CFEOR’s Long Term Signature Project: A summary of achievements at year 5!

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In 2007 CFEOR was established with a goal to conduct long term landscape scale research necessary to better understand how to conserve and manage Florida's forests as healthy, working ecosystems. CFEOR would produce high quality research through multidisciplinary expertise, multi-institutional support as well as offer communications, training and technology transfer among scientists and research professionals. Our Signature project “Developing Adaptive Management Strategies for Ecosystems in Transition” or “AMP” was collaboratively developed to simultaneously address multiple issues related to ecosystem restoration over a 20 year timeline. The first 5 years of this project have been entirely supported by CFEOR members.

Currently, a large proportion of conserved forests in the Southeast has an even-aged structure either due to historic fire suppression or due to conversion to plantations and is in need of restoration. 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. The overall objectives of AMP is to examine a range of uneven-aged reproduction methods with two different fire frequencies in order to achieve a sustainable multifunctional ecosystem that can provide a number of commodity (timber production and carbon sequestration) and non-commodity (biodiversity enhancement, wildlife habitat, and recreational value) services.

At year 5, AMP is well established and is on its way to achieving our long term research objectives. In 2008-09 research plots were established in a 30+ year old slash pine plantation at Tate’s Hell State Forest and baseline data was collected before implementing the experimental conversion harvest treatments which were installed in 2010-11. Dr. Kimberly Bohn, Associate Professor and Dr. Ajay Sharma, Research Associate at the UF School of Forest Resources and Conservation, have been the principal investigators on the AMP project up to this time and have already conducted several short term research studies during its establishment. These include simulation analyses of stand conversion regimes, characterization of light regimes as affected by uneven-aged harvests, and an examination of soil seed bank for its potential to restore understory in-situ. As of March 2013, individual trees in the research plots have been permanently marked and measured, and current projects will quantify, characterize, and compare the immediate groundcover responses and the natural regeneration following the experimental conversion harvest treatments and initial dormant season burning.

Results of AMP research have been disseminated through CFEOR workshops, CFEOR project reports, the Updates newsletter, professional publications as well as numerous professional conferences. To learn more about AMP go to sfrc.ufl.edu/CFEOR/Longterm2008.html.
Recent Research

Reproductive failure of a long-lived wetland tree in urban lands and managed forests


Land use (e.g. urbanization, agriculture, natural lands management) may directly affect populations by habitat loss and fragmentation, and indirectly by altering conditions needed for reproductive success. The effects of urbanization are especially pronounced for populations that remain among urbanized areas, but they are difficult to detect in long-lived species. We evaluated the effects of urbanization on the recruitment of cypress (Taxodium distichum), a long-lived coniferous tree that dominates isolated wetlands in Orlando, Florida, USA, a rapidly urbanizing region. Cypress requires saturated but not flooded soils to germinate, and seedlings are easily out-competed in the absence of fire. We hypothesized that urbanization has altered the hydrology and fire regimes, leading to biological inertia and reduced cypress recruitment relative to managed forest and ranchland. We found low cypress recruitment in urban areas, but surprisingly in managed forest as well. Many cypress populations in managed forest were bounded by fire breaks which prevent upland fires from burning into the wetlands. Ranchland had significantly more recruitment than urban and managed forest, and these wetlands did not have fire breaks. In urban lands, the effects of urbanization were delayed. Cypress recruitment initially occurred near the edge of wetlands where hydrological conditions were most favourable, but virtually stopped at 20 years post-urbanization. Cypress recruitment also occurred near the edge of the wetlands in managed forests and ranchlands and was higher in larger wetlands. Synthesis and applications. Urbanization is associated with the eventual reproductive failure of cypress and in the absence of management practice changes, cypress recruitment may cease in many additional wetlands. If past urbanization rates continue, 80-90% of cypress populations in isolated wetlands in the path of urban sprawl could permanently cease recruitment in 100 years. Reducing urban sprawl and introducing prescribed fire in managed-forest cypress domes could mitigate this effect and conserve reproduction of this long-lived, dominant tree species and the diversity of the wetlands they typify.

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Upcoming Events


- **Florida Chapter of the Wildlife Society's Annual Spring Conference, April 10-12, 2013** in Melbourne, FL. For registration go to www.fltws.org


- **Cost Share program for on-farm weather stations provided by Florida Department of Agriculture and Consumer Services.** Funds are available on a first-come, first-served basis. To learn more contact Rance Ellis FDACS 850-394-9124 or Susie Bishop 863-402-7020. bishop@highlandsswcd.org


- **32nd Southern Forest Tree Improvement Conference Meeting (SFTIC), June 10-13, 2013** at the Madren Continuing Education and Conference Center, Clemson University, Clemson, SC. For more information go to www.clemson.edu/cafls/sftic
Upcoming Events

- 9th Southern Forestry And Natural Resource Management GIS Conference, December 8-10, 2013 in Athens, GA. For more information go to www.soforgis.net/2013