

Natural Florida Up Close
on the
Ochlockonee Bay Bicycle Trail (OBBT)
St. Marks NWR Section
(A Recreational Facility of Wakulla County)

—this content created by the Sarracenia Chapter of the Florida Native Plant Society, 2015—



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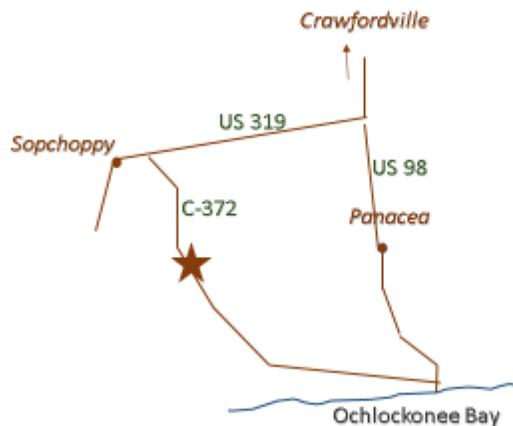
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Ochlockonee Bay Bicycle Trail WILDFLOWER and Native Plant HIGHLIGHTS of the St. Marks NWR Section, Wakulla County, Florida

The 4.8-mile section of the Ochlockonee Bay Bicycle Trail within St. Marks NWR runs through at least eight distinct plant communities or ecosystems, as shown on the reverse-side map. This narrative of features of the forest or woodland landscape you'll pass through should help you recognize them. (The narrative runs south-to-north; begin following it from the bottom of this page if riding north-to-south, and convert left/right and  Tip: use the marked gates along the way to know your location in this guide.)

Starting from the south Refuge boundary (Silver Acres Dr.), the forest is canopied by a mix of hardwoods containing live oak, wild olive, and deciduous trees like pignut hickory. This **mesic hammock** is one of the few stretches where you aren't likely to see evidence of recent fires applied to simulate the natural occurrence of fire.

Downslope as you head north, you might notice a sawgrass pond and a stretch of low, wet pine flatwoods to your left, and a stretch of Carolina willows at trail edge. Going uphill again just south of Gates 321 and 400, you begin to see longleaf pine mixed with oaks, and

For more on the color-flagged terms and subjects in this text, scroll down to the page [More About](#), and find them in alphabetical order

begin to see charred bark on the trees. You're climbing into the **sandhills** – the dominant ecosystem of the southern part of the trail. The view opens once you're north of those gates, as the frequent controlled fires suppress the oaks and preserve a low groundcover of diverse herbs beneath the well-spaced, fire-loving pines. At summer's end an **endemic** wildflower with a global range of only two Florida counties, **Godfrey's gayfeather**, sends up showy pink flower spikes sure to be seen along the trail in the sandhills.

Soon on your right (east) you will note Renfro Lake, the largest lake you will pass. To the left (west) you will begin to notice longleaf pines with white bands – the roost and nest trees of the endangered **red-cockaded woodpecker**. Also to the west you will begin to see smaller ponds that support many different types of plants and wildlife. The first pond offers a close view of a large floating mat of diverse vegetation that can include small trees. Tall yellow flowers beside the trail in fall here include native **sunflowers**. Just north of Gate 319 the sandhills continue past a lake to the right, and to the trail's sharpest curve. From here, as the trail turns north-west, pine flatwoods of two classes replace the sandhills, and you begin to see thick stands of saw palmetto. On the right (east) side here, an extensive wooded bog with low trees massed thickly touches the highway.

Now in **wet pine flatwoods** just south of Gates 401 and 402, you will notice a small, round pond to your left (west). The vegetation in its center is on a floating mat that in spring is edged with a golden show of **horned bladderwort** flowers. After crossing some less damp pineland referred to as **mesic pine flatwoods**, and passing yet another pond on the left abreast of Gate 334, you will cross a point of historical interest as the trail dips into a cattle underpass. This evidences use of these woodlands as rough pasturage for large herds up to the 1950s. Just north of the underpass you will see stands of slash pine and large pond cypresses in wet areas to the left. On your right (across the highway) a long stretch of small titi or "buckwheat" trees produce pure white flowers and sweet scent in spring. Poplar Creek, a forested branch, reaches the trail in this stretch. In the first (south) prong you'll see large specimens of slash pine, sweetbay magnolia, and blackgum. The north prong, at the curve,



Godfrey's gayfeather

offers a look at a tree seen at only one place along the trail – the **yellow poplar**. Its distinctive leaves and tulip-like spring flower are overhead. By now you are in territory that in fall presents fine shows of sunflower and other yellow natives.

