



*Rhexia mariana* ©Darel Hess 2bnthewild.com

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# The Rhexia

Paynes Prairie Chapter  
 Florida Native Plant Society  
 April 2004

## Ecosystems: Freshwater Swamps

by Cathy Vogelsong, Pinellas Chapter, FNPS

Florida's wetlands, including both swamps (with trees) and marshes (treeless), are extremely complex and relatively poorly understood. They once covered half of the state, but drainage and development have reduced wetlands to about 10% of Florida's land area. Swamps are still distributed throughout the state, ranging in climate from subtropical to north temperate.

One classification system subdivides Florida swamps based on four environmental variables -- hydroperiod, frequency of fire, depth of organic matter accumulation, and the source of the water in the habitat.

Much like pine flatwoods, freshwater swamps often exist in a mosaic of ecosystems. As stated in Myers and Ewel (*Ecosystems of Florida*), "these environmental variables affect swamps throughout the world, but the unique combination in Florida of high fire frequency, low topography, high surficial groundwater tables, and seepage from deep groundwater aquifers has produced a collage of wetlands that is unmatched in diversity."

Hydroperiod is the major environmental feature and control in swamps. Hydroperiod is the amount of time each year that there is standing water, or soils are saturated. Roughly, there is an inverse relationship between length of hydroperiod and species diversity, though other environmental factors can change this. The longer the hydroperiod - less oxygen is available and minerals like soluble iron and manganese accumulate - the fewer the number of species that can tolerate the increasingly stressful conditions.

To survive, plants use a number of special adaptations to acquire and conserve oxygen, including adventitious

water roots, aerial roots, cypress "knees," the ability to transport oxygen downward to the roots, specialized lenticels, and thick, leathery evergreen leaves with waxy cuticles. Flared trunk bases called buttresses, help to stabilize trees in the soft ground. Still, the most flood-tolerant conifer (cypress) and hardwood (*Nyssa*) trees both require periods of drought for seed germination.

Fires in swamps are crucial but occur infrequently, from once a decade to once a century. These slow-burning fires burn off accumulated litter and peat. This prevents the swamps from succeeding into mesic ecosystems, and limits the plant species. The source of water - from rain, shallow groundwater, deep aquifer seepage, and flowing rivers - greatly affects the nutrients in the swamp system.

For example, the pond cypress in the cypress savannas of south Florida are a stunted form (called "dwarf" or "hat rack" cypress) chiefly because that ecosystem is dependent on nutrient-poor, and frequently fluctuating, rainwater levels. Accumulation of litter is dependent upon the other three major variables above. Decomposition of the litter is slow, especially in acid and near anaerobic conditions.

Florida swamps can be divided into two major groups, river swamps and stillwater swamps, based upon their water regimes. This takes into account the source of water, flow rate, and hydroperiod. One-third of Florida swamps are river swamps, with most occurring in north Florida (temperate climate). These are the floodplain forests, divided into "whitewater" rivers that carry particulate matter and "blackwater" rivers

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## Paynes Prairie Chapter of the Florida Native Plant Society

The *Rhexia* is published monthly September - November and January - May by the Paynes Prairie Chapter of the Florida Native Plant Society. The purpose of the Florida Native Plant Society is the preservation, conservation, and restoration of the native plants and native plant communities of Florida. See our website at [www.fnps.org](http://www.fnps.org).

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### Jim Weimer Wins Award

Congratulations to Jim Weimer for being named Florida Resource Manager of the Year by the Department of Environmental Protection. Jim has worked as manager of Paynes Prairie Preserve over 20 years spearheading projects of invasive plant removal, installation of the Highway 441 ecopassage and the restoration of water flow by dyke removal.

Jim is a long-time member in our chapter and you will see him at plant sales, air potato roundup and other community activities and events. Jim is a dedicated naturalist and his heart always seems to be in his work.

This award carries a \$5000 donation that will be used for resource protection at Paynes Prairie Park.

Thank you, Jim for your dedication and hard work protecting this special place for us.

### March Field Trip Report

It was a beautiful spring morning for our March field trip to Gainesville Nature Operations properties. We are grateful to Geoff Parks, our March speaker, who followed up his talk by taking us to two newly acquired properties.

You've probably passed the Cofrin Property on NW 8<sup>th</sup> Avenue a thousand times on your way to the I-75 interchange. Circled by development, this 30 acre parcel runs along a slope beside a meandering creek beneath swamp chestnut oak and other hardwoods. The house on the property has a beautiful view of the forest and will be remodeled as an environmental education center.

