

Hello Cogongrass: Goodbye Texas Forests and Grasslands!

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“Hello Giant Salvinia: Goodbye Texas Lakes!” The Texas Parks and Wildlife Department has adopted this catchy slogan to promote public awareness of giant salvinia, a noxious aquatic weed invading Texas lakes. Using a similar slogan, the Texas Forest Service would like to bring public attention to an invasive plant that has the potential to threaten forest and grassland habitats in East Texas – cogongrass (*Imperata cylindrica*).

Unlike giant salvinia, which has become established in several Texas lakes (i.e., Caddo Lake, Toledo Bend and Sam Rayburn Reservoirs), cogongrass is only known from a couple of sites in Texas. But the problems this invasive weed has caused in Alabama, Mississippi, Florida and other southern states are testimony to why Texas should be concerned. Cogongrass is an aggressive, rhizomatous, perennial grass that is distributed throughout the tropical and subtropical regions of the world. Considered among the world’s top 10 worst weeds, it has become well established in the southeastern United States within the last fifty years (Fig. 1). Cogongrass is a growing threat as it continues its rapid spread across the Southeast, reducing forest and pasture productivity, destroying wildlife habitat, impacting rights of way, and presenting an extreme fire hazard. State and Federal pest specialists from Florida to Texas have initiated a joint program to increase public awareness of cogongrass and reduce its impact on forested habitats.

Once cogongrass gains a foothold in an area, it’s just a matter of time before it spreads from the infested site. Therefore, according to Dr. James Miller, invasive plant specialist with the US Forest Service, **IT IS VERY IMPORTANT TO RECOGNIZE AND ELIMINATE COGONGRASS BEFORE IT SPREADS FROM AN INFESTED SITE, AND UNDERSTAND WAYS TO PREVENT ITS MOVEMENT AND INTRODUCTION.** For more information, see the webpage at <http://www.cogongrass.org/>.

How to recognize cogongrass?

Cogongrass is a tall (2-5 ft.) perennial grass with bright yellow-green foliage (Fig. 2A). The leaf blades have serrated or toothed edges (they can cut tender skin) and a midvein which is clearly offset to one side (Fig. 2B). The underground rhizomes are hard, scaly, and cream-colored with sharply-pointed tips (Fig. 2C, D). The seedhead is fuzzy, white, and plume-like (Fig. 3A). Cogongrass blooms from late March to mid June (flower timing depends somewhat on local climate). An unexperienced observer may confuse cogongrass with Johnsongrass (*Sorghum*

halepense), an invasive weed that has become widely spread in Texas. Although Johnsongrass also has a white midvein, the midvein is centered on the leaf and the seedhead is not plume-like (Fig. 3B). Infestations of both cogongrass and Johnsongrass are most likely to be found on roadsides, mining sites, borrow pits, and other areas of soil disturbance. Cogongrass is of greater concern to forest managers because it is more difficult to eliminate and is able to invade moist to dry upland pine sites. It may colonize recently harvested timber sites and newly-planted or established pine plantations. And unlike Johnsongrass, cogongrass has yet to become well established in Texas, so it is a primary target of invasive species prevention campaigns.

Following initial invasion, cogongrass often forms dense, field-like monocultures. Infestations spread readily on disturbed sites and through movement of soil contaminated with small pieces of rhizome or seed (often due to site disturbance in timber harvest, site preparation, road grading, use of contaminated fill dirt, etc.). Cogongrass infestations can reduce pine survival and growth. When fields of cogongrass burn, the fire may kill overstory trees due to flammable oils in the grass blades which raise the intensity and severity of prescribed burns. Over time, cogongrass may significantly impact management and productivity of pines on infested sites.

Where is cogongrass found in Texas?

In Texas, cogongrass has been confirmed only from a single site in one county – north of Spurger in Tyler County. (There is a record of cogongrass in Brazos County in the USDA Plants database that lists a collection in the Texas A&M University herbarium, but the only record the herbarium could confirm is a sample of the cultivated “red baron” variety turned in by a campus grounds crew). Other cogongrass sites have reportedly been found and treated in southeast Texas by the Texas Department of Transportation, but their identity or specific locations have not been confirmed. The one known site in Tyler County, a 1-acre infestation situated along State Highway 92 and extending into a young pine plantation, has recently been treated by Texas Forest Service crews, using prescribed fire and repeated herbicide applications. Cogongrass has now been largely eradicated from this site and the treated area is being monitored periodically so that any new sprouts can be eliminated.

Control measures (from www.cogongrass.org)

Cogongrass control varies according to the age of the infestation as well as the density and depth of the rhizome mat. Young infestations are usually easier to control than older, well-established infestations. For newer patches, tillage can eliminate cogongrass from an area if continued during the course of a growing season. The initial tillage should begin in the spring (March through May) with an implement that inverts the soil to a depth of at least 6 inches. Perform additional tillage with a disk harrow or other appropriate implement every 6 to 8 weeks. It is important to clean all equipment on site to prevent the spread by rhizomes. Dry periods during the summer will aid in the control of cogongrass. The area can be planted to a fall cover crop and then followed the next season with perennial or annual grass or broadleaf crops. Mowing may

help reduce cogongrass stands, but areas must be mowed frequently and at a low height. Monitor the site throughout the growing season; spot treat any recurring infestations with appropriate herbicides.

