Florida Goldenaster (Chrysopsis floridana) Population Reintroduction Project
Joel DeAngelis, Senior Land Management Specialist, Southwest Florida Water Management District

Land Management staff from the Southwest Florida Water Management District (District) recently partnered with the United States Fish and Wildlife Service (USFWS) and Bok Tower Gardens (BTG) to re-introduce the federally endangered Florida goldenaster (Chrysopsis floridana) on its Cordell Tract in Manatee County with the goal of establishing a self-sustaining and genetically diverse population on protected lands within its narrow range.

The Florida goldenaster is a narrowly endemic perennial herb restricted to Hardee, Hillsborough, Manatee, and Pinellas counties. The species occurs almost exclusively on excessively-drained white sand associated with openings in sand pine scrub (including rosemary balds) and transitional areas on the perimeters of oak scrub. Florida goldenaster is short-lived and reproduces entirely by seed which is primarily wind dispersed. Scattered large colonies currently exist but overall populations have declined significantly throughout its range due to development and habitat degradation resulting from long-term fire exclusion. Combined with its restricted range, these factors led the USFWS to designate the Florida goldenaster an endangered species in 1986.

BTG staff collected 200 seeds from nine sites on six conservation areas over three collection years (2001, 2003, and 2005). Donor areas included Rhodine Scrub, Alafia Scrub, Bell Creek, Bullfrog Creek, and Goldenaster Scrub owned by Hillsborough County and the Moody Branch WEA owned by Manatee County and managed by FFWCC. A total of 1,158 C. floridana seedlings were produced in April, 2007. A total of 410 seedlings were planted at two sites at Cordell in June, 2008. The District Sr. Land Management Specialist watered and tended the plants until they were established and would later harvest seed for a subsequent planting at Cordell.

Germination trials were conducted by BTG at this time and the first demographic monitoring of the Cordell population was conducted in
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November, 2008 by staff and volunteers from USFWS, BTG, and the District. Total mortality was very low (average 4%) and evidence of reproduction (buds, lowering, and seeding) was high at 59%. Bud and seed set for the introduced population was consistent with those of other in-situ populations in the study. A subset of seed from the Cordell population was collected in October, 2008 by District staff and sent to BTG for viability analysis. Selected plants were accessioned and will be maintained at BTG for inclusion into the National Collection as part of their joint efforts with the Center for Plant Conservation. Approximately 89 plants grown from the seed collected are scheduled to be planted at Cordell in 2009.

Note: A population of the federally endangered perforate reindeer lichen (*Cladonia perforata*) was recently discovered on the Cordell property. Like Florida goldenaster, this species is typically found in sandy openings in scrub habitat. It is also thought that it requires long intervals between burning to persist and is known to be sensitive to disturbances such as trampling or off-road vehicles.

Click here for the Florida Goldenaster Population Introduction Project 2008 Annual Report

Recent Research Findings

**Restoration of longleaf/slash pine ecosystem from slash pine plantations in Florida coastal flatwoods**

Sharma, Ajay; Kreye, Melissa; Jose, Shibu; Bohn, Kimberly. March 28, 2009. Southeastern Ecology and Evolution Conference, Gainesville, FL.

Restoration of longleaf pine ecosystems is currently the focus of significant restoration efforts in southeastern U.S. but is of global concern with respect to sustaining biodiversity. Many prior longleaf pine sites now exist as slash pine and other pine plantations. Restoration of such sites involves gradually replacing slash pine or other pine with longleaf pine and managing these complex ecosystems (longleaf/Slash) with uneven-aged approach (selection systems) to meet diverse objectives of production, conservation, and recreation. However, our knowledge base to practice such a conversion and multifunctional management is inadequate. In the study we aim to restore an even-aged slash pine plantation to an uneven-aged slashpine/longleaf pine ecosystem and develop an adaptive multifunctional uneven management system for such ecosystems in southeastern U.S. coastal flatwoods. We will establish different reproduction treatments: single tree selection, group selection and irregular shelterwood, with two fire frequencies (1 year and 2 year) along with planting of longleaf pine seedlings in the gaps. The structural conditions, regeneration and growth responses resulting from field trials will be used to initiate a spatially-explicit stand model that predicts timber production, forest and understory structure, and carbon sequestration over multiple cutting cycles in an uneven-aged longleaf/Slash pine ecosystem. The model will be used to evaluate the parameters (gap size, residual basal area, cutting cycle, fire frequency) of the reproduction methods that optimize and sustain values in a multifunctional management system. The findings will aid the restoration managers in making long-term projections of their actions and facilitate decision making.