The Split Rock property borders I-75 off SW 20<sup>th</sup> Avenue and is not easily accessible but we were able to enter with Geoff and drive along the fire road to the site of some very impressive rocks left as ancient markers of an old springhead. The elevation dramatically decreased as we entered an open area that drains into Hogtown Creek. We bushwhacked a trail through the Planer trees and low grass to see the creek in one of its fastest moving areas rushing by us like a mini-whitewater. This is certainly an excellent site for future field trips.

## Program Notes for Tuesday, April 13, 2004 Plant ID Workshop - 6:00 pm Meeting - 7:30 pm

*Dr. Alison Fox*  
Exotic/Invasive Plants of Florida and the Southeast

Come by the Matheson Center at 7:30pm to hear Dr. Alison Fox speak on "Exotic/Invasive Plants of Florida and the Southeast." Dr. Fox is a professor in the UF Agronomy Department. She teaches undergraduate and graduate classes on aquatic and terrestrial biological invasions and weeds. Her research projects address biology and management of invasive plants. She is the past president of the national Aquatic Plant Management Society, a director of the Weed Science Society of America, and a director of the Florida Exotic Pest Plant Council.

Our regular social time and plant raffle will follow the program.

*April Field Trip - Mill Creek*  
Saturday, April 17, 2004, 9:00 am-Noon

Join us in April for our field trip to the Mill Creek Nature Preserve, the first property acquired through Alachua County Forever, the county's environmental lands acquisition program. During our visit to this 1,200 acre preserve we will see slope forest, mesic hammock, pond pine flatwoods, depression marsh and hydric hammock. While you are reveling in the beauty and splendor of Mill Creek Nature Preserve, be prepared for a good deal of walking through uneven terrain, perhaps getting a little wet and exposure to ticks and Chiggers! To car pool, meet in the parking lot of the old Kash N' Karry Food Store on the northwest corner of NW 13<sup>th</sup> Street and 23<sup>rd</sup> Avenue at 8:00am or meet at the intersection of CR 236 and CR 241 at 8:30. Contact Sandra Vardaman for question or cancellation information at 379-9754.

### Paynes Prairie Chapter Partners with PCEC

By Karen Ahlers

The Old Palatka Waterworks Environmental Education Center in Palatka has been in the making for more than 10 years. With Putnam County Environmental Council (PCEC) founder, Sandy Kokernoot leading the way, the City of Palatka and other volunteer partner organizations have written grants for land acquisition and historic preservation of the original water works for the city, built around 1865.

The property is approximately 15-20 acres and is located adjacent to Ravine Gardens State Park.

Much work has already been done and recently PCEC has taken on the job of creating a native landscape. Vol-

unteers have been busy readying the grounds for planting. So far, about 40 huge loads of mulch have been spread, progress has been made removing exotics like air potato and Golden raintree, debris has been removed, plants have been planted, and nest boxes and bat houses have been installed. Fortunately, there is a very dedicated group of volunteers, including school groups, that shows up for our workdays.

Claudia Larsen and Jill McGuire visited the site last year and Claudia has graciously designed a site plan and provided a plant list. A few species have been added and a few removed to identify plant material that will not only thrive but be a true demonstration of the beauty

*(Continued on page 4)*

*In My Yard..... My Borrowed Backyard* by Mary Rhodes

**Carl's Garden Workday  
Planned for April 24**

By Brian Quinn

I first discovered my "borrowed" backyard by canoe. I'd recently moved to a house at the swampy end of a country road with a few houses on the lake side and pine plantation and mesic hammock on the other. While exploring the lake, I found a path through the shoreline grasses and the cypress jungle into a magical new world of marshland. Following a path through the maidencane, bull-rush, duck potato, pickerel weed, and water lilies, I headed to what appeared to be an island but was more cypress swamp surrounding a small dark water lake.

Totally enchanted by this private new world I'd discovered and realizing that my house must lie somewhere across the marsh from the lake, I paddled over to find a fairly dry path leading to the road. I was delighted to find I could walk to the marsh when the lake was too rough for canoeing.

I had rediscovered a childhood delight, the vacant lot next door soon became my 200 acre "borrowed" backyard to play in.

Now, let me take you on a quick spring time walk through my beautiful borrowed backyard. It is generally rather low mesic hammock and pine flatwoods. There are three small permanent wetlands in addition to the lakeside swamp and marsh. I enter through the shady hammock with its many large live oaks, gall berry, beautyberry and dwarf blueberries which are blooming now in sunny areas. I also admire the many mosses and mushrooms. Next is a young field of planted pines where two species of blue violets are almost finished blooming but the blackberries are blooming in profusion. A short de-

tour takes me to the most accessible wetland, down a rough fire lane through more planted pines to a wide grassy road, most likely an airstrip at one time. The wet edges have some small wetland plants like sundews and bachelor buttons, both yellow and orange. Recent rain flooded the path beside the wetland but unfortunately the clumps of pitcher plants are on higher ground and are still mostly winter brown. The hairy wicky growing there looks good and I hope to see it bloom in May.

