A cooperative for
Conserved Forest Ecosystems:
Outreach and Research
Annual Report, June 2011
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## CFEOR Members

Cover photo by David Clayton of a wiregrass restoration site located along Magnolia Creek in Walton County, FL which is part of a mitigation groundcover restoration project conducted by the Northwest Florida Water Management District.
To CFEOR members:

Just when we all thought the worst was over; nearly all of CFEOR’s membership got clobbered with significant legislative budget cuts next fiscal year. I cannot vouch for the other agencies, but it appears that research dollars will be scarce the next couple of years as CFEOR members adjust to the fiscal realities of significantly reduced revenue streams. How does this affect CFEOR? For starters, it means that the cooperative will have to come up with some innovative ideas to retain and strengthen our membership while continuing to fund ongoing research until the economy improves.

In spite of the financial hardships occurring in the public sector, CFEOR continues to expand its membership, especially with large private conservation landowners or groups. This year we welcomed Nokuse Plantation and the Gilchrist Hunt Club as supporting members. In the future, as a hedge against financial uncertainty and to attempt to gain more private sector members and to diversify/strengthen the cooperative, I believe that we must evaluate and recommend research projects that benefit both the public and private sectors. For example, we need to explore research opportunities that will jointly benefit public/private mitigation banks and restoration initiatives, especially the restoration and enhancement of wetland groundcover/overstory habitat. Another potential avenue that the cooperative needs to explore is woody biomass research and its relationship to public land ownership and habitat restoration activities.

Our outreach mission continues to grow with the hosting of numerous workshops over the past year and we are poised to sponsor the Natural Areas Association Conference in early November in Tallahassee, as well as, host a groundcover restoration session. In addition, CFEOR was finally able to procure a much needed vehicle for field research, outreach and administrative operations with the help of its members.

As we enter our sixth year, we need to recognize that CFEOR continues to grow in membership and in scope in spite of these difficult fiscal times, especially given that our members have been enduring budget shortfalls three out of the last six years or half of the cooperative’s existence. Nonetheless, I believe our financial foundation is solid, but we must continue to address and mend the cracks in our financial mortar as they arise to keep the cooperative from crumbling. We need to continue to hammer home the message to our superiors that CFEOR research funding plays a critical and vital role in the effective and efficient management of our public lands with many value added benefits to the private sector. The next few years will test our resolve, but the loyalty, dedication and commitment of our members is second to none and I am convinced the future looks bright.

Sincerely,

William O. Cleckley
CFEOR, Chair

Integrative Research and Outreach for Healthy Forest Ecosystems
Steering Committee

Bill Cleckley
*CFEOR Steering Committee Chair*
Director of the Division of Land Management and Acquisition, Northwest Florida Water Management District

Tim Breault
*CFEOR Steering Committee Vice-Chair*
Director of Habitat and Species Conservation
Florida Fish and Wildlife Conservation Commission

Dana Bryan
Environmental Policy Coordinator
Department of Environmental Protection
Florida Park Service

Bob Heeke
Senior Land Resources Manager
Suwannee River Water Management District

Jim Karels and Steve Jennings
Director
Chief, Forest Management Bureau
Florida Division of Forestry

Kevin Love
Regional Land Manager
Southwest Florida Water Management District

Susan Matthews and Teri Cleeland
Director
Deputy Forest Supervisor Region 8
National Forests in Florida, USFS

Steve Miller
Director, Division of Land Management
St. John’s River Water Management District

Science Committee

Dennis Hardin
*Science Committee Chair*
Program Coordinator
Florida Plant Conservation Program
Florida Division of Forestry

Dana Bryan
Environmental Policy Coordinator
Department of Environmental Protection
Florida Park Service

Cindi Gates
Sr. Land Management Specialist
Southwest Florida Water Management District

Kent Williges
Upland Habitat Research & Monitoring
Wildlife Research Laboratory
Florida Fish and Wildlife Conservation Commission