From Poplar Creek you soon reach Gate 404 in slightly drier (mesic) pine flatwoods. Here you again see white-banded pines denoting homes of the red-cockaded woodpecker. Wet pine flatwoods appear again, to descend before the curve near Gate 405 into a strand of basin swamp thick with shrubs. North of Gate 405 wet pine flatwoods again run along the trail for a distance, and likewise north of Gate 406. As you round the final bend, you will see the bridge across Buckhorn Creek and soon enter the floodplain forest of that tidal creek feeding the Sopchoppy River. Its slopes, tree-canopied wetlands, and aquatic zone hold many species not present elsewhere on the trail. Among the various wetland wildflowers, the **false dragonhead** makes its lavender show in spring in the edge of the creek's tide flow. Among the trees of the creek bank are the bald cypress and the **ogeechee tupelo**, the nectar tree for Florida's famous tupelo honey.

The last section, to the northwest Refuge boundary at Buckhorn Creek Rd. (and first section if going north-to-south) rises to well-drained pine flatwoods, with a rich variety of undergrowth species. The fire-swept slope features a long stretch of well-established wild azaleas that provide a wide swath of color in spring. Slightly upslope you'll spot beside the trail the broad leaves of the endemic "**scareweed**," a plant with a global range of only five Florida counties. Hope you have enjoyed your ride and the natural Florida scenery.

Ecosystems Map



—Scientific Identification of Plants in the Guide and in the Photo Gallery Found Under the Website's **GALLERIES** Tab

(in alphabetical order of common names, by season)

—The Spring Suite—

blue flag iris *Iris virginica*
buckwheat tree (titi) *Cliftonia monophylla*
common blue violet *Viola sororia*
crow poison *Stenanthium densum*
false dragonhead *Physostegia leptophylla*
few-flowered milkweed *Asclepias lanceolata*
flattened pipewort *Eriocaulon compressum*
fetterbush *Lyonia lucida*
helmet skullcap *Scutellaria integrifolia*
horned bladderwort *Utricularia cornuta*
ogechee tupelo *Nyssa ogeche*

orange milkwort *Polygala lutea*
pinxter azalea *Rhododendron canescens*
phlox *Phlox sp.*
rose pogonia *Pogonia ophioglossoides*
small butterwort *Pinguicula pumila*
sneezeweed *Helenium sp.*
staggerbush *Lyonia mariana*
tuberous grasspink (orchid) *Calopogon tuberosus*
white lobelia *Lobelia paludosa*
white wild indigo *Baptisia alba*
wisteria (American) *Wisteria frutescens*
yellow butterwort *Pinguicula lutea*
yellow colicroot *Aletris lutea*

rosy camphorweed *Pluchea baccharis*

—The Summer Suite—

beardtongue *Penstemon multiflorus*
blanket flower *Gaillardia aestivalis*
butterfly pea *Centrosema virginiana*
candyroot *Polygala nana*
comfortroot *Hibiscus aculeatus*
corkwood *Stillingia aquatica*
Cyrilla (titi) *Cyrilla racemiflora*
duck potato *Sagittaria sp.*
honeycombhead *Balduina uniflora*
Joe Pye weed *Eupatorium fistulosum*
lizard's tail *Saururus cernuus*
partridge pea *Chamaecrista fasciculata*
rose-rush *Lygodesmia aphylla*

sand post oak *Quercus margaretta*
scareweed *Baptisia simplicifolia*
sensitive brier *Mimosa quadrivalvis*
shortleaf rosegentian *Sabatia brevifolia*
tall meadowbeauty *Rhexia alifanus*
ten-angled pipewort *Eriocaulon decangulare*
turkey oak *Quercus laevis*
white waterlily *Nymphaea odorata*
whitetop *Rhynchospora latifolia*
yellow-eyed grass *Xyris ambigua, Xyris sp.*
yellow poplar *Liriodendron tulipifera*

