



Pondspice (*Litsea aestivalis*) Population Status and Response to Laurel Wilt Disease in Northeast Florida



**Final Report for the Division of Forestry,
Florida Department of Agriculture and
Consumer Services Contract #025665**

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Cover Photographs (Jim Surdick)

Top: Pondspice (*Litsea aestivalis*) fruits, leaves, and “zig-zag” stems in Osceola National Forest.

Middle: Pondspice (*Litsea aestivalis*) depression marsh habitat in Ocala National Forest.

Bottom: Cross section of pondspice (*Litsea aestivalis*) stem with ambrosia beetles and associated fungal pathways, Duval County, Florida.

Recommended Citation

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ABSTRACT

A status survey was conducted for pondspice (*Litsea aestivalis*) in northeast Florida to help gauge the population response to Laurel Wilt Disease (LWD). The LWD epidemic in Florida is currently located in the northeast portion of the state and is actively spreading to adjacent counties. Pondspice is listed as endangered by the state of Florida, Florida Natural Areas Inventory (FNAI) ranks it as G3/S2, and is rare throughout its range within the southeastern United States. Pondspice is a member of the Lauraceae and has been found to be affected by LWD. However, little is known as to how wild populations will respond to the disease. In an effort to document the effect of LWD on pondspice FNAI updated the status of all accessible populations and searched for new pondspice locations within northeast Florida. There were 11 previously known locations, FNAI element occurrences, within northeastern Florida located on public and private land. Permission to access five of these locations was not granted. The status of the remaining six populations was updated along with an additional nine new documented locations. No pondspice were found within more than 180 wetlands searched on 25 public and private properties throughout northeastern Florida. The total pondspice population at the 15 visited occurrences is estimated to be between 1075 to 1225 individuals. The number of individuals varied greatly between sites. At Guana River Wildlife Management Area three wetlands contained a total of only four plants while the largest observed population was estimated to consist of greater than 400 individuals within a depression marsh, wet flatwoods, basin marsh mosaic at St. Marks Pond (St. Johns River Water Management District Property). Evidence of possible LWD was observed within 11 of the 15 occurrences where approximately 5 to 90 percent of the plants exhibited symptoms. At this time it is not clear as to whether pondspice populations will succumb to LWD. In some areas that have been infested with LWD for several years (e.g., Duval County) both large and resprouting pondspice bushes were observed despite almost a complete loss of mature bay trees in the surrounding landscape. Pondspice's ability to sprout after fire and fruit within a few years may make it less susceptible to the deleterious effects of the disease in comparison with the decimated populations of bay trees found within the infected counties. However, further research is needed to verify this observation.

INTRODUCTION

Pondspice is an obligate wetland shrub in the Lauraceae family. Pondspice grows to 2-5m high and has alternate 1 to 3cm long deciduous leaves held on "zig-zag" reddish brown branches. The yellow unisexual flowers occur in late winter before the leaves appear. Female individuals produce a 4 to 6mm bright red fruit in late summer. The typical habitats in Florida are edges of depression marshes and dome swamps embedded in natural communities that receive frequent fire such as sandhill and flatwoods.

In Florida pondspice (*Litsea aestivalis*) is currently considered a G3/S2 species (See Appendix A for Global and State Rank explanations). It occurs from Louisiana to Maryland and despite being widespread is rarely encountered throughout its range with approximately 50-100 known locations (NatureServe 2009). It is listed as endangered in Florida and Maryland and threatened in Georgia. Before the current survey effort there were only 20 known locations (FNAI element occurrences) in Florida.

Laurel Wilt Disease (LWD) is believed to have originated near Port Wentworth, GA in 2002 and has rapidly spread into Florida decimating populations of red bay (*Persea borbonia*) and swamp bay (*Persea palustris*) (USDA Forest Service 2009). Laurel wilt is carried by an introduced Ambrosia beetle (*Xyleborus glabratus*) from Asia that carries *Raffaelea lauricola* fungus which is the agent responsible for the observed bay die-offs in the affected areas (Harrington et al. 2008). However, the disease is not limited to bay trees and has been found to be lethal to several other members of the Lauraceae including pondspice (Fraedrich et al. 2008).

The objectives of this project were to relocate the existing known populations of pondspice in northeastern Florida, thoroughly search for new locations of this species within or near areas currently experiencing LWD, assess population sizes of all new and relocated occurrences, determine the health of individual specimens encountered (experiencing mortality or wilt), and report on the status of these occurrences and findings.

METHODS

Pondspice records in the FNAI database were queried for northeastern Florida. All private landowners and public land managers in this area with extant pondspice records were contacted to request access to the locations. Land managers of properties in the vicinity of known locations were also contacted to ask permission to survey their properties in an effort to locate new populations of pondspice. Areas of appropriate habitat within or near the known extent of LWD, either on public land or on private land along publicly accessible rights-of-ways, were opportunistically surveyed. All sites were visited between 11/17/2008 and 11/12/2009. Trimble Recon GPS/dataloggers (3m accuracy) were used to record GPS points and gather data where pondspice populations were encountered as well as in wetlands of appropriate habitat where pondspice was not encountered. When pondspice was present the data recorded included location (latitude, longitude), site name, survey date, surveyor, population size, phenology, evidence of LWD in pondspice, evidence of LWD in *Persea* sp., natural community setting, vegetative associates, and evidence of disturbance. A GPS point was recorded in wetlands of appropriate habitat that were searched thoroughly but where pondspice was not observed along with notes on LWD observations within any *Persea* sp. present. Plants exhibiting signs of LWD had one or more of the following symptoms; stems with small (<2mm) ambrosia beetle entrance holes, one or more stems with nearly all brown leaves during the growing season, and sapwood with a purple to black stain. From each population that was suspected to have LWD an infected stem of pondspice was collected and sent to Dr. Jason Smith's Laboratory (School of Forest Resources and Conservation, University of Florida) for confirmation.

RESULTS

More than 180 wetlands located on more than 25 public and private properties were searched for pondspice (*Litsea aestivalis*) populations and evidence of LWD including six previously known pondspice element occurrences in northeastern Florida (Figure 1). Permission was not granted to assess five of the eleven previously documented locations (i.e., FNAI element occurrences). An additional population (EO #6) was considered extirpated based on a 2005 FNAI field survey and was not revisited during this survey. Nine new populations were documented during the current survey for a total of 15 pondspice populations assessed in northeastern Florida in 2008-2009 (Figure 2). In addition, pondspice was observed in five new wetlands near existing element occurrences that had not been previously documented. Nine of

the 15 assessed populations exhibited what appeared to be symptoms of LWD (Table 1). A tenth population, Guana River Wildlife Management Area, was located in an area where the bay trees exhibited symptoms of LWD however the pondspice population (four bushes) appeared healthy at the time of the survey. The three wetlands with pondspice populations found at the Mill Creek Preserve in Alachua County exhibited signs of what appeared to be LWD however, the limited number of bay trees observed appeared healthy. Of the nine pondspice populations that exhibited signs of LWD the mean percentage of bushes that appeared to be infected was approximately 28 percent with a range of 5 to 90 percent exhibiting symptoms. The St. Marks Pond pondspice population (EO #26) was the only population where LWD was confirmed by laboratory analysis (personal communication Dr. Jason Smith, School of Forest Resources and Conservation, University of Florida). The results of all other collected samples were not available at the time of this report.

