

SOUTHEAST FLORIDA SCRUB ECOSYSTEM WORKING GROUP

Draft minutes

October 22, 2013

On October 22, 2013, the SEFSEWG meeting included a morning field trip to two of St Lucie County owned and managed preserves, Indrio Savannahs and Harbor Branch Scrub. Thanks for the doughnuts by Tim Towles!

Introductions

| Last name | First name | Organization/agency |
|-----------|------------|---|
| Armstrong | Dale | St. Lucie County ERD |
| Bach | Jeff | Florida Park Service |
| Bobsein | Barbara | Palm Beach County ERM |
| Braun | Greg | Sustainable Ecosystems International |
| Bupp | Glen | Bok Tower Gardens |
| Carroll | Joe | Pelican Island Audubon |
| Elseroad | Judy | St. Sebastian River Preserve State Park |
| Evans | Jennifer | St. Lucie County Env Resources Dpt. |
| Faulhaber | Craig | FWC |
| Folk | Monica | Milliken Forestry |
| Fousek | Steve | St. Lucie County ERD |
| Gavagni | Dylan | Florida Park Service |
| Goldberg | Diane | Audubon, Conservation Alliance, Native Plant Society, Master Naturalist |
| Hitt | Heather | FWC |
| Hopkins | Pam | Jay Watch |
| Landrum | Elizabeth | FWS |
| Montanaro | Bob | |
| Pauley | Brion | St. Lucie County Env Resources Dpt. |
| Peterson | Cheryl | Bok Tower Gardens |
| Powell | Beth | Indian River County |
| Thompson | Amanda | St. Lucie County Env Resources Dpt. |
| Towles | Tim | FWC |
| Vandello | Chris | FDEP - Florida Park Service |
| Wagner | Billi | Jay Watch |
| Witmer | David | Palm Beach County ERM |

Craig Faulhaber facilitated the meeting

Barbara Bobsein ERM note taker

- Steve Fousek with St. Lucie County led a walking field hike into Indrio Savannahs and discussed acquisition and management issues. Passed a bond back in 1994.

- Indrio Savannahs Preserve has been owned since the 1970s, part was donated, and the remaining 300 acres purchased. Mostly 1 acre lots, no remaining out parcels. 9 acre blocks subdivide the property.
- Property was never developed and allowed the county to purchase.
- The adjoining 400-acre Klatt property is finally willing to sell. St. Lucie has been trying to purchase the last large undeveloped parcel in eastern St. Lucie, which contains scrub jay habitat.
- St. Lucie has 6 million left for acquisition. 3 million in bonds plus 3 million in the Greenways and Trails Program (allows for the purchase of non-native habitats and wetlands).
- Property contains scrubby flatwoods located west of the Atlantic Coastal Ridge and scrub jays are found in this area behind the ridge.
- Billi Wagner, Jay Watch volunteer, monitors jays in this preserve. 3 families live here. 13 jays total at Indrio Savannahs. Billi emphasized that it takes 3 separate survey days to find all the jays, which is why the Jay Watch protocol includes multiple days of surveys. 2 families of jays came to visit at the edge of their territories. Public access necessary because of public funding and you have to deal with the public access issues such as litter.
- Site is still drained from old drainage canals. Old roadways are now used as trails and fire lines.
- Wildfire has swept the property, pine beetles moved in next. 1986 and more recent in 2004. The 2004 was after a Rx burn.
- 11 acres of scrub, ~70 acres scrubby flatwoods. Active bald eagle nest and scrub jays.
- Chopped units from FWC gopher tortoise assistance funding, burned, chopped and burned.
- Prescribed burns have also been conducted by St. Lucie ERD and FFS. Started in 1999 with very little staff for the prescribed burning. Burned only with north winds due to site location between residential areas and U.S. 1.
- Harbor Branch is the latest acquisition. It is State lands and county managed. St. Lucie contributed 1 million. Scrub mint is still in bloom just past its peak at Harbor Branch preserve. Lakela's mint, *Dicerandra immaculata* is endangered. They also have planted *D. immaculata* on 11 acres in the southeast corner of Indrio Savannahs.
- Want to manage the airport property. Lots of scrubby flatwoods and exotics along the airport property and Indrio road.
- Cogon grass is a problem at the airport. Used to have Meadowlarks. Species diversity has severely gone down over the last decade with no management.
- Not much of a feral cat problem. No hog issues.
- The mined area has a lot of exotics like wedelia and smut grass. Trees have been planted and are starting to take off.
- Fencing around natural areas tends to get vandalized in the beginning and then tapers off. Evidence of ATV activity was observed during the walk. They're coming in from the neighboring properties.
- *Liatris* is in full bloom.
- We visited adjacent units where the flatwoods had been chopped and burned vs.

unchopped and burned. They employed a light chop with an empty, 7-ft drum. The untreated areas had 6-ft tall palmettos.