—The Fall Suite—

boneset *Eupatorium perfoliatum*
cardinal flower *Lobelia cardinalis*
Chapman's aster *Symphotrichum chapmanii*
coastalplain balm *Dicerandra linearifolia*
dense gayfeather *Liatris spicata*
flat-topped goldenrod *Euthamia sp.*
Godfrey's gayfeather *Liatris provincialis*
hairy chaffhead *Carphephorus paniculatus*
muskymint *Hyptis alata*
pinkscale gayfeather *Liatris elegans*
rayless goldenrod *Bigelovia nudata*
rice button aster *Symphotrichum dumosum*

sandhill wireweed *Polygonella robusta*
scarlet calamint *Calamintha coccinea*
shortleaf gayfeather *Liatris tenuifolia*
silkgrass *Pityopsis graminifolia*
silver aster *Symphotrichum concolor*
slender gayfeather *Liatris gracilis*
stiff sunflower *Helianthus radula*
sunflower (typical) *Helianthus angustifolius, H. heterophyllus*
tickseed (Coreopsis) *Coreopsis floridana, C. linifolia*
vanilla plant *Carphephorus odoratissimus*
wand goldenrod *Solidago stricta*
zigzag goldenaster *Pityopsis flexuosa*

—More About Terms and Subjects Above—
(in alphabetical order of terms used above)

The *Sarracenia* Chapter of the FI

Ochlocknee Bay Bicycle Trail

Endemics The natural confinement of a species to a limited area is the more interesting the more limited the area. Four native plant species known along the St. Marks NWR section of the OBBT are not only endemic to Florida (occurring naturally no place outside of the state) but have ranges very small in the state. Most remarkable in that sense is a pond dweller whose small yellow flower you may not be able to spot —**St. Marks yellow-eyed grass** (*Xyris panacea*). The plant's common and scientific names honor St. Marks NWR and specifically the Panacea Unit of the Refuge. The species has a known global range that may not exceed 10 square miles of southwestern Wakulla County. (Read more on this species under its heading below.)

The St. Marks NWR section of the OBBT is well endowed with Florida endemic plant species of very small ranges. You'll be able to see three besides St. Marks yellow-eyed grass along the Trail:

- Godfrey's gayfeather, with a global range of perhaps 150 square miles in the coastal parts of Wakulla and Franklin Counties;
- scareweed, with its range only in five Florida Panhandle Counties;
- zig-zag goldenaster, with its range only in six Florida Panhandle Counties.

Find further accounts of these plants at their underlined headings below.

False dragonhead The tall, striking patches of pink-lavender flowers seen in mid-spring in the littoral zone at the muddy margins of Buckhorn Creek are the slenderleaf false dragonhead (*Physostegia leptophylla*). The plant, like all species covered here, is a Florida native, but it is not endemic to the state; it ranges naturally northward to the Carolinas or beyond. The *Physostegias* are part of a large family of herbs with elongate flowers, and stems four-cornered in cross-section. The family contains some highly aromatic plants, and is thus known as the mint family.

These flowers gracing the mudbanks are one of two similar false dragonheads found in St. Marks NWR. But going far beyond the *Physostegia* genus, the flora of the Refuge includes more than 20 plant species in the mint family, in more than a dozen genera. Several grow along the bicycle trail.

(Notice alongside the false dragonheads on the mudbanks in spring the colorful “goldenclub,” *Orontium aquaticum*, with its thick, sturdy spike of rich gold.

Godfrey's gayfeather The eponym for this Florida endemic wildflower's common name is Dr. Robert K. Godfrey (1911–2000), professor of biology at Florida State University. Godfrey's 1961 description of the herb, from Alligator Point in Franklin County, distinguished it from similar gayfeathers in the Florida Panhandle and thus established the species. The specific epithet in the plant's scientific name, *Liatris provincialis*, refers to the scant province or range to which the species is confined —about 30 miles by 5 miles in coastal Franklin and Wakulla Counties.

Seven species of gayfeathers, or the genus *Liatris*, are counted in the flora of St. Marks NWR. With their distinctive spikes full of rose-lavender flowers sticking up two to seven feet in late summer and fall, these members of the huge family of asters are also called blazing stars. In some circumstances, spectacles of nectaring butterflies and other insects develop around the gayfeathers.

