sometimes-to-often found having one anther and *I. brasiliensis* often has two anthers. The widely respected grass taxonomist W. D. Clayton has noted that the tremendous variations in morphology found in *I. cylindrica* do not warrant formal recognition because a careful examination of specimens in the field and of collections shows the variations spread along a continuum. My examination of borrowed specimens and of populations seen in Thailand and Africa would concur with his opinion.

It is important to remember that only a limited amount of genomic material of *I. cylindrica* has been introduced in the United States. Much more variation exists in the eastern hemisphere including plants which grow up to an altitude of 2,000 meters. Dozier et al., in a 1997 paper to be published in Weed Technology, reports three known introductions of *I. cylindrica* and also notes variations in chromosome numbers and morphology. A disturbing recent introduction is *I. cylindrica* 'Rubra', Red Baron Cogon grass. This form will survive in the northern parts of the United States. When grown in greenhouse experiments McDonald found that it will lose its red coloration and become green. While not flowering in any known studies or locations at this time, the potential to do so is implicit. Not only could this form spread into more northerly locations, but it could cross with other extant populations and provide an even more diverse genome which could provide additional problems for control.

Both *I. cylindrica* and *I. brasiliensis* have been extending their ranges as a result of the massive human disturbance in recent years. M. L. Gabel worked on *Imperata* as a Ph.D. project and found frequent evidence of hybridization. As *I. brasiliensis* works its way north and *I. cylindrica* has worked its way south, the two entities, as they cross paths in the central part of the state, become impossible to separate. S. K. McDonald as part of her Ph.D. study crossed the two entities and found all of the resulting seeds produced by both entities germinated. Other morphological evidence found by McDonald has to be weighed in light of the limited genomic compliment of *I. cylindrica* that most likely exists in the United States. McDonald found a significant difference in the numbers of tillers produced and in leaf width.

After reviewing current evidence as reviewed above, my opinion is that both *I. brasiliensis* and *I. cylindrica* should be considered forms of the same species. Taxonomic rules dictate that *I. cylindrica* is the name to be used when both species are combined. It is a possibility that this grass was widely distributed before or during the continental breakup caused by continental drift or other factors long before human interference and that it occurs naturally in both hemispheres. The use of some of the most recent DNA testing procedures could provide a possible solution to this enigma. In any event, a foreign (exotic) genome was brought into the United States and is spreading rapidly with continuing disastrous consequences for our native flora and crops. As one reviewer suggests: "A weed by any name still is!" David Hall is the former Director

of the University of Florida Plant Identification Service. He is currently President of David W. Hall Consultant, Inc. in Gainesville, FL 32605.

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**Native Turf** - Bahia and Bermuda grass rule the roadside and the canalbank. They are favorites for stabilizing these areas and providing low maintenance ground cover. There is an increased interest in reducing the use of these and other non-native grasses when native species are available and have similar effectiveness. Unfortunately, little work has been done to evaluate native grass possibilities in spite of the fact that several native Florida grasses are used for this purpose in other states and countries.

Staff at The Nature Conservancy (TNC), University of Florida (UF) and the South Florida Water Management District (SFWMD) are launching several studies to evaluate the possibility of using native

## Bahia grass (*Paspalum notatum*) Mis-Bahia-vin'?

By Daniel Austin

In the 1991 Florida EPPC Invasive Plant List, the list committee included Bahia grass (*Paspalum notatum*) because several people had seen the plants growing in wild areas. Although there was some opposition, the species was continued in the 1993, and 1995 lists. In 1997, the species was moved from Category I to the uncirculated "to be watched" list. Several members of the EPPC and other organizations have questioned that action.

The Florida EPPC Invasive Plant List is an evolving document that reflects the best information available to the committee members. When Bahia grass was first included, several field biologists had located wild populations of the plants. As people watched those populations over the next six years, it became apparent that the species was not invading native habitats in the same manner as the other Category I species. Moreover, Bahia grass was not even comparable to the other Category II species.

Footnotes for the 1995 list included the following entry: "Plants in southern Florida are producing seed and appearing outside of planted areas. Also persisting and spreading from areas where yard clippings are dumped (illegally). Although escaping into the wild, this plant does not seem to be in the same category with the others in this group

grasses and ground covers on roadside and levee conditions. TNC and UF researchers have support from the Florida Department of Transportation to focus on roadside and experimental trials of native grasses such as seashore paspalum (*Paspalum vaginatum*) and knotgrass (*P. distichum*) in Central and South Florida. The SFWMD is establishing trials in southern Miami-Dade County to evaluate the use of native grasses and groundcovers like seashore saltgrass (*Distichlis spicata*) and beach sunflower (*Helianthus debilis*) on levee rights-of-way. For more information about either of these studies, contact Doria Gordon (TNC) dgordon@botany.ufl.edu, (352) 392-5949 or Amy Ferriter (SFWMD) amy.ferriter@sfwmd.gov, (561) 687-6097.

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