The natural communities where pondspice populations were documented during the current survey include 13 depression marshes, 12 dome swamps, and two basin marshes. Common canopy species included slash pine (*Pinus elliottii*), pond cypress (*Taxodium ascendens*), swamp tupelo (*Nyssa biflora*), and pond pine (*Pinus serotina*). Shrubs often associated with pondspice included fetterbush (*Lyonia lucida*), common buttonbush (*Cephalanthus occidentalis*), gallberry (*Ilex glabra*), saw palmetto (*Serenoa repens*), highbush blueberry (*Vaccinium corymbosum*), swamp red bay (*Persea palustris*), and swamp doghobble (*Leucothoe racemosa*). Pondspice was often found within a wetland at slightly higher elevation than common buttonbush and just within a saw palmetto and gallberry fringe. Typical groundcover species include maidencane (*Panicum hemitomon*), sand cordgrass (*Spartina bakeri*), Virginia chain fern (*Woodwardia virginica*), clustered sedge (*Carex glaucescens*), and tenangle pipewort (*Eriocaulon decangulare*). The majority of the wetlands where pondspice was documented were generally small (<0.5ha) and embedded in several different types of natural communities that would have traditionally received fire such as sandhill, scrubby flatwoods, mesic flatwoods, wet flatwoods, and scrub.

Flower buds were present on pondspice starting in early October and flowers were found blooming in December and persisted into March within the observed populations. Fruits were primarily unripe and all green in May and started turning red in July. Fruits were typically all red by late July within the northernmost populations and slightly thereafter in the southern populations. By Late October fruits were absent or very sparse. It was not clear if LWD affected fruit production. Approximately 20 seeds were collected from both the Ocala National Forest (EO #22) and Osceola National Forest (EO#13) populations and sent to Bok Tower Gardens a member of the Center for Plant Conservation for long term storage (deep freeze).

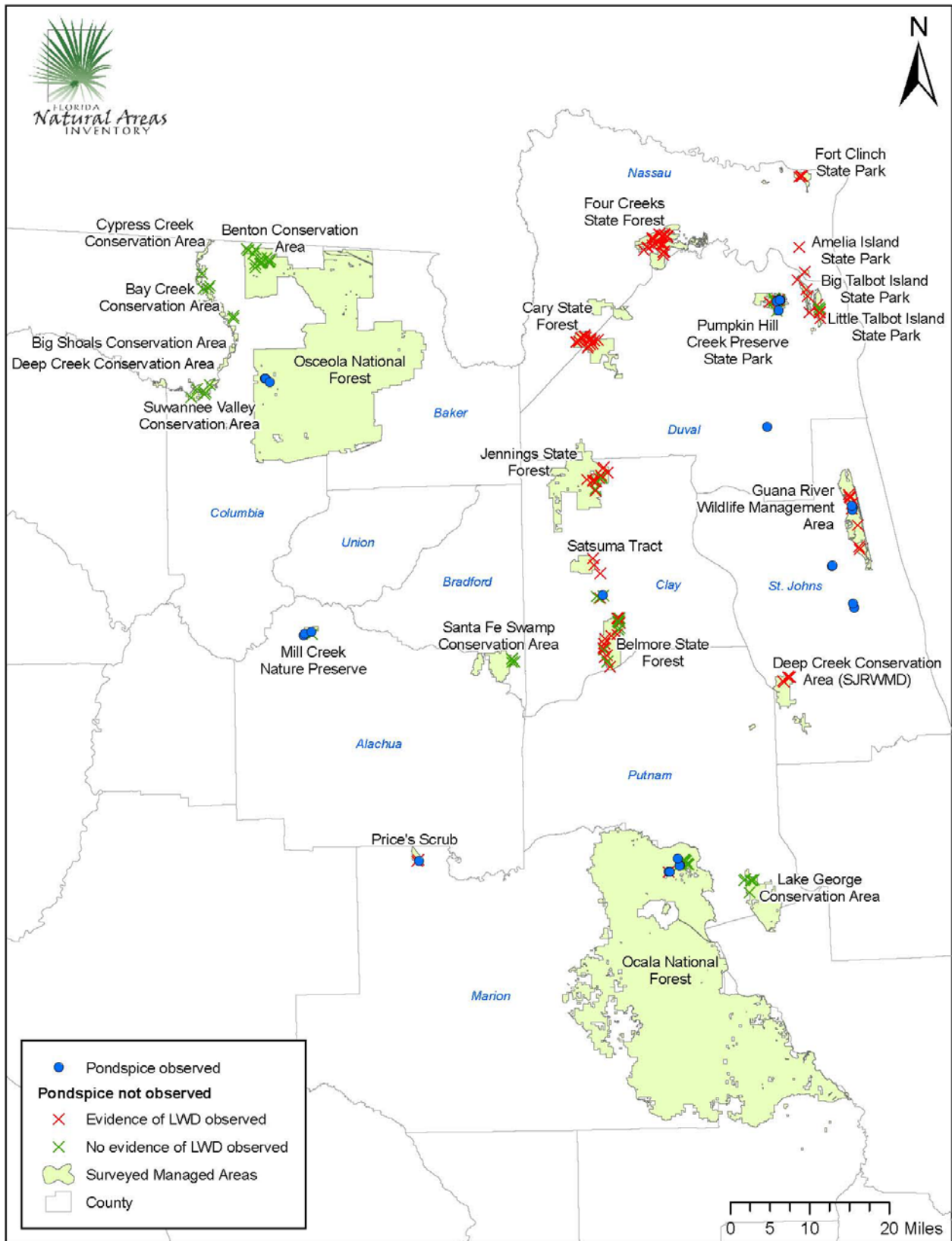


Figure 1. Survey GPS points where pondspice (*Litsea aestivalis*) was observed and not observed in northeast Florida.