Within its tiny province, Godfrey's gayfeather is by no means a rarity; it flowers abundantly on high ground in many places —especially after fires. One place is the sandhill community of the Panacea Unit of St. Marks NWR through which the OBBT passes. Other gayfeathers along the trail are superficially similar, but Godfrey's is the first gayfeather to flower, in late summer. Its flower spikes are usually less than three feet high, but they are conspicuous and close to trail users.

Horned bladderwort The ten species of bladderworts known in St. Marks NWR are floating plants. They are also carnivorous plants, using animal protein as part of the nutrition supporting vegetative growth and a beautiful flowering above the water. The horned bladderwort (*Utricularia cornuta*), like the others, uses tiny bladders on its horizontal stem both as floats and as traps for minute animals. The traps work by a forceful inflow of water when triggered. (The horned bladderwort and some others are often found also on soggy ground with no standing water.)

It's the small pond just south of Refuge Gate 401 that holds an extraordinary show of the horned bladderwort. The flowers, densely massed, gild the edge of a floating mat centered in the pond. Perhaps the floats on the bladderworts' stems lend buoyancy to the larger mat. (Photo of horned bladderwort's flower, the curved spur or horn visible)

This and the other bladderworts are only some of the kinds of carnivorous plants growing in St. Marks NWR; there are also the butterworts (genus *Pinguicula*, with two species



occurring along the bicycle trail) and the pitcherplants (*Sarracenia*, with the parrot pitcherplant occurring near the trail).

Mesic hammock In northern Florida the term *hammock* is used for tracts of land distinguished by a shading canopy of broadleaf trees, a relative openness at eye level, and a paucity of groundcover for easy passage on foot. The make-up of the tree canopy and the understory is a diversity of species. Oaks are a usual component, of course. *Hydric hammock*, *xeric hammock*, and, intermediate among them in moisture, *mesic hammock*, are recognized by naturalists and ecologists. That last category holds the small area of broadleaf tree cover close to the south end of the St. Marks NWR section of the bicycle trail.

Mesic hammock may also be called upland mixed broadleaf forest. One of Florida's premier examples, a tract going on for thousands of acres, is contained in Wakulla Springs State Park about 20 miles from the Ochlockonee Bay Bicycle Trail.

Visits of fire to the land, the norm along most of this bicycle trail section, are not consistent with the existence of upland hammocks, whose trees are mostly species very vulnerable to fire in some part of their life. Indeed, hammocks develop under long-term protection from fire by one circumstance or another. In addition to oaks like the laurel oak (*Quercus laurifolia*), one tree of the mesic hammock is the pignut hickory (*Carya glabra*).

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Mesic pine flatwoods Like all open woodlands along the trail, pine flatwoods, in whatever sub-category, have an appearance governed both by the land's flatness and by the fires that sweep through. The charred bark of the lower trunks of the pines tell of fire, and so does the high vertical clear space between the pines' crowns and the shrub cover beneath. Walking through any woodlands along the trail will quickly mark your clothing with soot from charred twigs—even a couple of years after the last fire. Fires always kept all growth low, except the pines with their thick, fire-resistant bark. Of course, the fires are applied nowadays by management crews, but the burns are planned and designed to do what nature, native Americans, and generations of settlers and rough-pasture cowherders did with fire in these woods.

Pine flatwoods of two kinds—mesic and wet—are the predominate terrain along the northwestern 2/3 of the St. Marks NWR section of the bicycle trail.

Florida settlers in their tough rural enterprises got plenty of experience with this terrain and its plant communities. (*Pine flats* and *pine barrens* are other names for what most call pine flatwoods.) Consistent both with the natives before them and with nature's fireworks in the form of fire-setting lightning strikes, settlers used fire in the pine flatwoods. But ever-increasing settlement also brought roads and clearings that stymied fires. That and a period of forest-fire suppression by policy led by the middle of the 20th Century to a couple of characteristics of much of today's pine flatwoods different from the historic character.

One change is today's much greater density and acreage of shrub growth—at the expense of many low, herbaceous, sun-loving wildflower species. Today's *prescribed fires* may be effectively arresting that trend, and perhaps turning it back gradually toward historic conditions to some extent. Another change from the historic is seen in the kinds of pines present today. Formerly the longleaf pine reigned everywhere in the pine flatwoods while the slash pine, less fire-tolerant, was restricted by those fires to the haven of wetland edges. Now many acres of pine flatwoods here and everywhere show a mix or even prevalence of slash pines.

