MS-EPPC Cogongrass Symposium

by Lisa Yager, MS-EPPC Secretary

Introduction

Accidentally and intentionally introduced into the United States in the early 1900's, cogongrass (*Imperata cylindrica*) has since become a serious weed problem in pastures, forests, reclaimed mine sites, and natural areas in the southeastern United States. It is currently documented in 44 of the 82 counties in Mississippi and has become a serious problem for land managers in the southern part of the state. As it continues to spread, land managers in other parts of the state will have to join the struggle to address cogongrass and its impacts. In order to disseminate information about this weed, MS-EPPC held a symposium on cogongrass at the Mississippi Museum of Science in Jackson, MS on December 10, 2002. Speakers presented information on research and other efforts to address the cogongrass problem.

Benny Graves

Mississippi Bureau of Plant Industry

The first speaker, Benny Graves from the Mississippi Bureau of Plant Industry, discussed the formation of a task force to coordinate state and federal agency efforts to address the problem of cogongrass. Lester Spell, Commissioner of the Mississippi Department of Agriculture, initiated the task force at the behest of several landowners. The task force is comprised of participants from state and federal agencies as well as landowners and members of industry. They have identified three broad areas of concern. First, agency personnel and the general public need to be educated about the impacts and control of cogongrass. Second, techniques to control and suppress cogongrass need to be developed or improved. Finally, land managers need to start using the tools that are available to control cogongrass.

In order to assist with efforts to control cogongrass, the task force has created a poster, brochures and a web page with information about identification, biology and control of cogongrass (See:www.mdac.state.ms.us/Library/BBC/PlantIndustry/PlantPestPrograms/Cogongrass.html). They have initiated a survey to identify locations of cogongrass within the state and made efforts to identify sources of funding for education, research, and control of cogongrass. They also hope to promote a noxious weed amendment to the Mississippi Plant Act that would provide the Bureau of Plant Industry with regulatory power to address noxious weeds in Mississippi. Plants suggested for listing include cogongrass, Chinese tallow tree, Florida betony, Japanese climbing fern, purple loosestrife, torpedograss, giant salvinia, hydrilla, and itchgrass. For more information about this proposed noxious weed amendment, contact Butch Alpe, Bureau of Plant Industry, (662) 325-8488.

Randy Browning

US Fish and Wildlife Service

The second speaker, Randy Browning, Private Lands Biologist with the US Fish and Wildlife Service, discussed the problems that cogongrass represents for the restoration of the longleaf pine ecosystem. Cogongrass displaces native species and reduces artificial and natural regeneration of pines. It may be allelopathic and is poor forage. It creates very high temperatures when burned, resulting in high tree mortality. It has had a negative impact on numerous wildlife species such as quail, songbirds, insects, and gopher tortoises.

Mr. Browning stressed the need to clean equipment to prevent the spread of cogongrass and also the need for restrictions on its sale as an ornamental by the nursery industry. The ornamental cultivar (Japanese bloodgrass, Rubra, Red Baron) generally reverts back to its native form once planted. Strategies for cogongrass control include burning or mowing in late winter or early spring to remove thatch, repetitive deep disking (if appropriate), and application of herbicides (glyphosate or imazapyr). Treatment will take many years.

He has developed a PowerPoint presentation to be used to educate landowners and land managers on the biology, dispersal, impacts, and control of cogongrass (available at the web address listed previously).

Jim Miller

USDA Forest Service, Southern Research Station

Dr. Jim Miller of the USDA Forest Service, Southern Research Station in Alabama discussed the region-wide monitoring of invasive pest plants in southern forests by the Forest Service and state partners. However, Mississippi is not participating in their survey. Thirty-two taxa of invasives, including cogongrass, are being monitored for the region. Dr. Miller and others have developed a publication available at www.srs.fs.usda.gov/fia/manual/ or www.bugwood.org/ that provides information on the identification and control of non-native invasive plants of southern forests.

Dr. Miller summarized results of herbicide application trials on cogongrass in loblolly and longleaf forests. Results were best for imazapyr at 25 gal/ac and glyphosate at 10 gal/ac. Late fall was the best time of application and Arsenal (imazapyr) was generally more effective for older patches.

