Ecosystem Restoration Through A Picture Window: Where good management meets serendipity

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Julington-Durbin Preserve is a 2000-acre peninsula found in the southern portion of Duval County, jointly managed by the St. John’s River Water Management District and the City of Jacksonville. Large portions of the peninsula were planted with sand pine (Pinus clausa var. clausa), and consequently clear-cut harvested in 2005. In dealing with the subsequent sand pine regeneration, the area was roller-chopped and a study instituted testing a variety of control methods in conjunction with fire to compare cost and efficacy.

Because of the highly urbanized area, the prescribed fire window is extremely narrow and the availability of prescribing extreme fire behavior to treat the sand pine becomes remote. It has shown that without additional sand pine removal methods, a sizable portion of the regenerating sand pine will grow past the expected top-kill height of the average prescribed fire.

It can sometimes be very difficult for land managers to separate what they know to be successful ecosystem management techniques from the ascetic impacts of those same techniques. Specifically, those impacts as perceived by the untrained public.

Through the last six years, neighbors of this particular unit watched as a mature forest was clear-cut, then burned. Began to recover and re-grow then drum-chopped. Began to re-grow and burned again. Finally, to their eyes and against all odds, a stand of trees began to survive and grow. They could not know that these were an undesirable species. What they did know was every night after work they would look out the window and see new impacts and wonder when would the “desolation” end?

At Julington-Durbin, a more proactive approach was taken. This largely consisted of approaching the four housing developments and establishing a point of contact with the HOA’s. This not only allowed for the telegraphing of potential activities before they began, but also allowed the District to offer night or weekend talks for homeowners covering such topics as “Why Sandhills Are Important”, or “The Use Of Prescribed Fire”.

To date, we have conducted four such talks and fielded several dozen concerns or questions via phone, funneled to us by the HOA. At Julington-Durbin, it turns out that a sizeable aspect of ecosystem management includes esthetic management for hundreds of the surrounding picture windows. Taking the time to be transparent and explain the expected short-term impacts as related to the long-term goals can be very rewarding. This was exemplified by a 140-acre Saturday burn one quarter of a mile from the entrance gate of the park. Over twenty people passed the fire and made comments, not a single comment was negative.

Back to the hand felling of the residual sand pine in the “control” block. Even with the education and outreach conducted, we expected some negative comments. To the average homeowner the District was once again chopping all the trees down just as they began to look like trees again. During the removal of the ~300 stems per acre of 20-foot tall sand pine, what began to emerge unexpectedly was a natural regeneration stocking of ~150 stems per acre of 15-foot tall longleaf pine. Through the picture windows all around, there was very little difference to the view shed. In terms of the sand hill ecosystem, this was a definite and positive change. By planning for the worst case and receiving a pleasant surprise, everyone wins.
Recent Research

Post-Dispersal Seed Predation, Germination, and Seedling Survival of Five Rare Florida Scrub Species in Intact and Degraded Habitats


Knowledge of seed ecology is important for the restoration of ecosystems degraded by anthropogenic activities. Current efforts to preserve and reintroduce populations of plant species endemic to Florida are hindered by a lack of information on demographic responses to human alteration. Comparisons of seed removal, germination, and establishment in both intact and degraded habitats will aid in management decisions for species in need of protection. Our objectives were to assess the impact of post-dispersal seed predation on plant populations in degraded and intact habitats, and to investigate the effects of habitat and microsite on seed germination and establishment. For five rare Florida scrub species with different seed sizes (Liatris ohlingerae, Eryngium cuneifolium, Polygonella basiramia, Hypericum cumulicola, Paronychia chartacea subsp. chartacea), we conducted a seed removal experiment with seeds exposed to insects and vertebrates, and to insects only, with a no-access control. We also planted seeds in replicated degraded and intact scrub sites (Spring Field Trial: in bare sand, Winter Field Trial: in bare sand, litter only, and under shrubs with litter), and determined background germination rates in a growth chamber. The contrasting pattern in seed removal among treatments suggested that habitat and seed size affect the likelihood of removal in Florida scrub. Species with large seeds such as L. ohlingerae were removed in higher frequency, in degraded scrub, likely by vertebrates. Species with small seeds such as H. cumulicola and P. chartacea were removed by invertebrates and in higher frequency in intact scrub. E. cuneifolium had significantly more seedlings in degraded scrub and P. chartacea had significantly more germination in the intact scrub in the Spring Field Trial. E. cuneifolium, H. cumulicola and P. chartacea had higher germination in bare sand than in litter only or under shrubs. Our data indicate that scrub herbs are differentially vulnerable at particular life history stages and that this vulnerability can be context dependent. Restoration success will require a careful assessment of potential seed predators and abiotic conditions favoring germination and survival of study species in degraded habitat; efforts to increase heterogeneity in areas slated for restoration will likely promote the establishment of multiple targeted species. © BioOne 2012. To read the full article CFEOR members click here.

Upcoming Events

- **Climate and Forests, What’s Changing?** June 12, 2012 in Tallahassee, FL. Landowners and professionals learn about management practices that can help their forest management program adapt to a changing climate. For more information, contact Leon County Extension: (850) 606-5202

- **Forest Stewardship Workshop: Grow Timber Revenue, June 19, 2012** in Marianna, FL. Guidance on timber management and marketing strategies that can increase returns from harvests, reduce costs, and encourage forest management. For more information: [http://fsp-workshop061912.eventbrite.com/](http://fsp-workshop061912.eventbrite.com/)

- **Webinar: Firewise Communities/USA, July 17, 2012**. For more information: [http://www.cafiresci.org/wui-webinar-registration](http://www.cafiresci.org/wui-webinar-registration)

- **Florida Small Farms and Alternative Enterprises Conference, July 27-29, 2012** in Kissimmee, FL. This conference is designed to provide farmers with up-to-date, research-based, in-depth educational information. For more information: [http://conference.ifas.ufl.edu/smallfarms/](http://conference.ifas.ufl.edu/smallfarms/)

- **Basic Wildland Firefighter Training (S130/190), August 6-10, 2012** in Gainesville and Melrose, FL. For more information: [http://s130-190.eventbrite.com/](http://s130-190.eventbrite.com/)
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