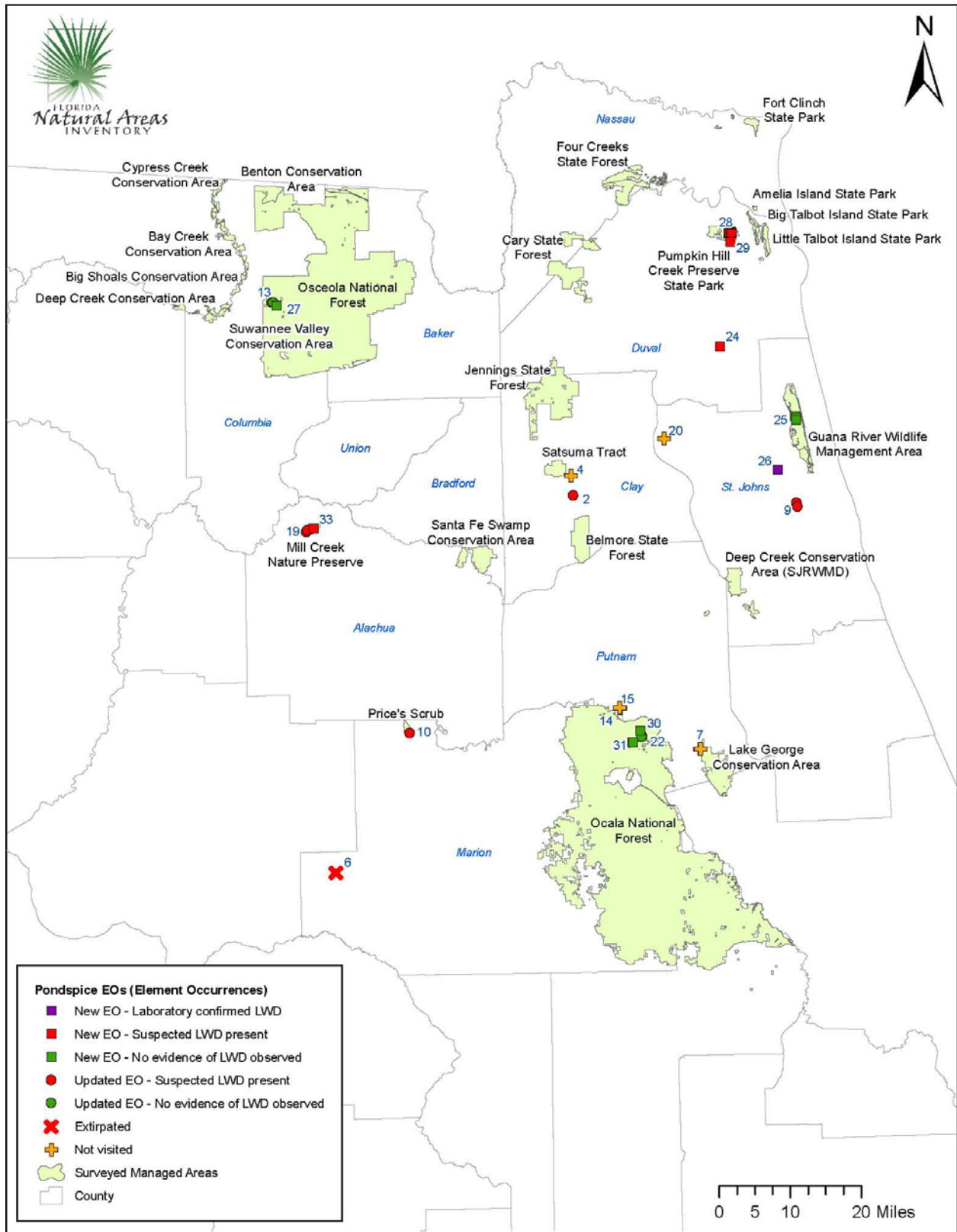


Figure 2. Pondspice (*Litsea aestivalis*) EOs (Element Occurrences; labeled with EO number) northeast Florida. EOs coded for whether Laurel Wilt Disease (LWD) was confirmed, suspected, or not observed at each EO and whether EO is new, updated, not visited, or extirpated.

Table 1. Documented wetlands (FNAI Element Occurrences) with pondspice (*Litsea aestivalis*) in northeast Florida, the initial estimated population size, the 2008-2009 estimated population size, and the ratio of bushes exhibiting symptoms of Laurel Wilt Disease.

Site	County	Element	Initial Observation	Current	Percent With
		Occurrence (EO)	Population Size	Population Size	LWD Symptoms
private	Clay	update EO #2	100 (1983)	150	5
private	Clay	EO #4	NE (1982)	NV	NV
private	Marion	EO #6	extirpated (2005)	NV	NV
private	Putnam	EO #7	5 (2005)	NV	NV
private	St. Johns	update EO #9	50+ (1991)	50-100	20
private	St. Johns	new wetland EO #9	NV	50-100	80
Price's Scrub	Marion	update EO #10	15 (1993)	68	20
Osceola National Forest	Columbia	update EO #13	6 (1996)	9	0
Osceola National Forest	Columbia	new wetland EO #13	NV	21	0
Osceola National Forest	Columbia	new wetland EO #13	NV	7	0
Rodman Bomb Target	Putnam	EO #14	10-50 (1996)	NV	NV
Rodman Bomb Target	Putnam	EO #15	1 (1996)	NV	NV
Mill Creek Nature Preserve	Alachua	update EO #19	70 (2003)	90	10
Mill Creek Nature Preserve	Alachua	new wetland EO #19	NV	1	0
private	St. Johns	EO #20	200 (2004)	NV	NV
Ocala National Forest	Putnam	update EO #22	7 (1996)	24	0
Ocala National Forest	Putnam	new wetland EO #22	NV	1	0
private	Duval	new EO #24	20-50 (2003)	50-100	40
Guana River Wildlife Management Area	St. Johns	new EO #25	1-10 (2003)	2	0
Guana River Wildlife Management Area	St. Johns	new EO #25	1-10 (2003)	1	0
Guana River Wildlife Management Area	St. Johns	new EO #25	NV	1	0
St. Marks Pond, St. Augustine Well Field	St. Johns	new EO #26	NV	400+	90
St. Marks Pond, St. Augustine Well Field	St. Johns	new EO #26	NV	30	30
Osceola National Forest	Columbia	new EO #27	NV	7	0
Pumpkin Hill Creek Preserve State Park	Duval	new EO #28	NV	1	0
Pumpkin Hill Creek Preserve State Park	Duval	new EO #28	NV	35	14
Pumpkin Hill Creek Preserve State Park	Duval	new EO #28	NV	40	50
Pumpkin Hill Creek Preserve State Park	Duval	new EO #28	NV	6	0
Pumpkin Hill Creek Preserve State Park	Duval	new EO #28	NV	6	0
Pumpkin Hill Creek Preserve State Park	Duval	new EO #29	NV	4	25
Ocala National Forest	Putnam	new EO #30	NV	2	0
Ocala National Forest	Putnam	new EO #31	NV	12	0
Ocala National Forest	Putnam	new EO #31	NV	2	0
Mill Creek Nature Preserve	Alachua	new EO #33	NV	30	10
NE= not estimated, NV= not visited					

DISCUSSION

At this time, it appears that no populations of pondspice have been extirpated as a result of LWD infection. The response appeared to be variable between populations. The affects of LWD were not observed in bay trees or pondspice within the northwestern and southeastern portions of the survey area (Figure 2). The greatest infection rates appeared to be located within the northeastern most populations surveyed (e.g., EOs 9, 24, 26, 28, and 29) closest to the LWD epicenter (USDA Forest Service 2009). It was also in these areas that the bay trees appeared to have the highest infection rates. The largest observed pondspice population (EO #26), and the only laboratory confirmed infected population, also had the highest ratio of individual exhibiting LWD symptoms, up to 90 percent. The occurrence of bay trees within the EO was particularly low. This evidence may suggest that in Florida, pondspice is not the primary LWD host. However, in areas with depleted bay tree populations or where the pondspice populations are

large enough to support *Xyleborus glabratus* pondspice may become susceptible to LWD infections. At the same time, the known host trees of *Xyleborus glabratus* in its native southeast Asia range are a species related to pondspice, yellow litsea (*Litsea elongata*) along with Asian spicebush (*Lindera latifolia*) (Wood and Bright 1992).

Most of the pondspice populations had several individuals with brown leaves persisting near the end of living branches on multiple stems. It is suspected these were the result of another exotic ambrosia beetle the black twig borer (*Xylosandrus compactus*) (Dixon and Woodruff 1982) which is not known to be a carrier of LWD. However, the effects of the black twig borer on pondspice shared some of the same symptoms exhibited by individuals affected by LWD making it difficult to diagnose individual plants in the field. Dead stems within otherwise healthy bushes in areas not experiencing LWD was also common. Likewise, while Guy Anglin initially documented EO #13 in 1996 he noted several dead bushes in the Osceola National Forest population well before the introduction of LWD. Pondspice appears to be susceptible to several different agents of mortality and disease making it difficult to distinguish background rates of mortality from the new and emerging affects of LWD.

A few of the pondspice populations were burned by either wild or prescribed fire within two years prior to the current survey. Vigorous sprouting was observed by most individuals that were top killed by the fires. Bushes as short as 1.5m high were observed bearing fruit. A population located on a golf course is periodically mowed and sprouting is common and the mowed bushes have been observed bearing fruit (personal communication, Cecil Slaughter, SJWMD). Pondspice's ability to sprout and bear fruit shortly thereafter may aid in coping with LWD. However at this time it is not known if this will be a sustainable strategy or if the fungus associated with LWD will eventually infect the roots of sprouting bays and pondspice killing the entire plant.

Habitat Management

The use of prescribed fire may be an important management technique benefiting the remaining pondspice populations. In all cases the most robust fruiting individuals observed were found in open settings with sparse canopy cover and low density of competing shrubs of other species. Allowing prescribed fire from the adjacent uplands to naturally enter wetlands supporting pondspice may be beneficial to this species. The location within the surveyed wetlands of many of the pondspice shrubs suggested they were in an area that received fire when water levels were low and may not receive fire when water levels are high. The natural periodicity of fire for pondspice may be slightly longer than what was typical for the surrounding landscape (e.g., mesic flatwoods, sandhill). Restoring natural hydrological regimes to landscapes altered by ditches/canals or other factors, may also help to improve wetland habitat condition for this species.