Mesic pine flatwoods have a medium degree of ground moisture—as the words *mesic* and *medium* relate closely—with respect to the lower and sometimes inundated *wet pine flatwoods* and to the fast-drying, fast-percolating soil of the sandhills seen along the trail. Mesic pine flatwoods, like the wet pine flatwoods interspersed with them along the trail, exist on sands that test acidic.

Many plant species are especially associated with mesic pine flatwoods. One is the Florida endemic and uncommon scareweed (see below), a legume seen only along a short stretch of the trail and, indeed, seen only in a tiny range on earth. The vanilla plant that sometimes flowers in striking stands after fire is another (photo in the OBBT spring album found under the website's GALLERIES tab).

In all firelands along the trail—pine flatwoods and sandhills—flowering is cued by the fires. The first year following a burn is the flowery year in a given place. In nearly all years, some part of the trail's flank is burned in St. Marks NWR's management program.

Ogeechee tupelo At Buckhorn Creek, notice some medium-size trees with light-colored trunks and leaves to six inches long and three inches across. The source of North Florida's prized tupelo honey, the ogeechee tupelo (*Nyssa ogeche*) is of a strictly southeastern range (taking the name of the Ogeechee River of southeastern Georgia). The tree is very abundant on major drainages of the Florida Panhandle and, indeed, the national

champion specimen is here in Wakulla County in the Apalachicola National Forest. However, while widespread through the National Forest, this tupelo touches St. Marks NWR only in the western part of the Refuge. Here it is confined to the narrow corridors of Buckhorn and Otter Creeks and the Sopchoppy River—all three flowing out of the great pine flatwoods of the National Forest.

The male nectar-bearing flowers of the ogeechee tupelo occur in ball-shaped clusters in mid-spring. The tree's fruit is soft and over an inch long. In summer the crop of fruit drops into the water, each with an audible splash, and floats. This fruit, sometimes called ogeechee lime and sometimes used in jellymaking, may be seen in abundance floating on the current in streams of the Panhandle. (Photo of leaf and male flower cluster of ogeechee tupelo courtesy David Roddenberry)



Red-cockaded woodpecker It may usually require some patience to see the bird, but scientists saw the impending extinction of this species of the southeastern pine woodlands by 1970—as those woodlands disappeared or changed with suppression of fire. The red-cockaded woodpecker (*Picoides borealis*) received the protection of the Endangered Species Act at the passage of the Act in 1973.

The “red cockade” is only on the males, and visible only sometimes, on this small (seven inches long) white and black woodpecker. A different name would seem more apt.

An Apalachicola Nat. Forest / St. Marks NWR population of the birds is recognized among remaining populations designated by scientists and land managers in an overall range from southeastern Virginia to eastern Texas and Oklahoma (including the Florida Peninsula). The white bands painted on pines holding red-cockaded woodpecker roost cavities can be considered emblems not of what these public landholdings are trying to do for the bird, but of what they're trying to do for their own ecological well-being. This is because the habits of the bird support many other animal species of the pine woodlands; this woodpecker is called a “keystone species” for that reason. Cavities it drills in living pines are, like the burrows made by gopher tortoises in the ground, an important service to the other species. (This woodpecker is the only one in North America to excavate roost and nest cavities in living pines.)

Red-cockaded woodpeckers live and work together in groups of usually 2-6 individuals, each bird roosting in its own cavity in a mature pine. The longleaf pine (*Pinus palustris*) of the eastern U.S., seen in abundance along the bicycle trail, is another species whose numbers have been diminished greatly in the last couple of centuries. It is the pine of essential association with this woodpecker. Not only the diminished acreage of longleaf pine coverage, but also the altered condition of so much of the remaining acreage, brought the bird species to its endangered status by the middle of the 20th Century. (Photo courtesy of Dr. Chuck Hess)



Usually all the white-banded pines in view from a single place are the “cluster” used presently or recently by one group of red-cockaded woodpeckers supporting one breeding pair. Any cluster seen from the bicycle trail is one of perhaps 6,000 clusters in existence in the entire range of the bird—on the basis of the census made at the start of the present century, when the total number of birds alive anywhere was placed near 14,000.