To view poster click here.
Ajay Sharma is a first year PhD student at the School of Forest Resources and Conservation at the University of Florida in Gainesville. He has a masters and bachelors degree in Forestry from India and has worked for various reputed research organizations including the Department of Space, Council of Scientific and Industrial Research and the Indian Council of Agricultural Research for the Government of India. During the course of his career, he has been the recipient of many top government research fellowships and has published in a peer-reviewed international journal. In 2004, he was awarded Chancellor’s Gold Medal (Best Student Award) by the Gujarat Agricultural University, India. He was also awarded the prestigious Honor's and Topper’s Gold medal awarded by the Ministry of Environment and Forest, Government of India in 2007. He is an active member of Indian Society of Remote Sensing and also served as co-opted member of Board of Studies of Gujarat Agricultural University, India. Before joining the PhD program in Forest Ecology at the University of Florida in 2008 he worked for over 3 years as a Forest Officer in the National Capital Territory of Delhi, India. His research interests revolve around conservation and restoration ecology. His work at the University of Florida is related to the ecology and restoration of longleaf pine in coastal flatwood ecosystems.

**Announcements**

- **CFEOR Workshop: Biomass Harvesting in the Osceola National Forest**  
  April 30th. Register here in the next Update Issue.

- **Coming This June!** Tree Marking CFEOR Workshop at Tate’s Hell State Forest  
  Register here in the May Update Issue.

**Upcoming Events**

- **U.S. Forest Service Offers Free Admission April 3-5, 2009.**  
  In support of *Get Outdoors Florida!,* the three National Forests in Florida, the Apalachicola, the Osceola and the Ocala, will offer free admission to forest visitors on April 3-5, 2009 at most recreation sites. Visit the *Get Outdoors Florida!* web site at:  

- **Restoration Planning and Techniques for Forested Lands**  
  April 14-16, 2009, Apalachicola Bluffs and Ravines Preserve, Bristol, FL  
  Learn best management practices for restoring ecological processes to forested lands.  
  [http://nata.snre.euf.edu](http://nata.snre.euf.edu)

- **Hydric Soils Short Course-Specialized Training for Wetland Specialists**  
  April 28-30, 2009, Austin Carey Memorial Forest Education Building, Gainesville, FL  
  This exclusive training program focuses on the interrelations of hydrology and hydric soils and how to distinguish hydric soils from nonhydric soils.  
  Register [http://conference.ifas.ufl.edu/soils/hydricsoils/index09.html#registration](http://conference.ifas.ufl.edu/soils/hydricsoils/index09.html#registration)  
  For more information contact Wade Hurt at [whurt@ufl.edu](mailto:whurt@ufl.edu).
• **2009 Aquatic Weed Control Short Course**  
  May 4-7, 2009 Coral Springs Marriott, Coral Springs, Florida  
The short course is designed to benefit those new to the industry and experienced professionals seeking a comprehensive update.  
Register [www.conference.ifas.ufl.edu/aw](http://www.conference.ifas.ufl.edu/aw)

• **11th North American Agroforestry Conference: Agroforestry Comes of Age: Putting Science into Practice**  
  May 31 - June 3, 2009, Columbia, Missouri. Early Bird registration extended to March 1  
UMCA website [www.centerforagroforestry.org](http://www.centerforagroforestry.org)

• **Third National Conference on Ecosystem Restoration - The Spirit of Cooperation**  
  July 20 – 24, 2009, The Westin Bonaventure, Los Angeles, CA  

• **Society of American Foresters National Convention - “Opportunities in a Forested World”**  
[http://www.safnet.org/natcon-09/index.cfm](http://www.safnet.org/natcon-09/index.cfm)

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*CFEOR Mission:* To develop and disseminate knowledge needed to conserve and manage Florida’s forest as a healthy, working ecosystem that provides social, ecological and economic benefits on a sustainable basis.

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Charlie Houder, Suwannee River Water Management District, Steering Committee Chair  
Bill Cleckley, Northwest Florida Water Management District, Steering Committee Vice-Chair

**Newsletter Contacts**  
Nancy Peterson, School of Forest Resources and Conservation, CFEOR Executive Director, njp@ufl.edu  
Melissa Kreye, School of Forest Resources and Conservation, CFEOR Coordinator, mkreye@ufl.edu  
Phone 352.846.0848 · Fax 352.846.1277 · PO Box 110410 · Gainesville, FL 32611