RECOMMENDATIONS

Continue to monitor the remaining known pondspice populations and their response to LWD. At this time it is difficult to determine if LWD will have long term deleterious effects on pondspice populations in Florida, and it is possible that LWD has not completely manifested within pondspice populations within the infected areas. Thoroughly searching all depression marshes, dome swamps, and basin swamps in the vicinity of known populations will likely result in the discovery of new pondspice locations. In combination with monitoring efforts it may prove beneficial to collect seeds of pondspice for long term storage to help conserve their genetic information in case LWD does eventually cause the loss of pondspice populations in Florida.

During monitoring efforts the identification of individual pondspice that appear to be immune to LWD would be particularly helpful if reintroduction attempts were to be made in the future.

To reduce the dispersal rate of ambrosia beetles avoid transporting LWD infected wood and mulch. The spread of LWD is believed to have been enhanced by human transport of infected wood to areas that had not previously been exposed to LWD. Educate the public about the problems of transporting LWD infected wood.

Maintain natural landscape processes. Allow prescribed and wild fire in the surrounding landscape to enter wetlands. Monitor the response of pondspice populations to periodic prescribed fire in combination with the affects of LWD. Study the response of pondspice to different fire periodicities. Refrain from any activities that alter the hydrology of wetlands where pondspice persists. The practice putting firebreaks around wetlands should be avoided as it prevents fire from entering wetlands and can alter hydrology. Avoid using heavy machinery and applying foliar herbicides within or close proximity to pondspice populations.

AKNOWLEDGEMENTS

This project was funded by the Florida Division of Forestry's Florida Statewide Endangered and Threatened Plant Conservation Program. Dr. Albert Mayfield of the Florida Division of Forestry supplied invaluable information on the identification of LWD in the field. Cindy Cambell from Bok Tower Gardens accepted fruits for long term genetic storage. Two new pondspice populations were documented through the aid of Mark Minno and Cecil Slaughter of St. Johns Water Management District. Brenda Herring of the Florida Natural Areas Inventory documented a location of a previously unrecorded pondspice population. The private landowners and public land managers that assisted on this project are too numerous to list but we are grateful for their support.

REFERENCES

- Dixon, W.N. and R.E. Woodruff. 1982. The black twig borer, *Xylosandrus compactus*. Entomology Circular No. 250. Florida Department of Agriculture and Consumer Services. Division of Plant Industry
- Fraedrich, S.W., T.C. Harrington, R.J. Rabaglia, M.D. Ulyshen, A.E. Mayfield III, J.L. Hanula, J.M. Eickwort, and D.R. Miller. 2008. A fungal symbiont of the redbay ambrosia beetle causes a lethal wilt in redbay and other Lauraceae in the southeastern United States. *Plant Disease* 92:215–224.
- Harrington, T.C., S.W. Fraedrich, and D.N. Aghayeva. 2008. *Raffaelea lauricola*, a new ambrosia beetle symbiont and pathogen on the Lauraceae. *Mycotaxon* Vol 104, pgs. 339-404
- NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available

<http://www.natureserve.org/explorer>. (Accessed: November 14, 2009).

USDA Forest Service. 2009. Forest Health Protection, Southern Region. Laurel Wilt Distribution Map (updated November 17, 2009).

http://www.fs.fed.us/r8/foresthealth/laurelwilt/dist_map.shtml (Accessed: November 23, 2009).

Wood, S.L., and D.E. Bright. 1992. A catalog of Scolytidae and Platypodidae (Coleoptera), Part 2: Taxonomic index. Great Basin Naturalist Memoirs 13:1-1553

Appendix A

GLOBAL AND STATE RANKS

Florida Natural Areas Inventory (FNAI) defines an **element** as any rare or exemplary component of the natural environment, such as a species, natural community, bird rookery, spring, sinkhole, cave, or other ecological feature. FNAI assigns two ranks to each element found in Florida: the **global rank**, which is based on an element's worldwide status, and the **state rank**, which is based on the status of the element within Florida. Element ranks are based on many factors, including estimated number of occurrences, estimated abundance (for species and populations) or area (for natural communities), estimated number of adequately protected occurrences, range, threats, and ecological fragility.

GLOBAL RANK DEFINITIONS

- G1 Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or human factor.
- G2 Imperiled globally because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or human factor.
- G3 Either very rare and local throughout its range (21-100 occurrences or less than 10,000 individuals), or found locally in a restricted range, or vulnerable to extinction from other factors.
- G4 Apparently secure globally (may be rare in parts of range).
- G5 Demonstrably secure globally.
- GH Occurred historically throughout its range, but has not been observed for many years.
- GX Believed to be extinct throughout range.
- GXC Extirpated from the wild but still known from captivity or cultivation.
- G#? Rank uncertain (e.g., G2?).
- G#G# Range of rank; insufficient data to assign specific global rank (e.g., G2G3)
- G#T# Rank of a taxonomic subgroup such as a subspecies or variety; the G portion of the rank refers to the entire species, and the T portion refers to the subgroup; T# has same definition as G#.
- G#Q Ranked as species but there is some question as to whether it is a valid species.
- G#T#Q Same as above, but validity as subspecies or variety is questioned.
- GU Global rank unknown; due to lack of information, no rank or range can be assigned.
- G? Temporarily not ranked.

STATE RANK DEFINITIONS

State ranks (S#) follow the same system and have the same definitions as global ranks, except they apply only to Florida, with the following additions:

- SA Accidental in Florida and not part of the established biota.
- SE Exotic species established in Florida (may be native elsewhere in North America).
- SX Believed to be extirpated from state.

FEDERAL AND STATE LEGAL STATUSES

Provided by FNAI for information only.

For official definitions and lists of protected species, consult the relevant state or federal agency.

FEDERAL LEGAL STATUS

Definitions derived from U.S. Endangered Species Act of 1973, Sec. 3. Note that the federal status given by FNAI refers only to Florida populations and that federal status may differ elsewhere.

LE Endangered: species in danger of extinction throughout all or a significant portion of its range. LT Threatened: species likely to become Endangered within the foreseeable future throughout all or a significant portion of its range.

E(S/A) Endangered due to similarity of appearance to a species which is federally listed such that enforcement personnel have difficulty in attempting to differentiate between the listed and unlisted species.

T(S/A) Threatened due to similarity of appearance (see above).

PE Proposed for listing as Endangered species.

PT Proposed for listing as Threatened species.

C Candidate species for which federal listing agencies have sufficient information on

biological vulnerability and threats to support proposing to list the species as Endangered or Threatened. XN Non-essential experimental population. MC Not currently listed, but of management concern to USFWS. N Not currently listed, nor currently being considered for listing as Endangered or Threatened.

FLORIDA LEGAL STATUSES

Plants: Definitions derived from Sections 581.011 and 581.185(2), Florida Statutes, and the Preservation of Native Flora of Florida Act, 5B-40.001. FNAI does not track all state-regulated plant species; for a complete list of state-regulated plant species, call Florida Division of Plant Industry, 352-372-3505.

LE Endangered: species of plants native to Florida that are in imminent danger of extinction within the state, the survival of which is unlikely if the causes of a decline in the number of plants continue; includes all species determined to be endangered or threatened pursuant to the U.S. Endangered Species Act.

LT Threatened: species native to the state that are in rapid decline in the number of plants within the state, but which have not so decreased in number as to cause them to be Endangered.

PE Proposed for listing as Endangered.

PT Proposed for listing as Threatened.

N Not currently listed, nor currently being considered for listing.

