

You Ain't From Around Here! Exotic Invasive of the Quarter: Cogongrass (*Imperata cylindrica*)

By Jennifer Gagnon, Virginia Tech

Early detection (ED) species are exotic invasive plants that have not yet been documented in Virginia, but are found in nearby states. In 2014, we featured an article about one of these ED species, wavyleaf basketgrass. Considering early detection is often the key to keeping these species from becoming overwhelming and expensive problems, I've decided to focus on additional ED species in this column throughout 2015. So in the coming year, look for stories on some of these plants: beach vitex, tropical soda apple, giant salvinia, water hyacinth, and waterwheel.

Because of my fascination with the super-invasives, I'm starting 2015 off with a bang by writing about the 7th worst weed on EARTH! This plant grows on every continent except Antarctica!! Native to SE Asia, Philippines, China, and Japan, cogongrass was first introduced to the United States in Grand Bay, Alabama, in 1911-12. It arrived as a packing material for Satsuma orange plants and quickly made itself at home. Farmers and researchers saw potential for cogongrass as a forage and planted it. However, they soon learned that the grass' high silica content damaged the mouths of the livestock, thus rendering it useless as a forage. But, by then the deed was done. Cogongrass already had a strong foothold in the US.

Over the past 100 years, cogongrass has become a major problem in many southeastern states, and now covers over 500,000 acres. Cogongrass is able to reproduce by seed; a single seed head can produce up to 3,000 seeds. Seed viability tends to be low (in some places only 1%) but the sheer number of seeds still makes this a viable means of reproduction. Seeds are dispersed by wind, humans, animals, and logging equipment. This grass also reproduces vegetatively, from sharp-ended underground root structures called rhizomes. Rhizomes can grow 4.5 to 9' a year and are capable of piercing and growing through the roots of other species.

Cogongrass forms large, dense, circular infestations underlain by thick mats of thatch from the rhizomes. These infestations shade out native vegetation, compete with native vegetation for soil moisture, and prevent native seeds from germinating (by preventing them from reaching the soil). Cogongrass is adapted to all light and soil conditions except dense



Although cogongrass starts in circular infestation, left unchecked it can take over large open areas very quickly. Photo by: John D. Byrd, Mississippi State University.

shade and permanently wet areas. Thus far, it has only established in areas with temperate winters – but there are cold-hardy varieties sold commercially for ornamental purposes.

Additionally, cogongrass is extremely fire-adapted. It burns at temperatures up to 842 degrees F and flame heights can reach 8'. In the SE, where prescribed fire is a necessary management tool, having cogongrass in a forest can cause more frequent, more intense fires, resulting in high mortality of desirable species. This creates more open space into which cogongrass can spread. It's pretty much impossible to establish a forest in an area infested with cogongrass.

As far as wildlife is concerned, this species is a bust. The dense growth habit prevents ground-dwelling animals from moving through and ground birds from nesting under, the grass is not suitable browse, and the seeds are not eaten.

How to identify cogongrass

Flowers/Seed heads: cylindrical, 2 -8" long; silvery-white, light, fluffy dandelion-like seeds; blooms late March through early June; up to 200 seed heads per square yard.

Blades: up to 6' long and 1" wide; whitish prominent mid-rib (central vein), commonly off-center; finely serrate edges; some blades stand erect, others lie flat; light yellow-green (reddish or brown in fall).

Base: no apparent stem – blades appear to emerge directly from or close to the ground; overlapping sheaths give a rounded appearance; plants grow individually, not in clumps; often surrounded by thatch.

Rhizomes/Roots: form dense mats in the soil; segmented; covered in flaky scales; bright white under scales; sharply-pointed.

Plant form: dense circular patches; 3-4' tall.

In my experience, most grasses are dreadfully difficult to identify. Cogongrass is no exception and may easily be mistaken for common native grasses. Native Virginia grasses that look similar include broomsedge, Johnson grass and Vasey's grass. Fortunately, there is a great resource from the USDA Forest Service and the Bugwood Network that clearly shows the differences among these species (<http://www.cogongrass.org/cogongrassid.pdf>).

According to the folks in Alabama, a sure-fire way to identify cogongrass is to run barefoot through a suspected infestation. Upon exiting the infestation, if your feet are bloody and unusable from being pierced by sharp rhizome tips, then you just ran through cogongrass. Easy-peasy. And fun!

How to control cogongrass

The seeds of cogongrass are relatively short-lived, so there isn't a persistent seed bank. This means control efforts can focus on the rhizomes. Which is easier said than done. The

rhizomes are very persistent, aggressive, and resistant to heat and water stress. The thick mat they form can be over 7" deep in the soil.



The fluffy white seed heads of cogongrass (a) are very apparent in the spring and early summer. Notice the slightly off-center midrib (b) on this blade of cogongrass. This characteristic tends to become more noticeable later in the growing season. The sharp points on rhizomes (c) allow them to pierce through the roots of other plants (and your feet). Photos by: (a & c) Chris Evans, Illinois Wildlife Action Plan; (b) Florida Division of Plant Industry Archives, Florida Department of Agriculture and Consumer Services.

Mechanical: Grubbing up rhizomes for multiple years can be an effective control mechanism. But this is only practical for very small infestations. Mowing and burning are the opposite of control methods – both stimulate growth. **Do not mow a cogongrass infestation unless you follow up with a chemical treatment. Never intentionally burn a cogongrass infestation** unless you are filming an apocalyptic movie and want to create conditions that look like the end of the world. Don't believe me? Watch this: <https://www.youtube.com/watch?v=uAMlrDyllSg>

Chemical: Repeated applications of herbicides containing glyphosate and/or imazypyr have been shown to be effective at controlling and even eliminating cogongrass in Alabama. Efficacy of treatment may vary by site, indicating that site-specific prescriptions may be most effective. Since this grass is not currently in Virginia, specific recommendations for herbicide treatments in the commonwealth have not yet been developed.

CWMAs: Readers may recall that in the Summer 2014 edition of the *Forest Landowner Update* we featured a story about Cooperative Weed Management Areas (CWMAs). This is the successful approach the state of Georgia took to control cogongrass. Read about their efforts here: <http://www.cogongrass.org/georgia/Georgia's%20Cogongrass%20Efforts-%20Education%20Detection%20and%20Eradication%202007-June%202012.pdf>.

Gagnon. *Virginia Forest Landowner Update*. V. 29, No. 1. Winter 2015.

Cogongrass is definitely something we don't want in Virginia. But, if we've learned anything from invasive species, it's that we often get what we don't want. The best thing we can do is keep a lookout for anything that looks like cogongrass and report it. The folks at the University of Georgia and the Bugwood Network have developed an App to help you do just that. The free App is called the Mid-Atlantic Early Detection Network. It allows you to properly identify invasive species, map them using the GPS feature on your device, and photograph and report them to the Early Detection Network. The App is available here: (http://apps.bugwood.org/mid_atlantic.html). See the Useful Resources section of this newsletter for more invasive species resources.

Early detection is the key!

Jennifer Gagnon is an Extension Associate in the Department of Forest Resources and Environmental Conservation; jgagnon@vt.edu; 540/231-6391.