- Best unit was burned twice by wildfire.
- Harbor Branch is 5 years behind this property in management.
- Old drainage ditches exist, should they eliminate the old ditches by pushing in the roads? Would the restoration of the ditches help or hurt the jays? The roads serve as hiking trails.
- Need a hydrological study to see how much the drainage impacts the water table.
- Craig noted that many small sandy openings spread throughout the scrubby flatwoods are superior to linear sandy openings, which could serve as “highways” for nest predators.
- Nice open areas created by burning trees and snags left to burn and smolder. Jays love the units with the most management. Winter burn 2004, wildfire summer 2004, chop in 2009, Rx burn 2010.
- Scrub-jays can tolerate 1 to 2 trees per acre in scrubby flatwoods, and limbs cast from these scattered pines can help create and maintain sandy openings for the jays.
- Gopher tortoises are burrowed into the berms. Nice native grasses, wire grass, yellow eyed grass, scrub buckwheat? Wireweed or October weed maybe.

Harbor Branch Preserve

- Portion of Harbor Branch preserve contains the endangered scrub mint *Dicerandra immaculata*, Lakela’s mint. Scrub mint located on the south side of the old parking lot at Harbor Branch east side of US 1. Public access is restricted in the area that contains the mint. The parcel was purchased via multiple partners (FAU, state, county funds).
- Parcel is very overgrown. Mints are everywhere late in the bloom. *Dicerandra immaculata* can be distinguished from the similar *D. frutescens*, also present on the property, by the ranked leaves.
- This area that contains the mints appears to have been cleared back in the fifties, possibly for pineapples.
- Bok will provide the management guidance for the mints.
- Eight acre parcel very overgrown.
- Strong mint smell from the Savannah’s mint.

Oxbow Nature Center

Land Management of St Lucie Preserves – Steve Fousek, St. Lucie County Env1. Resources Dept.

- Thanks to Greg Braun for helping put together the meeting location and thanks to St. Lucie staff at the Oxbow Center.
- Historically, 3% of St. Lucie County was scrub/scrubby flatwoods – 11,039 acres
- 21% has been saved – 2,320 acres.

- Steve Fousek St. Lucie has an acquisition committee that determines what lands get purchased. The process of acquisition comes before the management can start. This can take years and then you need staff.
- What should be the specific focus of the management and what types of management should be utilized?
- Focused on habitat and passed an Upland bond. No wetlands considered. Listed species, condition, and size of habitat all considered. Looked for partners; some were bought just by St. Lucie. They want more of the Savannahs but the costs are rising. Looking for matching funds.
- Purchased 25 Sites all over the County with 700 acres of scrub.
- 750 ac scrubby flatwoods.
- Only acquired half of what they wanted to acquire. Identified all the sites that contained scrub including Walton Scrub, Spruce Bluff, etc.
- No more high quality land available for sale. Klatt property is the last remaining large undeveloped parcel of scrubby flatwoods left to purchase and is about 400 acres.
- 17% of the preserved lands that have been acquired is scrub and scrubby flatwoods. Scrub jays occupy the uplands.
- Some burning and some chopping on some sites. All burns on a north wind.
- Summarizing the management that has occurred since the early 1990s.
- Sansevieria is a problem on many scrub sites. Still battling Brazilian pepper, cogon grass, lygodium, rosary pea, torpedo grass, etc....
- Non-invasive species of Sansevieria in a garden?
- Kalanchoe is another problem.
- Question: What is the most effective method that others have used for Sansevieria?
 - Hand pull and bag is the best method.
 - PBC experience with herbicide is the sticker will translocate and kill other species.
 - Florida Park Service had developed a cocktail that was effective in the Keys and Jonathan Dickinson State Park for killing Sansevieria without adversely impacting natives: cut/spray 10 % glyphosate on the stump and bag and remove the cut material.
- St. Lucie staff has grown over two decades very slowly.
- Uses inmates 4 days a week to help manage the natural areas.
- Contracted out the mowing to free up staff time.
- Only 5 techs to help
- The Treasure Coast Rare Fruit Society has been selling Guava trees and says they are not invasive. One participant wants St. Lucie to send them a letter asking them to not sell that species.
- St. Lucie has grinders. One can do 4 to 6 inch dbh stuff. The other can do up to 12 inches dbh. Small one fits on a gooseneck trailer that staff can move. And also has a fire plow.
- Choppers also used. Must be careful not to damage slash pine roots with a heavy cylinder.
- St. Lucie County airport had some high quality habitat but have not actively managed the

land in years. Used to have cattle there that helped but they are gone.