Element Occurrence Record

2009-11-23

Litsea aestivalis

EO Number

2

2714EO_ID

Identification/Location

ID Confirmed Y - Yes

Data Sensitive EO N **Data Sensitive Element** N

Site ID and Name 1767 Northeast Florida Timberlands And Watershed Reserve Florida Forever BOT Project

Survey Site Name BLACK CREEK BOG

Directions **Black Creek Bog: 1983-05-20: go south on SR-21 3 miles from jct. SR-16 to Dade Road (graded) crossing; go east on Dade Road ca. 0.7 miles area on north side of Dade Road (F83SIM02FLUS).**

County Clay (FL)

Latitude 295620N

Longitude 0815255W

USGS quad (7.5 min) Kingsley

margnum 14

quadcode 2908188

006S024ETRS Town/range Sect. 27

Note SE1/4 SEC 27 NE1/4 SEC 34

Watershed 03080103 - Lower St. Johns

EO Representation and Sources

EO Rep Accuracy (est.) High **EO Rep Edited?** N **Confidence Extent ?** -

Uncertain whether full extent of EO is known **YAdd'l Inventory Needed**

Src Features Descriptor (obs data below, if present) Locator 11535

Distance **Conc. Type** **Unc. Type** **Point** **Loc.**
60Areal - Estimated **Use**

Survey Information/EO Rank/Description

Survey Date 2009-10-20 **First Obs Date** 1983-05-20 **Last Obs Date** 2009-10-20

EO Data **2009-10-20:** 101-1000 plants in flower/bud (F09FNA02FLUS). **1983-09-30:** 51-100 individuals leafing, budding, fruiting (F83SIM02FLUS).

Basic EO Rank B -Good estimated viability

EO Rank Date 2009-10-20

EO Rank Comment **Large population persisting (PNDJEN03FLUS).**

General Description **2009-10-20:** Dome swamp with fire suppression and forestry operations. Associated species include *Taxodium ascendens*, *Pinus elliottii*/*Nyssa biflora*, *Taxodium ascendens*/*Woodwardia virginica*, *Sphagnum* sp., and *Xyris* sp. (F09FNA02FLUS). **1983-05-20:** Occupies same habitat as pond cypress, near edge of a depression (F83SIM02FLUS).

Min. Elevation 100 feet **Max. Elevation feet** **EO Observed Area** 3.0 acres

Protection/Management/Ownership

GILMAN PAPER CO., Unknown **Owner Type Name**

Note

Additional Topics/Documentation/Version and QC

DOME SWAMP Topic Keywords

Primary Citation Reference Code

F83SIM02FLUS SIMONS, R.F. FIELD SURVEY OF BLACK CREEK BOG, CLAY COUNTY, FL. WITH N WALTER JUDD, DANA GRIFFIN, AND PAUL MOLER. MAY 20, 1983.

F09FNA02FLUS Florida Natural Areas Inventory. 2009. Status survey of *Litsea aestivalis* in northeast Florida. Y Florida Natural Areas Inventory. Tallahassee, Florida. Survey conducted by Jim Surdick.

PNDJEN03FLUS Jenkins, Amy Miller. Senior Botanist. Florida Natural Areas Inventory, 1018 Thomasville N Road Suite 200C, Tallahassee, Florida 32303. amjenkins@fnai.org

PNDSUR01FLUS Surdick, James. Florida Natural Areas Inventory. 1018 Thomasville Road, Suite 200C, N Tallahassee, FL 32303. 352-374-8650. <jsurdick@fnai.org>

Version Jenkins, A.M. **Date** 11/5/2009 **Transcribed By** MPM **Date** 6/7/1985
Author
Paper Mapping MPM **Date** 6/7/1985 **Digital Mapping By** MPM **Date** 6/7/1985
By
Data QC Status Passed **QC By** aed **Map QC Status** Passed **QC By** aed

Element Occurrence Record

2009-11-23

Litsea aestivalis

EO Number

4

760EO_ID

Identification/Location

ID Confirmed Y - Yes **Data Sensitive** EO N **Data Sensitive Element** N **Site ID and Name** 1767 Northeast Florida Timberlands And Watershed Reserve Florida Forever BOT Project **Directions** 1982-09-05: east of Camp Blanding Military Reservation; north of Rt-16, 0.6 miles east of Jct with Rt-21, ca 4 miles

west of Penney Farms.

County Clay (FL)

Latitude 295845N **Longitude** 0815311W

USGS quad (7.5 min) Kingsley

margnum 19 **quadcode** 2908188

066S024ETRS Town/range Sect. 15

Watershed 03080103 - Lower St. Johns

EO Representation and Sources

EO Rep Accuracy (est.) High

EO Rep Edited? N

Confidence Extent ? - Uncertain whether full extent of EO is known

YAdd'l Inventory Needed

Src Features Descriptor (obs data below, if present) Locator Loc. Use DistanceConc. Type Unc. Type

Point 6010926 Areal - Estimated

Survey Information/EO Rank/Description

Survey Date First Obs Date 1980 **Last Obs Date** 1982-09-05

EO Data 1982-09-05: plants growing on "tussocks" in cypress pond with permanent shallow water (S82ANDFSFLUS)

Basic EO Rank A - Excellent estimated viability **EO Rank Date**

EO Rank Comment Well known, frequently collected site.

General Description 1982-09-05: small cypress pond with *Gordonia*, *Lyonia*, *Persea*, and *Sphagnum* (S82ANDFSFLUS).

Min. Elevation 100 feet **Max. Elevation** feet

Protection/Management/Ownership

Additional Topics/Documentation/Version and QC

General Comments Also collected at this site by Judd (1979, 1980) and Anderson (1982).

Topic Keywords	DOME SWAMP		
Reference Code	Citation		Primary
S82GHOFSLUS	Specimen deposited with museum, herbarium, or private collection.		Y
S80JUDFSFLUS	Specimen deposited with museum, herbarium, or private collection.		N
S82ANDFSFLUS	Specimen deposited with museum, herbarium, or private collection.		N
S79JUDFSFLUS	Specimen deposited with museum, herbarium, or private collection.		N
Version Author	Date	Transcribed By AFJ	Date 4/22/1988
Paper Mapping By	AFJ	Digital Mapping By AFJ	Date 4/22/1988
	Date 4/22/1988		
Data QC Status	Passed	QC By	Map QC Status Passed
			QC By

Element Occurrence Record

2009-11-23

Litsea aestivalis EO Number **6** **6244**EO_ID

Identification/Location

ID Confirmed Y - Yes **Data Sensitive** EO N **Data Sensitive Element** N **Site ID and Name**

Directions **2005-08-01**: Travel south from Williston ca 13miles south on HWY 41, turn right on first road south of 328. Buck Pond is located south of this unnamed road and is surrounded by private property and pasture. Buck Pond is visable on topomaps and Gazetteer (PNDRUS02FLUS). **1942-05-03**: edge of Buck Pond, 15 miles south of Williston (S42NIEUFFLUS).

County Marion (FL) **Latitude** 291021N **Longitude** 0822710W **USGS quad (7.5 min)** Romeo **margnum** 1 **quadcode** 2908224

TRS Town/range 015S018E **Sect.** 014 015S018E 013
015S018E 024

Watershed 03100208 - Withlacoochee

EO Representation and Sources

EO Rep Accuracy (est.) High **EO Rep Edited?** N **Confidence Extent** ? -

Uncertain whether full extent of EO is known Y **Add'l Inventory Needed**

Src Features Descriptor (obs data below, if present) **Locator** Russo, Paul.