Carl Petrick
Ecosystems Staff Officer, Ocala National Forest
USDA Forest Service

Beau Willsey
Environmental Scientist
Suwannee River Water Management District

Outreach Committee

Peter Colverson
*Outreach Committee Chair*
Environmental Communications Specialist
Pandion Systems, Inc

Bill Cleckley
Director Division of Land Management and Acquisition
Northwest Florida Water Management District

Charlie Houder
Assistant Executive Director
Suwannee River Water Management District

Denise Rains
Public Affairs Officer, National Forests in Florida, USDA Forest Service

Bonnie Stine
Cooperative Forestry Assistance Supervisor
Florida Division of Forestry
Supporting Members

Dick Brubaker
Asset Manager
Gilchrist Club

M.C. Davis, Sam Shine
and Matthew J. Aresco
Owners and Plantation Director
Nokuse Plantation

Christian Newman
and Peter Colverson
Principle Ecologist and
Environmental Comm.Specialist
Normandeau Associates, Inc.

UF Administrative Team

Taylor Stein
Director
Associate Professor, Social Science and Recreation
School of Forest Resources and Conservation

Nancy Peterson
Executive Director
School of Forest Resources and Conservation

Melissa Kreye
Coordinator
School of Forest Resources and Conservation

Douglas Carter, Co-Director
Associate Professor, Forest Economics and Management
School of Forest Resources and Conservation

John Hayes
Professor and Chair
Department of Wildlife Ecology and Conservation

Collaborative Partners

Natural Areas Training Academy
Linda Demoetropoulos

Florida Natural Resources Leadership Institute
Laila Racevskis

Natural Areas Training Academy

UF IFAS Extension

Leda Kobziar, Co-Director
Assistant Professor, Fire Science and Conservation
School of Forest Resources and Conservation

Kimberly Bohn, Co-Director
Assistant Professor, Forest Ecology and Silviculture
West Florida Research and Education Center

Holly Ober, Co-Director
Assistant Professor, Wildlife and Understory Habitat, Wildlife Ecology and Conservation,
North Florida Research & Education Center

Tim White
Professor and Director
School of Forest Resources and Conservation
In our fifth year CFEOR has continued to establish itself as an essential research cooperative welcoming two new members, acquiring grants as well as launching two new research projects.

**Welcomed New Members**

We are pleased to welcome Gilchrist Club and Nokuse Plantation as the newest Supporting Members of the CFEOR Cooperative!

The **Gilchrist Club** is a premier private hunting plantation located in Gilchrist county on the Santa Fe river with nearly 27,000 acres of diverse woodlands. Richard “Dick” Brubaker serves as the asset manager and CFEOR member representative. To learn more about the Gilchrist Club please visit www.gilchristclub.com.

The **Nokuse Plantation** is a 48,000 acre private conservation initiative in the Florida Panhandle. It was conceptualized and funded by M. C. Davis and Sam Shine and designed to be both a model and a catalyst for future landscape level conservation projects. Matthew J. Aresco serves as the plantation director and CFEOR member representative. To learn more about Nokuse please visit www.nokuse.org.

**Funded New and Ongoing Signature Projects**

Signature projects include areas of research that reflect the needs and priorities of the CFEOR membership. Funding for Signature Projects is derived from the CFEOR annual membership dues and from member contributions.

- **2011 Project:** Flatwoods species responses to restoration treatment and season: Trajectory, success, and longevity of fire and roller chopping in fire-suppressed areas.

- **2011 Project:** Ground Cover Restoration in Flatwood Longleaf Pine Communities: Assessment of seed bank and its implications.

- **2008 Project:** Completed year three of, Developing Adaptive Management Strategies for Ecosystems in Transition (read more on page 10).

Shelterwood treatment plot recently harvested at Tate’s Hell State Forest as part of the 2008 Signature Project.
CFEOR Highlights

The CFEOR Outreach Committee had a banner year winning awards, exhibiting at events and bringing in outside funds!

**AWARDED GRANT FOR RESEARCH/OUTREACH EQUIPMENT**

CFEOR was awarded $17,500 from the UF School of Forest Resources and Conservation which was matched with $3,000 from CFEOR members and $2,500 from Co-directors for a total of $24,000. Funds will be used to purchase a Subaru Forester for field research and outreach/administrative travel.