All elements of the decline of the red-cockaded woodpecker, and strategies for aiding it, are highly interesting. Another short read on the species can be found at—

<http://myfwc.com/wildlifehabitats/profiles/birds/woodpeckers/red-cockaded-woodpecker>

Sandhills The sandhills of St. Marks NWR lie entirely in the western third of the Refuge, and mostly in the Panacea Unit. Highway C-372 and the bicycle trail skirt the west edge of the sandhills. The crowns of longleaf pines stand high above the surface, but the much lower crowns of several

kinds of oaks are very prominent in the sandhill scene in most places. The oak with a very large leaf having many pointed lobes is the turkey oak. Mixed with turkey oaks are also the bluejack, sand post, and sand live oaks. The differing oak coverage in different places in the sandhills is a result of differing fire histories, as the oaks when young are vulnerable to fire; their bark does not have the fire resistance of the longleaf pine.

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The southern third of the St. Marks NWR section of the bicycle trail lies in sandhills predominately. Notice on your ride, and on the map above, the interspersions of lakes or large ponds closed in by the sandhills. Some of those water bodies of the “Panacea Sandhills” are the home of the very rare Florida endemic St. Marks yellow-eyed grass (which see below). The deep sands of these sandhills are also strongholds of two other narrowly

endemic asters: Godfrey's gayfeather (see above) and zigzag goldenaster. The 30-mile-long global range of the former plant nears its northeast end here.

The endangered red-cockaded woodpecker (see above) inhabits a few small areas in these sandhills of SMNWR (and in the pine flatwoods); you will see some marked trees signifying this. The sandhills are frequented also by the Sherman's fox squirrel, an animal larger than the common grey squirrel and having some variability in coat color among individuals, and by the gopher tortoise. The "gopher" is able to make burrows 20 feet long in the soft, beige ground of the sandhills; you may spot the mouths of burrows from the trail.

Scareweed The legume *Baptisia simplicifolia*, or "scareweed," is another plant that occurs naturally no place outside of Florida. Thus it's a Florida endemic. Moreover, it occurs only in Wakulla, Franklin, and three other counties. Along the St. Marks NWR section of the bicycle trail, only those pine flatwoods bordering the trail northwest of Buckhorn Creek crossing have conditions suiting this plant, but there you will ride close beside specimens of it. (*Baptisias* of other species, with ranges going beyond Florida, also occur along this trail.)

Scareweed flowers yellow in summer. The flowers and the large leaves make the plant handsome then. Like other *Baptisias* (the group of them often called "wild indigos"), scareweed's foliage turns very dark when it dies in the fall, and remains on the stem. A slight rattling of the dried foliage by light breezes may be the origin of the plant's common name. Another characteristic of the dried remains with leaves intact is a tendency to break off at ground level so that a breeze rolls the whole thing over the land —making "Florida's tumbleweed."

St. Marks yellow-eyed grass This pond-dwelling wildflower (not a grass at all) was designated a species only in 2008 after studies by professor emeritus Dr. Loran C. Anderson (Florida State University) and collaborators. The species, *Xyris panacea*, thus became the 18th species of *Xyris* in the flora of St. Marks NWR. This one, however, is known no place in the world but the ponds of a tiny territory that may not exceed 10 square miles within the "Panacea Sandhills" of southwestern Wakulla County. That range may lie entirely in the Refuge; the given common name honors the Refuge, and the specific epithet in the scientific name honors the Panacea Unit of the Refuge. (The specific epithet conferred by the "fathers" of the species led them to disclaim any evidence of medicinal properties of the plant.)

This yellow-eyed grass has, like the other *Xyris* species, a small yellow flower of limited daily display, and is otherwise similar to the others —to the layman. The flowering of this species may be visible annually from the bicycle trail in the largest pond lying west of the trail, but distinguishing it from the other *Xyris*es there would require experience at that distance. (Photo of the flow-erspike of *Xyris panacea* courtesy of Kitty Loftin)



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Sunflowers Three species of sunflowers will be seen easily along the trail in fall, mainly in the northwestern two-thirds of the trail. They are in the genus *Helianthus*, this Latin being a straight translation of *sunflower*. The entire genus is a part of the huge aster family. Two sunflowers are very abundant beside the trail on very damp ground as the land slopes down to branches or other inundated wetlands; these are principal components of the wildflower show in fall. The flowers of narrowleaved sunflower (*Helianthus angustifolius*) and variable-leaved sunflower (*H. heterophyllus*) are very showy with their large gold flower petals arranged as rays around the dark center (these are the ray flowers; the dark center is also a cluster of flowers —disk flowers). These sunflowers need not be mistaken for the blackeyed Susan, but probably often are.