2005. EO update form. Buck Pond 32743

Conc. Type Unc. Type	Distance	Loc. Use
Polygon Negligible		

Survey Information/EO Rank/Description

Survey Date 2005-08-01 **First Obs Date** 1942-05-03 **Last Obs Date** 1942-05-03 **EO Data** **2005-08-01**: Failed to find, assumed extirpated (F05RUS18FLUS). **1942-05-03**: fruiting (S42NIEUFFLUS). **Basic EO Rank** X -Extirpated
EO Rank Date 2005-08-01 **General Description** 2005-08-01: Pond is weedy with very little woody componant. Dominated by *Nelumbo lutea* (F05RUS18FLUS). **Min. Elevation** 50 feet **Max. Elevation** feet

Protection/Management/Ownership

Owner Type Unknown **Name** Note

Additional Topics/Documentation/Version and QC

General Comments 1955: also collected at same (?) site [i.e. Buck Pond Farming Community by Nieland (1955-04-07)]. **Topic Keywords** 75C

Reference Code Citation

S42NIEUFFLUS Specimen deposited with museum, herbarium, or private collection. N F05RUS18FLUS Russo, Paul. 2005. EO update form for *Litsea aestivalis*. Y PNDRUS02FLUS Russo, Paul. Field Biologist, Florida Natural Areas Inventory, 1018 Thomasville Rd., Suite N 200-C, Tallahassee, FL 32303. (850) 224-8207 ext 211

Primary

Version	Russo, Paul	Date	8/9/2005	Transcribed By	AFJ	Date	4/22/1988
Author							
Paper Mapping By	AFJ	Date	4/22/1988	Digital Mapping By	AFJ	Date	4/22/1988
Data QC Status	Passed	QC By	kjg	Map QC Status	Passed	QC By	kjg

Element Occurrence Record

2009-11-23

Litsea aestivalis EO Number **7** **10845**EO_ID

Identification/Location

ID Confirmed Y - Yes Data Sensitive EO N Data Sensitive Element N Site ID and Name

Directions **2005-08-03:** From Georgetown, go NE on paved Georgetown Denver Road to W entrance of Whispering Pines Subdivision. Turn N on graded dirt Whispering Pines Road Road and follow to N end of subdivision. Site is NE of Sandpiper Lane between Oleander Lane on the W and Mockingbird Court on the E. Hike along ditch NE to depression marsh. *Litsea* is on the N and NE sides of the open marsh (PNDSCH03FLUS). **1982-10-31:** north of center of Sec 32, T12 and R27E, ca. 0.25 miles north of Fill Road, ca. 1.5 miles northwest of jct. with Crescent City

Road, ca. 5 miles southwest of Crescent City (S82MEAUGFLUS). Putnam (FL)

County Latitude 292451Crescent City**USGS quad (7.5 min) margnum** 4 N **Longitude quadcode** 0813542W 2908145

012S027ETRS **Town/range** 032**Sect.**

Watershed 03080101 - Upper St. Johns

EO Representation and Sources

EO Rep Accuracy (est.) Very High **EO Rep Edited?** N **Confidence Extent ?**

- Uncertain whether full extent of EO is known **YAddt'l Inventory Needed**

Src Features Descriptor (obs data below, if present) Locator Point 1: Schultz

2005 Ocala National Forest33911 Point 2: Schultz, 2005 Ocala National Forest33912

Conc. Type Unc. Type

Point Negligible Point
Negligible

Distance

Loc. Use

Survey Information/EO Rank/Description

Survey Date 2005-08-03 **First Obs Date** 1982-10-31 **Last Obs Date** 2005-08-03

EO Data **2005-08-03:** Five sterile shrubs 6 to 12' tall, one at north end, remainder in northeast corner of open depression marsh, all in standing water about 12" deep (PNDSCH03FLUS). **1982-10-31:** 2 plants at least, multi-stemmed shrub, ca. 8-10' tall;

two specimens collected by M.W. Meador (#147781 UF and UG specimen # not known).

Basic EO Rank BC -Good or fair estimated viability **EO Rank Date** 2005-08-03

EO Rank Comment (PNDSCH03FLUS).

General Description **2005-08-03:** Depression marsh with open center of *Panicum hemitomom* and perimeter with *Pinus elliottii*, *Nyssa biflora*, and *Ilex cassine*. N end of marsh covered with *Pinus elliottii* and *Lachnanthes caroliniana*. Basin full of water. Ditch connects depression marsh to larger highly disturbed (covered with *Vitis rotundifolia*) marsh to the southwest. Mature sand pine scrub to west and south (PNDSCH03FLUS). **1982-10-31:** In water on edge of sand pond at edge of sand pine ridge.

Min. Elevation 30 feet **Max. Elevation** feet

Protection/Management/Ownership

Additional Topics/Documentation/Version and QC

General Comments **2005-08-03:** Locked gate and posted signs at N end of Mockingbird Court prevent access to another similar depression marsh. Posted signs also prevent access to NE part of surveyed depression marsh (PNDSCH03FLUS).

Additonal Topics **2009-10-21:** Unable to access site because of "No Trespass" signs during the 2009 Litsea Survey (F09FNA02FLUS). **2005-09-19:** EO Update Form Attached; Replaced old source point (which was located in developed area) with 2 new source points (PNDJEN03FLUS).

Topic Keywords 75C DEPRESSION MARSH

Reference Code	Citation Primary
S82MEAUGFLUS	Specimen deposited with museum, herbarium, or private collection. N
PNDSCH03FLUS	Schultz, Gary E. Botanist/Ecologist. Florida Natural Areas Inventory, 1018 Thomasville Y Road, Suite 200-C, Tallahassee, FL 32303. (850)224-8207
F05SCH33FLUS	Schultz, G.E. 2005. Shapefiles for field survey and EO Update Survey for Ocala National N Forest.
PNDJEN03FLUS	Jenkins, Amy Miller. Senior Botanist. Florida Natural Areas Inventory, 1018 Thomasville N Road Suite 200C, Tallahassee, Florida 32303. amjenkins@fnai.org

Version	Schultz, G. E.	Date	8/25/2005	Transcribed By	AFJ	Date	4/22/1988
Author							
Paper Mapping By	AFJ	Date	4/22/1988	Digital Mapping By	AFJ	Date	4/22/1988
Data QC Status	Passed	QC By	mrj	Map QC Status	Passed	QC By	mrj

Element Occurrence Record

2009-11-23

Litsea aestivalis

EO Number

9

969EO_ID

Identification/Location

ID Confirmed Y - Yes

Data Sensitive EO N Data Sensitive Element N

Site ID and Name

Survey Site Name THE FOUNTAINS AT ST. AUGUSTINE

Directions **1991-11-13:** SR-16, 1000 ft. east of entrance to Florida Highway Patrol Station on south side of road at intersection with 9th street. In cypress dome closest to road; most plants on south side of dome (U91GRA01FLUS) (see attached

map). St. Johns (FL) County Saint Augustine USGS
quad (7.5 min)

Latitude 295452N
margnum 20

Longitude
quadcode 0812123W 2908183

007S029ETRS Town/range 011Sect.

Watershed 03080201 - Daytona - St. Augustine

EO Representation and Sources

EO Rep Accuracy (est.) Very High

EO Rep Edited? N Confidence Extent N - Confident full extent of EO is NOT known Addt'l Inventory Needed Y Src Features

Descriptor (obs data below, if present) Locator Conc. Type Unc. Type Distance Loc. Use

41541 Jim Surdick, 2009 Litsea Survey Point Negligible 2008-11-17 Jim Surdick 51-100 plants in flower. Said to be common within the golf course basin swamps. Approx 80% 10982 Point Negligible 1991-11-13 Lisa Grant 50 OR MORE PLANTS IN A DOME SWAMP APPROXIMATELY TWO ACRES IN SIZE. 10982 Point Negligible 2008-11-25 Jim Surdick 51-100 plants in flower. Approx 20% of shrubs have some brown leaves, did not find any stand

Survey Information/EO Rank/Description

Surveyor(s) 2008: Surdick, Jim

Survey Date First Obs Date 1991-11-13 Last Obs Date 2008-11-17

EO Data 2008-11-17: 102-202 plants in flower in two distinct areas. For detailed information at each point see Source Observation tab (F09FNA02FLUS). 1991-11-13: 50 or more plants in a dome swamp approximately two acres in size (U91GRA01FLUS).

Basic EO Rank D? - Possibly poor estimated viability EO Rank Date 2008-11-17

EO Rank Comment Good sized population in two distinct areas but surrounded by golf course and residential development and suffering from Laurel Wilt (PNDJEN03FLUS).