Progressional conservation efforts for Lakela's mint *Dicerandra immaculata* by Cheryl Peterson and Glen Bupp, Rare Plant Conservation Program, Bok Tower Gardens

- Progressive management needed at the Lakela's mint preserve that Bok Tower will outline.
- More samples brought in by Glen to show everyone. Rare plant curator at Bok.
- Bok Tower Gardens works with the Center for Plant Conservation, which has been around since the mid 80s to preserve rare and endangered plants by collecting plant germplasm.
- Gardens and seed collections of rare plants. Cryogenics for the long-term storage of plant germplasm.
- Lakela's mint is found along a 3 mile stretch between Indian River and St. Lucie counties, with 5 major populations in specific scrub habitat. Most lost to development.
- 7 years of habitat monitoring of the scrub. Collecting of seeds done annually.
- Very fragrant and the smell of the mints varies from species to species.
- Pollinators are studied to see how the plants are pollinated. Interesting data was gathered from the studies. 93% of the pollinators were honey bees. 7% were native bees. Honeybees visited 3 times more within a plant than native bees, which could be a problem if the plants are self-pollinating.
- Diploid plants have smaller stomata and more of them; polyploidy plants had larger stomata and fewer of them.
- Bok has secured a lot of germplasm to preserve this species of mints. Two full plots dedicated to the mints at Bok.
- Findings of the 7 years of monitoring of the mints. What are the impacts and how can we augment the populations?
- This year was a high recruitment year.
- Hallstrom Farmstead population is increasing.
- Harbor Branch is the largest population (~8000 individuals) with large population fluctuations.
- Indrio Savannahs is a third area that the mints are found. The population was introduced.
- Dr. Matthew Richardson helped with population viability analysis (available at Boktower.org); differences found on the three different sites.
- Chemical analysis phylogeny based on essential oils.
- Looked at areas occupied by the plants vs. random habitats. Associated with shorter understory, less detritus (type mattered), fewer woody stems, greater number of conspecifics, less canopy coverage. A gap specialist.
- Grows in open sunny habitats; hard to maintain without fire.
- Germination trials done – liquid smoke pre-soak performed best in trials, though < 1% germination rate overall.
- The soils are similar where the mints are growing but there are variations in soil types. Micro habitat of the scrub probably makes the difference. Prefers well-drained sand.

Higher tolerance for different soil types, but lower tolerance for different microhabitats.

- Prescribed fire is the best management tool -- Alternate fire return interval.
- Hurricanes had an adverse impact with all the dead fall from pines and debris covering the open areas.
- Fire would help by opening up the area.
- The seeds don't last long in the seed bank.
- Rare Plant Conservation Program at Bok Towers.

Proposed appendices to the Scrub Management Guidelines – Craig Faulhaber, FWC

- Here to intro potential revisions and to seek input on managing specific species.
- Collaboration between FNAI and FWC for scrub management. Guidelines came out in 2009 with minor revisions in 2010. Additional revisions warranted based on feedback from partners. There are several scrub endemic species that FWC has limited knowledge of and is seeking input from members of the scrub working group on specific species that are listed in the appendix.
- Scrub jays are used as the umbrella species under which many other scrub species fall, because they have similar requirements for management.
- If you are managing with pyrodiversity within the range suitable for scrub-jays, you will help multiple species.
- The revision will include an introductory paragraph about identifying resources of conservation concern and setting objectives accordingly.
- The revision will include separate sections for oak scrub and rosemary scrub to underscore differences in management techniques.
- The revision may elaborate on conditions that are suitable for scrub-jays as well as those that are optimal.
- Aside: Sandy openings do make a difference for scrub-jays: territories with optimal shrub heights with sandy openings are sources of young birds, but territories with optimal height shrubs that lack openings just break even.
- We hope to include an appendix of photos to illustrate concepts in the guidelines – we need pictures of sandy openings at the right scale for scrub-jays (many small are better than a few large).
- We will include appendices for all the rare plants and animals in the scrub.
- Lay out the species that are federally or state listed and/or listed by FNAI as S3.
- Rosemary included to underscore differences in management.
- 63 species in the table to start with. Craig relied on help with the plants from Archbold Biological Station and the Florida Forest Service.
- The appendices include a column indicating if species are under the “scrub-jay umbrella.” The vast majority were under the umbrella.
- The appendices include a column for additional management actions beyond the scrub-jay umbrella. For example, some animal species, such as indigo snakes and black bears, are dependent upon multiple habitats. Some species, like *Cladonia perforata*, require additional management considerations.

- Need more information for sand dune spurge, large-flowered rosemary, twisted air plant, and a few others.
- Some species may not fall under the umbrella, but we're working out the details. For example, sand skinks may require longer fire intervals. (See presentation for other examples.)
- Participants suggested adding a few species that may nest in trees in or adjacent to scrub, such as bald eagles and bonneted bats.
- Suzanne Kennedy very familiar with scrub species.
- Please provide Craig with input on any of the species that are listed in the Appendix. recommendations for exclusion or specific management.



Steve Fousek, St. Lucie County ERD, at the Harbor Branch Preserve speaking about the endangered Lakela's mint.



Craig Faulhaber kicking off the afternoon session.



Lakela's mint at Harbor Branch Preserve, St. Lucie County