Tillage may not be an option on many sites such as steep slopes, established tree plantings, or around dwellings. Out of dozens of herbicides tested for significant activity on cogongrass only two, the active ingredients glyphosate (Roundup®, Glypro®, Accord®, etc) and imazapyr (Arsenal®, Arsenal AC®, and Chopper®), have much effect on this grass. Even at high rates and using tank-mix combinations, cogongrass often regenerates within a year following a single application of either product. A minimum of two applications per year is needed, realizing that older infestations may require 2 to 3 years of treatment to eliminate rhizomes. Glyphosate has no soil residual activity. Imazapyr has both soil and foliar activity and can severely injure susceptible plant species that are planted too soon after the last treatment. Most vegetables, row crops, and ornamentals *will be injured* if planted with 24 months following an imazapyr application. As with all pesticides, proper handling and usage is of utmost importance and *always read and follow label directions*. For more detailed guidelines on controlling cogongrass in pine plantations, see www.cogongrass.org.

How to report new cogongrass infestations?

To ensure that Texas avoids problems being confronted by the extensive cogongrass infestations present in Alabama and neighboring states, Texas Forest Service would like to be notified of any suspected cogongrass infestations detected on private, state or federal properties within the state. Citizen scientist groups are being trained on how to identify and report cogongrass and other invasive plants via the Invaders of Texas Program (see www.texasinvasives.com for more information). Anyone finding cogongrass in Texas is encouraged to report it via this webpage or directly to the Texas Forest Service by contacting Michael Murphrey (Phone 936-639-8170 or e-mail at mmurphrey@tfs.tamu.edu). With your help, we can protect our forests and grasslands from further invasion by this noxious weed.

Cogongrass Infestations by County in the Southeast U.S.

As reported to State Authorities by May 2010
All known infestations in South Carolina, Georgia and Tennessee are under treatment

Map produced by the Center for Invasive Species and Ecosystem Health
University of Georgia in Cooperation with States

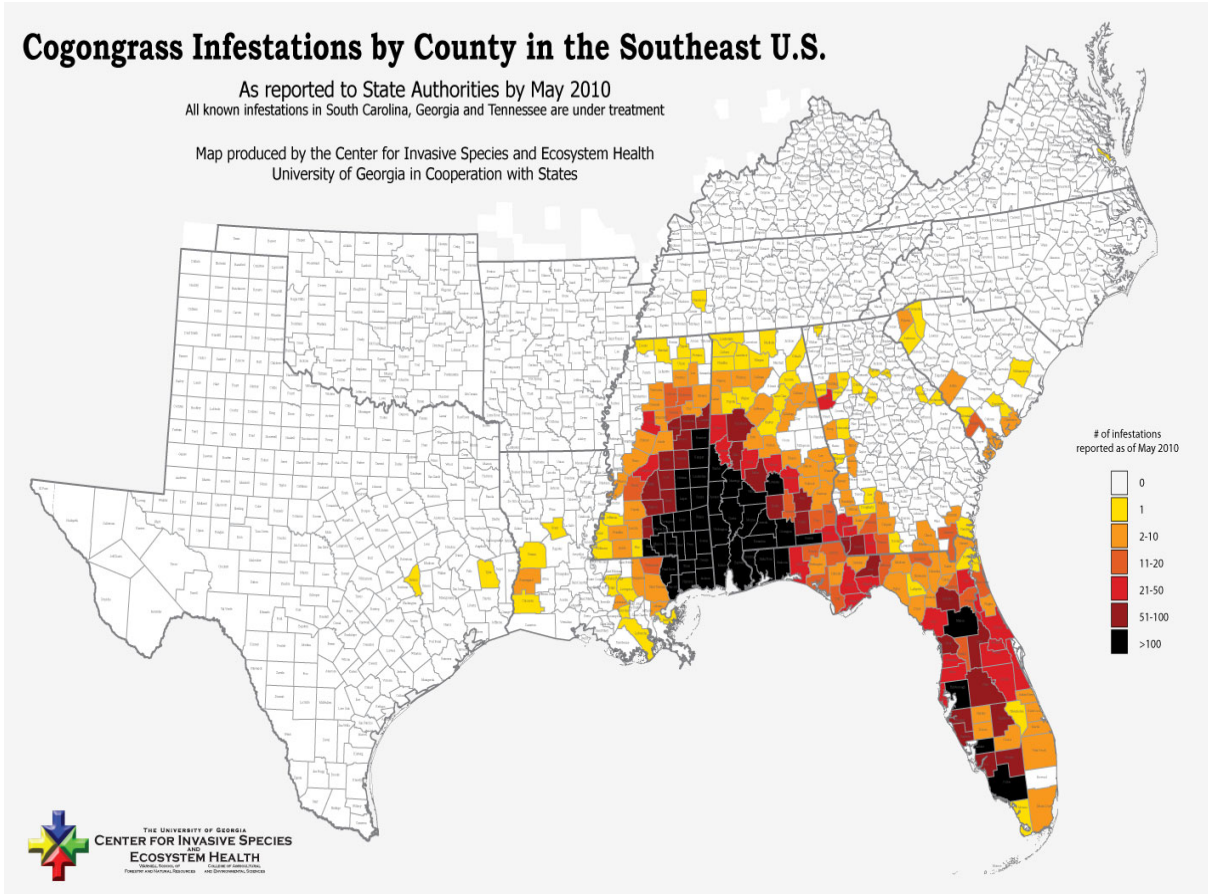


Figure 1: Cogongrass infestations by county in the southeastern U.S. (Center for Invasive Species and Ecosystem Health, May 2010).



Figure 2: Cogongrass: A) TFS Entomologist Joe Pase stands in the cogongrass infestation in Tyler County, prior to treatment; B) Off-center white midvein is characteristic of cogongrass leaf; C) Rootsystem, and D) White rhizomes; (Photos A and C by Ron Billings, photos B and D by Joe Pase.)



A

B

Figure 3 A) Cogongrass seedhead (Photo by Clemson University Extension; B) Johnsongrass with seedheads (Photo by Ron Billings).