**BESTOWED AWARDS IN OUTREACH EXCELLENCE**

CFEOR received the silver and gold-exemplary Southern Region Natural Resource Extension Award for the *Updates* newsletter and the CFEOR handbook on groundcover restoration.

**GRANTED FUNDS TO PRINT OUTREACH MATERIALS**

The United States Forest Service-Southern Region and the Renewable Resources Extension Association (RREA) provided over $3,500 in funds to print 400 copies of the CFEOR handbook on groundcover restoration to be distributed exclusively at CFEOR related workshops.

**SPONSORED AND EXHIBITED AT EVENTS**

- Forest Stewardship workshops at the Austin Cary Memorial Forest and Blackwater River State Forest - February 24th and March 3, 2011.
**CFEOR Workshops**

**Tour of Mallory Swamp- March 30, 2011**

Staff from the Suwannee River Water Management District conducted an exclusive tour of its Mallory Swamp. The tour focused on the reversal of forest industry alterations to a 30,000-acre perched wetland that contributes to the Suwannee River. Workshop participants examined water control structures installed to reconnect wetlands and slow rainwater discharge as well as the District’s vegetation management aimed at restoring the balance between herbaceous and woody species.

**Tour of Green Circle- January 20, 2011**

Green Circle has the world's largest wood pellet plant located in North Florida and supplies pellets for the co-firing power generating industry. Tour participants walked through the pellet making process from the wood yard to loading the rail cars. Tour guides discussed the economic benefits available to private landowners who provide wood fiber.

**Workshop on Groundcover Restoration- November 18, 2010**

Over 50 participants toured the Sandhill Lake Mitigation Bank (SHLMB) which is publicly owned and operated by the Northwest Florida Water Management District (NWFWMID). The bank has approximately 850 acres of wetlands, 150 acres of lakes and ponds, and 1,150 acres of uplands. Workshop tour included upland restoration sites for longleaf pine/wiregrass and oak/pine forest communities.
Affiliated faculty and scientists from the University of Florida and other universities are principal investigators and collaborators of CFEOR outreach and research projects.

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<tr>
<th>Name</th>
<th>Title</th>
<th>Institution</th>
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<td>Damian Adams</td>
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<td>Natural Resource Economics and Policy, School of Forest Resources and Conservation, UF</td>
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<td>Janaki Alavalapati</td>
<td>Professor and Head</td>
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<td>Ann Blount</td>
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<td>Dale Brockway</td>
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<td>Katie Sieving</td>
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<td>Jason Smith</td>
<td>Assistant Professor of Forest Pathology</td>
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(S-001) Signature Long Term Project

*Developing Adaptive Management Strategies for Ecosystems in Transition- Year 3*

**Principal Investigators:**
Kimberly Bohn, University of Florida, West Florida Research and Education Center and Ajay Sharma (Ph.D. student), School of Forest Resources and Conservation, University of Florida

**Project Funders:**
DEP/Florida Park Service, Florida Division of Forestry, Florida Fish and Wildlife Conservation Commission, Northwest Florida Water Management District, Suwannee River Water Management District

**Project Summary:**
Management of conserved forests must consider the sustainability of a variety of ecosystem products and values. Increasingly, uneven-aged forest management is considered an ideal strategy for maintaining ecosystem function and structure to ensure the sustained production of both commodity products and other ecosystems services including wildlife habitat, carbon sequestration, and recreational value.

**Objective:**
To evaluate various uneven-aged management strategies (5 reproduction methods, 2 fire regimes) and how they lead to long-term sustainable longleaf/slash pine ecosystems in terms of species composition, structure and productivity.

**2010 Project Activities:**
Harvesting of the research plots began in August 2010. One research block was harvested before wet conditions halted operations, and is expected to resume in June 2010. Other research studies, not dependent on the harvesting, were initiated in 2010. This includes the development of a modeling study which will use the U.S. Forest Service’s Forest Vegetation Simulator to simulate the cutting treatments that will be applied at Tate’s Hell State Forest. The model will evaluate forest structure and productivity over repeated cutting cycles. A study regarding seed bank dynamics and potential groundcover responses following harvesting was designed and will be carried out in 2011.