Wilson Faircloth

Auburn University, Auburn, Alabama

Wilson Faircloth, a PhD Student at Auburn University, discussed his research on the control and management of cogongrass. He is looking into glyphosate and imazapyr herbicide treatments combined with planting bahiagrass (*Paspalum notatum*), bermudagrass (*Cynodon dactylon*), crimson clover (*Trifolium incarnatum*) and gulf ryegrass (*Lolium multiflorum*) as potential methods of control. His initial findings suggest that imazapyr's effectiveness is site dependent and that crimson clover provided good suppression of cogongrass in the spring. He has evaluated the frequency of mowing and the use of a Burch wetblade (a lawnmower capable of applying herbicide as it cuts) to control cogongrass. Neither mowing nor the wetblade provided good con-

trol. He is currently evaluating mechanical and chemical treatments that might be effective in facilitating establishment of loblolly pine into cogongrass. He has determined that higher application rates of imazapyr and glyphosate increased mortality of pines and did not achieve greater control of cogongrass. The mechanical and chemical treatments might buy the pines a little time; but that was all.

John Byrd

Mississippi State Extension Service, Starkville, Mississippi

Dr. John Byrd of the Mississippi State Extension Service started his presentation by stating that although invasives represent a big threat economically and ecologically, there is low media reporting. Dr. Byrd discussed how cogongrass is dispersed throughout Mississippi in contaminated soil, ornamentals, hay, and sod. Disturbing the soil in and around the cogongrass patches and failure to clean earth moving equipment has transported rhizomes to uninfested areas.

Cogongrass primarily blooms in the spring, but also may bloom in November and December. Dr. Byrd discussed the possibility that seed dispersal has been discounted more than it should be. He has documented high germination rates for seeds from the coast. The seeds are wind dispersed and he has seen them blowing around from traffic and traveling on vehicles. Mowing during seed production may have facilitated its spread as well.

Dr. Byrd then discussed some ongoing and potential research projects. Like Wilson Faircloth, he has looked at using a wetblade to control cogongrass but results were poor even at different mowing heights. He has obtained some control at very high rates of mowing, but felt that such rates would not be practical for most situations. He looked at combining soil nutrient addition with mowing but simply got very green cogongrass. Biocontrol agents, techniques from the turfgrass industry for seed head suppression, and use of Roundup-ready corn and soybeans should be researched to see if they provide improved techniques for control and suppression of cogongrass.

Steve Brewer

University of Mississippi, Oxford, Mississippi

The final speaker, Dr. Steve Brewer at the University of Mississippi, described his research examining effects of nutrient addition on invasibility of a longleaf pine savanna by cogongrass. Cogongrass may invade because a niche is available or because it is a superior competitor to the native vegetation. In this study, Dr. Brewer looked at additions of nitrogen and phosphorus on cogongrass encroachment into plots over two growing seasons. Neither nutrient treatment halted cogongrass spread, but phosphorus appeared to reduce the rate of spread. Nitrogen had no effect on cogongrass spread and reduced native plant richness and height. Phosphorus increased heights of native legumes and other plants. Legumes may more directly compete for phosphorus, thus slowing growth of cogongrass.

Dr. Brewer also looked at seed banks within cogongrass and the pine savanna and found much reduced seed bank diversity within the cogongrass patch. This may mean that for restoration to occur, native species will have to be seeded in. He plans to undertake research examining the effects of individual legume species on cogongrass spread.

Additional Information

To obtain copies of brochures and posters providing information on cogongrass identification, biology and ecology, go to the Mississippi Bureau of Plant Industry website, www.mdac.state.ms.us/Library/BBC/PlantIndustry/PlantPestPrograms/Cogongrass.html or contact them at (662) 325-7765, P.O. Box 5207, Mississippi State, MS 39762. See the following Mississippi websites for additional information.

www.se-eppc.org/states/Mississippi.cfm
www.wildlifemiss.org/magazine/fall02/species.html
www.ms.nrcs.usda.gov/dsbiology.pdf
www.mdwfp.com/wildlifeissues/articles.asp?vol=8&article=110
www.msucares.com/pubs/misc/m1194.html