Back on the main road we come to cogon grass corner; unfortunate, but almost the only alien invader on the property. An especially beautiful live oak once stood here in lonely splendor. It died in the early nineties but its magnificent black bones are still visible. On the other side of the road is a young mixed forest with a path cut through to Lake Bonnett where hordes of lanceleaf white violets bloom. Then I'll follow the fire lane beside a cypress swamp with rain lilies and blackberries or perhaps I'll go on a path through the pines which still gives the effect of walking through deep woods. If I'm really feeling brave, I might try an overgrown path through the hammock before I head toward home.

Thanks so much to Jill McGuire and Alison Fisher-Blakeslee for saving my borrowed backyard.

(Editor's Note: *What Mary so affectionately refers to as her "borrowed backyard" is part of the property on Lake Santa Fe that was recently approved for purchase through the Florida Forever program.*)



Pickerelweed (*Pontederia cordata*)

Over three years ago, our chapter lost a very active and valued member, Carl Miles. Carl embraced nature of all types, but he especially loved Florida and its varied ecosystems.

Upon his death, many people donated money and plants to establish a native garden in honor of Carl and his life. This garden was originally going to feature rare scrub plants that he and I propagated, but because of our site conditions, we are changing our philosophies.

In light of the soil conditions, invasive grasses, and location, we have now decided to plant a native garden to attract birds and other critters. We invite all of you to join us in shaping and planting this garden for Carl at 9 am on April 24, 2004. The garden is located at the east end of Kanapaha/Veteran's Memorial Park (located off of Tower Road) near the waterfall and stone sculptures. As you can tell by the location, a bird garden would be synergistic with the landscape, because Chapman's Pond and the Great Florida Birding Trail are just yards away.

Our plans are to remove weeds, add plants, and put down landscape timbers to demarcate the garden boundaries. Not only will we be enhancing the landscape, but we will also be providing a situation in which many experienced native plant folks will be around to help out those who are just beginning to plant natives in their yards.

Please bring water, gloves, shovels, and other implements of destruction and help us establish a memorial garden for a beautiful person and a beautiful location.

**March Plant ID Report** by Paul Cohen

People have cultivated Brassicaceae for food production for a long time a long time. The family is also prone to hybridization. As a consequence they are difficult to classify. *Brassica nigra* and *Raphanus raphanistrum* both grow along roads in North Florida but they look almost the same. The difference is in the long narrow fruits called siliques. In *Raphanus* the tip or the "beak" of the silique is flat in cross section whereas in *Brassica* it is not. Most authorities consider *Raphanus* the more common of the two in Florida.

Nomenclature is based on "Guide to the Vascular Plants of Florida, Second Edition" (2004), Richard P. Wunderlin. Thanks to all participants. Plant ID workshops take place at 6:00 PM before to the regular monthly meeting.

Native Plants Identified		
<i>Bidens alba</i>	Beggerticks	Asteraceae
<i>Celtis laevigata</i>	Sugarberry, Hackberry	Celtidaceae
<i>Commelina sp.</i>	Dayflower	Commelinaceae
<i>Dichanthelium sp.</i>	Witchgrass	Poaceae
<i>Geranium carolinianum</i>	Carolina Cranesbill	Geraniaceae
<i>Linaria canadensis</i>	Canada Toadflax	Veronicaceae
<i>Oxalis corniculata</i>	Common yellow woodsorrel	Oxalidaceae
<i>Prunus caroliniana</i>	Carolina laurelcherry	Rosaceae
Non-Native Plants Identified		
<i>Brassica nigra?</i>	Black mustard?	Brassicaceae
<i>Butia capitata</i>	Pindo palm	Arecaceae
<i>Medicago lupulina</i>	Black medic	Fabaceae
<i>Poa annua</i>	Annual bluegrass	Poaceae
<i>Stellaria media</i>	Common chickweed	Caryophyllaceae

## Freshwater Swamps

(Continued from page 1)

carrying dissolved organic matter (tannic acid makes the water appear blackish). They have a short hydroperiod and a measurable flow rate at least part of the year, which increases dissolved oxygen in the water. Vegetation includes the mast-producing oaks, which provide a major source of food for animals. These factors make river swamps the most diverse and productive swamps in the state.

Stillwater swamps have no perceptible water flow and most are fed by rainwater and shallow, acidic groundwater. A major exception to this is the hydric hammock, fed by deep groundwater seeping through limestone outcrops.

Most stillwater swamps are flooded or saturated over six months a year. Plant diversity is low, with a single species sometimes dominating in areas with the longest periods of standing water. Cypress swamps, for example, occur where a depression meets a high water table above an impermeable clay layer.