Narrowleaved sunflower's lowest leaves are usually dead and shriveled at flowering time, the leaves above live and plentiful. It's the opposite with variable-leaved sunflower, which at flowering time has few live leaves except near the bottom. The leaves of both species feel very sandpapery with stiff whiskers.

The third sunflower along the trail, stiff sunflower (*H. radula*), is also called rayless sunflower because of a strong distinction it has. This flower lacks petals; it appears to be only the very dark center of a sunflower, with the petals missing. The flower sits atop a 2- 3-foot stalk that is leafless. At the bottom, a rosette of broad leaves flattens itself to the ground; this constant characteristic identifies the stiff sunflower at other times than the flowering season. Dense stands can occur. Look for the stiff sunflower in the vicinity of Gate 404, for one place.

Wet pine flatwoods Along the northwestern 2/3 of the SMNWR section of the bicycle trail, pine flatwoods continue down gradual slopes (which are apparent) onto ground that is soggy at times during the year —even shallowly inundated sometimes— and moist almost all the time. These wet pine flatwoods look much like the

mesic kind, and most of what is given above on mesic pine flatwoods applies to this wetter terrain; it is no less fire-dependent, the longleaf pine gives the open overstory, and wiregrass is a major part of the herbaceous layer.

With the different moisture regime of the wet pine flatwoods, a somewhat different complement of wildflowers further distinguishes this plant community. Among those belonging particularly to the wet pine flatwoods are some lovely terrestrial (ground-rooted) orchids of spring and summer, like the rose pogonia and the tuberous grasspink (photos in the OBBT spring album found under the website's GALLERIES tab). There are also the exquisite pine lily, the yellow butterwort that you'll see beside the trail in early spring, and, in places not far off the trail in the north-westernmost mile, the parrot pitcherplant. And a signature of the wet pine flatwoods very conspicuous from the trail in some places in spring following fire is the Osceola's plume or "crow poison." Patches or even isolated individuals of these broad, white flowerspikes standing 30 inches high (GALLERIES, OBBT spring) are very conspicuous. (*Photo of the pine lily courtesy of Bob Thompson*)



The boundary between wet pine flatwoods and adjacent, non-fireland wooded bogs is something of a battleground. The vulnerability of the wet pine flatwoods to any condition denying them fire over a period is something you can observe at places along the trail where very thick incursions of a wetland shrub from adjacent wooded bogs have occurred in the absence of fire. This shrub, the buckwheat tree or black titi, is a native with spring flowers of the purest white and a pleasing scent. Prescribed fires today roast those titi incursions—or, at least, the above-ground component—back many feet or yards. This may not tell which way the battle is actually going, and the scene strongly suggests that a good deal of the former wet pine flatwoods now lie deep in wooded bogs.

Yellow poplar Yellow poplars (*Liriodendron tulipifera*) can be found in moist, fertile soil across eastern North America. The cup-shaped, tulip-like flowers blossom in spring at the tips of the branches and the large four-lobed, bright green leaves turn golden yellow in fall. (Other common names are tulip poplar and tuliptree.) To our north, many individuals in the southern Appalachians grow to such stature that the yellow poplar ranks as the tallest eastern hardwood, and specimens reach trunk diameters over eight feet.

Native Americans made dugout canoes from the yellow poplar, but afterward this tall and straight tree was highly important as building lumber. That is likely why Wakulla County presently has very few specimens exceeding three feet in diameter. On top of all the uses for these beautiful trees (including furniture, toys, musical instruments, and pulpwood) they also provide larval food for Eastern swallowtail butterflies.

The yellow poplar is abundant along forested branches feeding the Ochlockonee River well upstream from St. Marks NWR. The population along some drainages feeding Buckhorn Creek near its mouth on Sopchoppy River, on the other hand, are an outlying occurrence. This provides the one very small territory having yellow poplar in the entirety of the Refuge. The naming of one of these drainages Poplar Creek is a remark on the outlier circumstance. It's a headwater branch of Poplar Creek touching the bicycle trail that presents the trail user a look at one or two yellow poplar specimens.