For the full project report go to www.srfc.ufl.edu/CFEOR.

(S-003) Signature Short Term Project

*Groundcover Restoration in Pine Flatwoods in Ecosystems of Florida*

**Principal Investigators:**
William M. Giuliano and Emma Wilcox, Department of Wildlife Ecology & Conservation, University of Florida

**Project Funders:**
Northwest Florida Water Management District, Suwannee River Water Management District, CFEOR (via membership dues and UF/IFAS funds)

**Project Summary:**
In much of Florida’s pine flatwoods, fire suppression, reductions in fire frequency, or a shift in fire season (commonly a result of human intervention) have lead to excessive shrub growth and proliferation, and the loss of native ground cover. Prescribed burning and roller-chopping during dormant and growing seasons are maintenance and restoration practices widely promoted to restore or maintain native ground cover. However, relatively little is known about the seasonal effects these activities have on vegetation, wildlife habitat, and biodiversity, hindering their implementation.

**Objective:**
To evaluate the long-term (3-4 year post treatment) effects of seasonal prescribed burning, roller-chopping, and combinations of the two practices as ground cover restoration and maintenance practices in pine flatwoods communities of Florida, and to explore the long-term effects these practices have on the avian community of pine flatwoods and the potential for avian species to serve as indicators of biodiversity in this habitat.

**Project Activities:**
In March 2011 we completed one year of field work examining the long term (3-4 year) effects of various restoration treatments. Unfortunately, this project has been terminated due to a lack of appropriate sites and other unforeseen problems with project implementation. A report on the already collected data and management implications will be submitted to the CFEOR Steering Committee in the coming year.
NEW (S-006) Signature Short Term Project
*Ground Cover Restoration in Flatwood Longleaf Pine Communities: Assessment of seed bank and its implications*

**Principal Investigators:**
Kimberly Bohn and Ajay Sharma (PhD student), School of Forest Resources and Conservation, University of Florida

**Project Funders:**
CFEOR members and University of Florida Institute of Food and Agricultural Sciences

**Project Summary:**
Successful restoration of groundcover in longleaf pine ecosystems following decades of suppression may depend on soil seed banks because they contain propagules of species which may be desirable or undesirable for site colonization after activities such as thinnings, burning, or other mechanical treatments are carried out.

**Objective:**
To quantify and compare vegetation and seed banks in various sites under longleaf pine restoration in the hydric and mesic flatwood habitats as affected by restoration and management activities.

**Expected benefits:**
This study will establish baseline data for seed banks associated with pine communities in flatwood ecosystems of gulf coastal plains. Our results will enhance understanding of seed bank-vegetation dynamics as affected by management activities in flatwood ecosystems. The results will guide decision making regarding the reliability of soil seed bank for ground cover restoration, or if seed broadcasting or planting will be necessary component for successful restoration. The study will also involve research plots from CFEOR Signature project (S-001) in Tate’s Hell State Forest and thus add value to and enhance the scope of an on-going project. Data from this study will also support future research concerning seed bank dynamics in response to various restoration and management activities.

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NEW (S-005) Signature Short Term Project
*Flatwoods Species Responses to Restoration Treatment and Season: Trajectory, Success, and Longevity of Fire and Roller Chopping in Fire-suppressed Areas*

**Principal Investigators:**
Leda Kobziar and Adam Watts (PhD student), School of Forest Resources and Conservation, University of Florida

**Project Funders:**
CFEOR members and University of Florida Institute of Food and Agricultural Sciences

**Project Summary:**
As pressure from the expanding wildland-urban interface and air-quality concerns increase the challenge of prescribed fire use to maintain and restore flatwoods groundcover there is a critical need for information comparing the long-term efficacy of restoration treatments, and their longevity.