General Description 2008-11-17: Dome and basin swamp. For detailed information at each point see Source Observation tab (F09FNA02FLUS). 1991-11-13: burned cypress done with relatively open canopy surrounded by young slash pine (*Pinus elliotii*) associated species includes *Woodwardia virginiana*, *Sphagnum*, *Taxodium distichum* and *Xyris* spp (U91GRA01FLUS).

Min. Elevation 34 feet Max. Elevation feet

Protection/Management/Ownership

Owner Type Unknown Name UNDERHILL Note

Additional Topics/Documentation/Version and QC

General Comments 1991: some disturbance at site in form of fire, clearing, and site prep for pines. This site is the proposed site of "the fountains of St. Augustine" subdivision, SJRWMD Permit No. 4-109-0105A issued 1990-04.

Topic Keywords 75D BASIN SWAMP DOME SWAMP

Reference Code	Citation Primary						
U91GRA01FLUS	GRANT, LISA. 1991. FIELD REPORT FORM FOR OCCURRENCE OF LITSEA N AESTIVALIS IN ST. JOHNS CO., FL.						
F09FNA02FLUS	Florida Natural Areas Inventory. 2009. Status survey of Litsea aestivalis in northeast Florida. Y Florida Natural Areas Inventory. Tallahassee, Florida. Survey conducted by Jim Surdick.						
PNDSUR01FLUS	Surdick, James. Florida Natural Areas Inventory. 1018 Thomasville Road, Suite 200C, N Tallahassee, FL 32303. 352-374-8650. <jsurdick@fnai.org>						
PNDJEN03FLUS	Jenkins, Amy Miller. Senior Botanist. Florida Natural Areas Inventory, 1018 Thomasville N Road Suite 200C, Tallahassee, Florida 32303. amjenkins@fnai.org						
Version	Jenkins, A.M.	Date	7/24/2009	Transcribed By	RAH	Date	12/6/1991
Author							
Paper Mapping	TEO	Date	3/10/1992	Digital Mapping By	TEO	Date	3/10/1992

By
Data QC
Status

Passed QC By swm

Map QC Status

Passed QC By swm

Element Occurrence Record

2009-11-23

Litsea aestivalis

EO Number

10

972EO_ID

Identification/Location

ID Confirmed Y - Yes **Data Sensitive** EO N **Data Sensitive** Element N **Site ID and Name** 2379 Carr Farm/Price's Scrub Florida Forever BOT Project **Survey Site Name** MARI050

Directions 1993-04-19: at southern end of "Price's Scrub"; 0.9 miles northwest of intersection of I-75 and CR-320, ca. 2 miles east of CR-329. Paved road which forms southern site boundary is fenced off; park near gate and walk east ca. 2000 feet; then north along dirt road ca. 100 feet. Small pond on right (F93CHI01FLUS).

County Marion (FL)

Latitude 292723N **Longitude** 0821631W

USGS quad (7.5 min) Flemington

margnum 7 quadcode 2908243

012S020ETRS Town/range 011Sect.

Watershed 03080102 - Oklawaha

EO Representation and Sources

EO Rep Accuracy (est.) High **EO Rep Edited?** N **Confidence Extent** Y - Confident full extent of EO is known

NAdd'l Inventory Needed Src Features Descriptor

(obs data below, if present) 2005-02-22-Brenda Herring 34779

Locator Prices
Scrub

Conc. Type Unc. Type
Polygon Negligible

Distance

Loc. Use

Survey Information/EO Rank/Description

Survey Date 2009-10-07 **First Obs Date** 1993-02-24 **Last Obs Date** 2009-10-07

EO Data **2009-10-07**: Approximately 68 plants, 20% with large dead stems and 20% small dead branch tips, 1 all brown, 5% resprouts (F09FNA02FLUS). **2005-02-22**: 51-100 flowering, multi-stemmed, widely scattered plants at ca. 6 ft. tall with stems that had a diameter of 1 inch growing in a depression marsh in an area of ca. 10000 square feet (F05HER02FLUS). **1993-04-19**: 10-15 fairly large shrubs in bloom late Feb leaves not emerged yet Update April 17; leaves fully emerged, no evidence of fruiting (F93CHI01FLUS).

Monitoring Needs Comments 2005-02-22: Feral hogs need to be removed and kept in check (PNDHER03FLUS).

Basic EO Rank BC -Good or fair estimated viability **EO Rank Date** 2009-10-07

EO Rank Comment **2009-10-07**: Hog digging and fire suppression still present plus some plants have dead stems for unknown reason (PNDJEN03FLUS). **2005-02-22**: Previously ranked AC: Habitat was severely under attack by feral hogs. Many of the *Litsea aestivalis* individuals were recently plowed or pushed up by hog activity (PNDHER03FLUS).

General Description **2009-10-07**: Depression marsh with hog digging and fire suppression. Associates include *Nyssa biflora*, *Pinus elliotii*/*Diospyros virginiana*, *Ilex cassine*/*Cephalanthus occidentalis*, *Vaccinium corymbosum*, *Ilex glabra*/*Woodwardia virginiana*, *Andropogon virginicus*, and *Panicum hemitomom* (F09FNA02FLUS). **2005-02-22**: Multi-stemmed shrubs occurred around the entire perimeter of a depression marsh, with a few plants creeping into the

deeper portions of the marsh. Eighty percent of the plants were in flower (PNDHER03FLUS). **1993-02-24:** shrubs along margin of small pond in scrubby flatwoods area growing just above ordinary high water line in zone also containing Carolina willow and *Nyssa sylvatica*. Plants 2-3 meters in height. Pond basin dominated by maidencane, *Lachnanthes*, and *Cephalanthus* in shallows and *Nymphaea odorata* in basin (F93CHI01FLUS).

Min. Elevation 195 feet Max. Elevation feet

Protection/Management/Ownership

Protection Comments 2005-02-22: Feral hogs need to be removed immediately (PNDHER03FLUS).

MA ID	Managed Area Name	Type	Contained
1276	Price's Scrub	SGTGT	Y - Yes
More Management	Y - Yes		

Management Comments 2005-02-22: Feral hogs have dug up plants and broken off stems. The hogs need to be removed immediately (PNDHER03FLUS). **Owner Type** State/provincial government **Name** FLDEP **Note** Florida Department of Environmental Protection, Office of Greenways and Trails.

Additional Topics/Documentation/Version and QC

General Comments **2005-02-22:** Data from Natural Community Survey of Prices Scrub, Marion County (Florida) (PNDHER03 FLUS). **1993-02-24:** information from Marion County PNA survey by E. Chicardi (F93CHI01FLUS). **Topic Keywords** DEPRESSION MARSH FLATWOODS LAKE

Reference Code	Citation Primary
F93CHI01FLUS	CHICARDI, E. 1993. FIELD SURVEY OF MARION COUNTY INVENTORY SITES, 1 N JANUARY-30 APRIL 1993.
F05HER02FLUS	Herring, B. J and A. E. Davis. 2005. Ecological Survey of Prices Scrub Greenway, Marion N County, Florida. Unpublished report submitted to the Office of Greenways and Trails. Florida Natural Areas Inventory, Tallahassee, FL.
PNDHER03FLUS	Herring, Brenda. Field Botanist, Florida Natural Areas Inventory, 1018 Thomasville Rd., Ste. N 200-C, Tallahassee, Florida 32303. 850-224-8207. PNDJEN03FLUS Jenkins, Amy Miller. Senior Botanist. Florida Natural Areas Inventory, 1018 Thomasville N Road Suite 200C, Tallahassee, Florida 32303. amjenkins@fnai.org F09FNA02FLUS Florida Natural Areas Inventory. 2009. Status survey of <i>Litsea aestivalis</i> in northeast Florida. Y Florida Natural Areas Inventory. Tallahassee, Florida. Survey conducted by Jim Surdick. PNDSUR01FLUS Surdick, James. Florida Natural Areas Inventory. 1018 Thomasville Road, Suite 200C, N Tallahassee, FL 32303. 352-374-8650. <jsurdick@fnai.org>

Version	Author	Date	Transcribed By	Date
	Jenkins, A.M.	11/4/2009	BJH	7/19/2006
Paper Mapping By	Date	Digital Mapping By	Date	
MLE	4/10/1993	MLE	4/10/1993	
Data QC Status	QC By	Map QC Status	QC By	
Passed	aed	Passed	amj	

Element Occurrence Record

2009-11-23

Litsea aestivalis

EO Number

13

15443EO_ID

Identification/Location

ID Confirmed Y - Yes

Data Sensitive EO N **Data Sensitive Element** N

Site ID and Name

Directions Osceola National Forest: 0.7 mi. south of junction of FR 262 and FR 237, approximately 200 meters east of FR 237 and approximately 100 meters south of the Florida Trail (PNDANG01FLUS).