There are approximately 100 species of woody plants in Florida's swamps. Cypress are the most common and flood-tolerant wetland trees in Florida, and dominate in areas with fluctuating water levels. They are slow-growing, long-lived and deciduous.

The bald cypress (*Taxodium distichum*) is found in flowing water systems or cypress strands; pond cypress (*T. ascendens*) dominates stillwater, low-nutrient sites, forming cypress domes. Evergreen conifers include slash and pond pines, southern red cedar (*Juniperus silicicola*, which has not recovered from overharvesting for the pencil industry) and Atlantic white cedar (chiefly *Chamaecyparis thyoides*). Cabbage palm is common and generally fire resistant. Black gum (*Nyssa sylvatica*) is a stillwater species; the closely related water tupelo (*N. aquatica*) is found in river swamps. Oaks are common in northern Florida. Sweet bay, loblolly bay and swamp bay dominate bay swamps. Red maple and pop ash are also common in some swamps.

Melaleuca, an exotic invasive, now dominates some southern swampland.

Because of the hydroperiod, understory vegetation in swamps may be sparse. Sweetspire, buttonbush and swamp dogwood are common deciduous shrubs. A number of shrubs in the Ericaceae family survive in poor acidic swamp soils by depending upon associated mycorrhiza fungi to get nutrients. Twenty-three species of vines and a large number of epiphytes (bromeliads, orchids, ferns) grow in the trees. Epiphyte diversity greatly increases in the subtropical zone.



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Buttonbush  
(*Cephalanthus occidentalis*)

Animal diversity also depends upon the type of swamp habitat. Many animals found in swamps only spend part of their lives there, so neighboring habitat can be critical. The greatest diversity of wildlife in Florida is found around the edges of the river/floodplain swamps. The mast, fruit and other seed production, along with greater availability of nesting cavities and understory cover, attract birds and other small animals. So

does the larger population of insects in the more edible canopy of river swamps.

The association of these swamps with rivers greatly increases the number of fish species. Benthic invertebrates (water-bottom dwelling insects, mollusks, crustaceans) are typically the bottom of the fauna food-chain in swamps, and the high density of snails, clams and crayfish in river swamps supports many other animals.

Frogs dominate the fauna of north Florida cypress swamps, because of the extremes in wet-dry cycles. In stillwater swamps with extended hydroperiods, frogs are few and ground-dwelling reptiles like turtles and snakes are rare. The sparse or nonexistent understory provides little in the way of food, nest-sites or cover. Fish diversity may be less in a stillwater swamp, but density may be great in deeper water as dry season concentrates populations – which provides important feeding sites for the water birds that concentrate in stillwater swamps.

## Another Successful Plant Sale

Thanks to everyone for supporting the Spring Native Plant Sale. Hopefully you have planted all your plants in their new happy homes where they will thrive and provide beauty and wildlife habitat.

We appreciate help received from the many volunteers who worked as cashiers, book sellers, plant carriers and booth sitters...you make this sale possible with your donation of time and enthusiasm.

We will begin planning our Fall 2004 sale in May. If anyone in the chapter has comments, ideas, criticisms, or suggestions please let the Plant Sale Committee know. Contact Claudia 352-846-1070 or clarsen@ifas.ufl.edu.

## New Partnership Project

(Continued from page 2)

and versatility of natives, especially those that grow naturally in Putnam County.

In addition to Claudia's work on the site plan, several Paynes Prairie Chapter members have donated plant material and advice. Those plants have been installed on site and are doing well. Many other chapter members have also offered advice and plant material.

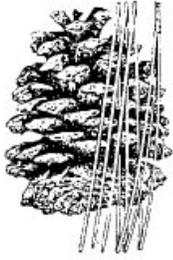
In recognition of past and anticipated future assistance, the Paynes Prairie Chapter board voted unanimously at its February 17<sup>th</sup> meeting to enter into a partnership with the Putnam County Environmental Council. In a few years, this project can be entered in FNPS's state native landscaping contest. Contributions will be acknowledged on signage at the Waterworks.

If you want to know more about this project or would like to participate, please contact Karen Ahlers at (352) 546-3560 or gourdsandboards@hotmail.com.

Karen Ahlers is currently president of PCEC.

Large and endangered mammals like the black bear and Florida panther with large territory requirements have been forced into swamps as more of their habitat elsewhere is destroyed. New conservation measures are now concerned with "closing the gaps" between protected tracts of land to allow pathways for these animals.

Reference: Ecosystems of Florida, Ronald Myers and John Jewel, editors, Univ. Press of Florida, 1990.



## Visit LEAFS

You are welcome to visit a longleaf pine restoration project located 2 miles south of Waldo on CR 1471 and Lake Alto Park. The trails in the flatwoods are open during all daylight hours.

Longleaf Ecology and Forestry Society

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