**Objective:**
To evaluate which treatments and seasons are most effective in restoring underwood species in flatwoods over the long term, the optimum amount of time over which to apply restoration treatments and the difference in longevity of restoration benefits among the season/treatment combinations.

**Expected benefits:**
Results are expected to support the management of fire-suppressed hydric and mesic flatwoods, in which shrubs have become dominant and have reduced graminoid and forb species. Restoration projects will benefit from the long-term nature of this project, which not only gives an indication of the short-term species responses to fire and mechanical treatments, but also the trajectory that plant demographics take when treatments are continued. Finally, a comparison of areas subjected to treatments nearly a decade ago will provide an indication of the long-term effectiveness of restoration treatments when the management objective is the reduction of large woody species and the encouragement of groundcover diversity in fire-suppressed flatwoods understory vegetation.
**Special Project Report**

**Externally Funded Project**

*Graduate Fellowship Program in Adaptive Forest Management*

**Principal Scientists:**
Christine Staudhammer, Damian Adams, Leda Kobziar, Kimberly Bohn, Holly Ober, Douglas Carter, Taylor Stein, School of Forest Resources and Conservation, University of Florida

**Project Summary:**
In the spring of 2009 Christine Staudhammer and the rest of the CFEOR Co-Directors were awarded $236,000 through a USDA National Needs Graduate Fellowship Competitive Grant to establish a graduate fellowship program to conduct research on aspects of adaptive forest management. The program was further enhanced with $40,000 from the School of Forest Resources and Conservation and $64,000 from the College of Agriculture and Life Sciences to pay for tuition and other fringe expenses. Damian Adams is the current program director. This program funds two PhD and two master’s degree assistantships for three years and includes a stipend, full tuition waiver and health coverage. The fellowship program provides students with academic training in interdisciplinary aspects of adaptive forest management, builds communication skills through structured leadership training, and provides mentoring opportunities with natural resource managers outside of academia.

**Program Fellows:**
Sparkle Malone recently completed her master’s degree through this fellowship program and is a first year Ph.D student at the University of Alabama. As a fellow Sparkle’s research was on the effect of fire size and severity on subsequent fires using difference normalized burn ratios in pine dominated flatwood forests in north Florida, she attended several leadership training events with the Florida Natural Resources Leadership Insitute and engaged in mentorship opportunties with CFEOR memebrs. Sparkle is currently working on a project in the Florida Everglades modeling carbon dioxide and methane emissions from long- and short-hydroperiod marshes and is also a SRI (Student Research Initiative) student with the US Forest Service. Sparkle will go on to work for the Rocky Mountain Research Station following completion of her PhD.

Emily Rodriguez is a second year master’s student. Her research topic is “Maximizing wiregrass (Aristida stricta) reproduction for restoration purposes.” Emily is in the data analyses phase of her project and will begin writing up the results this summer. Emily will present her research in a variety of venues throughout the year and plans to graduate in December.

Shelly Johnson is finishing her first year as a PhD student and is developing her proposal for a dissertation focusing on the ecological and social value of wildlife biodiversity and ecosystem services provided by Florida forests. She plans to complete her proposal and conduct an exploratory pilot study this summer.

Brenda Thomas is in her first year as a PhD student and will be working on Wassaw National Wildlife Refuge in Savannah, Georgia this summer reconstructing fire history using dendrochronological techniques. Brenda plans to expand the project next year to nearby Blackbeard Island National Wildlife Refuge. The expanded project will also include a floristic inventory of both island refuges and will provide floristic and hydrologic baseline data, important in light of global climate change.

*Opportunities provided by CFEOR helped me to develop leadership and communication skills that are crucial for a career in natural resource management.*

~Sparkle Malone

Emily Rodriguez, CFEOR Fellowship master’s student

Emily Rodriguez, CFEOR Fellowship master’s student

Shelly Johnson, CFEOR Fellowship PhD student

Brenda Thomas, CFEOR Fellowship PhD student
Sponsored Projects: Projects funded by one or more CFEOR members.

P-011. **Effect of Fire Size and Severity on Subsequent Fires Using DNBR.** Christine Staudhammer et al. 2010. In kind funding provided by USFS.

P-010. **An Improved Seedlot Screening Method for Detection of the Pitch Canker Pathogen.** Jason Smith, 2010. In kind funding provided by DOF.

P-009. **Mechanical Mastication as a Fuels Treatment Method in Pine Flatwoods.** Leda Kobziar, University of Florida, 2010. In kind funding by USFS.

P-008. **Southern Fire Exchange: Putting Fire Science on the Ground.** Leda Kobziar, University of Florida, 2010. Funded by USDA.

P-007. **Economic Impact Analysis of Woody Biomass Utilization for Bioenergy in Florida.** James Karels, Florida Division of Forestry and Tim White, School of Forest Resources and Conservation, University of Florida, 2009. Funded by Florida Division of Forestry.

P-006. **Stewardship Ecosystem Services Study.** Francisco Escobedo, University of Florida, 2009. Funded by Florida Division of Forestry.


Endorsed Projects: Projects that have received a letter of support from CFEOR.

E-024 **Implications of Upland Forest Management on Wetland Hydrologic Condition.** Matthew Cohen and Daniel Mc Laughlin, University of Florida, 2011.


E-021 **Interactive Effects of Sea-Level Rise and Fire on Florida’s Coastal Forests.** Leda Kobziar, University of Florida, 2009.


E-019 **Simulation Modeling to Test Different Harvesting Regimes for Stand Conversion and Old Growth Restoration in Southern Pines.** Christina Staudhammer, University of Florida, 2009.


E-017 **Baseline Survey, Health Assessment and Protection of Critically Endangered Torreya taxifolia in Florida and Georgia.** Jason Smith, University of Florida, 2009.


To learn more about Sponsored and Endorsed projects go to [www.sfrc.ufl.edu/CFEOR](http://www.sfrc.ufl.edu/CFEOR)
**About CFEOR**

**Mission:** To develop and disseminate knowledge needed to conserve and manage Florida's forests as healthy, working ecosystems that provide social, ecological and economic benefits on a sustainable basis.

**Established:** Initiated on October 30, 2006 in Tallahassee by Dr. Timothy White and Mr. Michael Long, who envisioned that sustainability of forests and other natural areas can be ensured effectively through collaborative efforts among governmental (federal, state, and local) and non-governmental agencies, private industries, consultants, municipalities, land trusts, private land owners and universities.

**Goal:** To facilitate integrative research and outreach activities and promote sustainable conservation and management of Florida's forest ecosystems with particular interest in its public and family forests.

**Need:** With over nine million acres of publically owned forests and other natural areas in Florida, there is an immense need for scientifically derived management strategies to ensure sustained production of economic, social, and ecological services. In Florida, the importance of public natural areas was recognized and significant efforts were made to expand them. As more natural areas are brought into public domain, there is an increasing need for their sustainable management. These unique resources, if not managed effectively, will not be able to offer ecological, economic, and social benefits at a socially desirable level. At the extreme, they could become public liabilities by increasing the risk of wildfires and invasion of pests/diseases and by offering limited economic and employment opportunities to local communities.

Family forests form another large and critical sector of Florida’s forests. With approximately 400,000 different owners, accounting for nearly 4 million acres, family forests are being challenged by estate taxes, development pressures, invasive pests and the need to provide for economic viability. Research is urgently needed to quantify the economic value of ecosystem services. Dissemination of this information to land owners, as well as information on alternative forest products, will be crucial to sustaining rural landscapes.

Researchers and extension specialists, in cooperation with CFEOR members, are conducting applied research on issues such as restoring forest ecosystems, valuing ecosystem services, assessing recreation management, promoting biodiversity, controlling invasive, exotic species, exploring market opportunities and understanding prescribed fire. From these applications are being developed to further the health and sustainability of forest ecosystems.

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**2010-2011 Financial Report**

**Income**
- $83,000
- Membership
- UF/IFAS
- Outreach Projects
- Research Projects
- Graduate Fellowship

**Expenses**
- $83,000
- Personnel
- Operations
- Outreach Projects
- Research Projects
- Graduate Fellowship