County Columbia (FL)

Latitude 302034N **Longitude** 0823515W

USGS quad (7.5 min) Deep Creek

margnum 43 **quadcode** 3008235

002S017ETRS Town/range Sect. 002

Watershed 03110201 - Upper Suwannee

EO Representation and Sources

EO Rep Accuracy (est.) High

EO Rep Edited? N

Confidence ? - Uncertain whether full extent of EO is known

Extent

Add'l Inventory Needed N

Src Features Descriptor (obs data below, if present)	Locator	Conc. Type	Unc. Type	Distance	Loc. Use
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41685	Surdick, Jim 2008 Litsea Survey	Osceola National Forest	Point	Negligible	
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2009-07-23 Surdick, Jim 21 plants observed, 3 in fruit. In depression marsh with forestry operations and fire suppression 15277 Point Negligible

1996-03-21 Anglin, Guy Anglin observed 6 plants, one pistillate with flower. There were several dead plants observed. 15277 Point Negligible

2009-07-23 Surdick, Jim 9 plants observed, one with ripe fruit. In depression marsh with forestry operations and fire sup

Survey Information/EO Rank/Description

Survey Type/Note Qualitative ground survey

Surveyor(s) Jim Surdick

Survey Date 2009-07-23 **First Obs Date** 1996-03-21 **Last Obs Date** 2009-07-23

EO Data **2009-07-23:** 30 plants in two distinct areas. For detailed information at each location see Source Observation Tab (F09FNA02FLUS). **1996-03-21:** Anglin observed 6 plants, one pistillate with flower. There were several dead plants observed.

Basic EO Rank BC -Good or fair estimated viability **EO Rank Date** 2009-07-23

EO Rank Comment **Good population in fire suppressed habitat but protected on managed area (PNDJEN03FLUS).**

General Description 2009-07-23: Depression marsh with forestry operations and fire suppression. For detailed information at each location see Source Observation Tab (F09FNA02FLUS). Slash pine plantation around pond with *Nyssa biflora* and open margins (F09FNA02FLUS).

Min. Elevation 134 feet **Max. Elevation** feet

Protection/Management/Ownership

MA ID Managed Area Name

Type Contained

246 Osceola National Forest FFSNF Y - Yes **Management Comments** Care when prescribed burning. When litter builds up in pond, fire will obviously creep into pond, killing plants.

Additional Topics/Documentation/Version and QC

General Comments Anglin estimates one half acre of suitable habitat. **Topic**

Keywords DEPRESSION MARSH

Reference Code

Citation Primary

PNDANG01FLUS
F09FNA02FLUS

Anglin, Guy. Botanist. U.S. Forest Service (retired). cell: 850/644-0999; email: N aristida@nettally.com
Florida Natural Areas Inventory. 2009. Status survey of *Litsea aestivalis* in northeast Florida. Y Florida Natural Areas Inventory. Tallahassee, Florida. Survey conducted by Jim Surdick.

PNDJEN03FLUS

Jenkins, Amy Miller. Senior Botanist. Florida Natural Areas Inventory, 1018 Thomasville N Road Suite 200C, Tallahassee, Florida 32303. amjenkins@fnai.org

PNDSUR01FLUS

Surdick, James. Florida Natural Areas Inventory. 1018 Thomasville Road, Suite 200C, N Tallahassee, FL 32303. 352-374-8650. <jsurdick@fnai.org>

Version

Jenkins, A.M.

Date 8/5/2009

Transcribed By CEL

Date 6/27/1996

Author

Paper Mapping

CEL

Date 6/27/1996

Digital Mapping By CEL

Date 6/27/1996

By

Data QC

Passed

QC By kln

Map QC Status

Passed

QC By kln

Status

Element Occurrence Record

2009-11-23

Litsea aestivalis

EO Number

14

4716EO_ID

Identification/Location

ID Confirmed Y - Yes **Data Sensitive** EO N **Data Sensitive Element** N **Site ID and Name** Survey Site Name RODMAN BOMB TARGET

Directions 1996-06-27: From SR-20 in Palatka, go south on SR-19 ca. 12 miles to a chained (locked) dirt road on west side just north of the Oklawaha River floodplain. Turn west and follow this limerock road ca. 0.4 mile across St. Johns River Water Management District property to a second locked gate at the edge of the U.S. Navy property. Proceed west ca.

0.8 miles and turn north at cleared bomb target. Follow dirt road northwest and west around target, then turn south and continue along the west edge of the target area ca. 0.15 miles. Turn northwest and follow jeep trail ca. 0.8 miles to intersection. Continue northwest ca. 800'. Park in road and walk north ca. 100' through planted pines to marsh

(PNDSCH03FLUS). Putnam (FL) **County** Rodman

USGS quad (7.5 min)

Latitude 293004N margnum
34

Longitude
quadcode 0814653W 2908157

011S025E 34TRS Sect. **Town/range**

Note N1/4 NE1/4 NW1/4

NE1/4

Watershed 03080102 - Oklawaha

EO Representation and Sources

EO Rep Accuracy (est.) High

EO Rep Edited? N

Confidence Extent ? - Uncertain whether full extent of EO is known

YAdd'l Inventory Needed

Src Features Descriptor (obs data below, if present) Locator Loc. Use Distance Conc. Type Unc. Type

Point 6012141 Areal - Estimated

Survey Information/EO Rank/Description

Survey Date 1996-06-27 **First Obs Date** 1996-06-27 **Last Obs Date** 1996-06-27

EO Data 1996-06-27: A good population of *Litsea* is located around the periphery of this small depression marsh. The plants are growing on the north, south and southwest sides of the marsh on the slight slope just inside the surrounding dense *Serenoa repens*. The sizes of the four mature shrubs were estimated to be: 15' tall by 15' wide, 11' by 10', 10' by 10', and 10' by 6'. Near one of the large *Litsea* on the east side are four smaller shrubs 4.5', 2', 2' and 1' tall. Two of the larger *Litsea* have numerous ripe fruit and one year old seedlings in the ground beneath (PNDSCH03FLUS).

Basic EO Rank B -Good estimated viability

EO Rank Date 1996-06-27

EO Rank Comment **Four mature (to 15' tall) and four young (to 5') shrubs plus many seedlings in restricted access managed area.**

General Description This depression marsh of about one-half acre is oval in shape and about 150' east-west and 200' north-south at its widest points. The vegetation appears to be in concentric rings as influenced by water depth. The center of open and deepest water with *Nymphaea odorata* is surrounded by *Pontederia cordata* and *Eleocharis cellulosa*. Next is a wide band of *Panicum hemitomon*, *Sagittaria subulata*, and *Sphagnum*. At the shallow edges are *Woodwardia virginica*, *Lachnanthes caroliniana*, and *Andropogon glomeratus* growing beneath a thin canopy of *Nyssa biflora*. The thin midstory and understory consist of a few trees of *Persea palustris* and scattered shrubs of *Litsea aestivalis* and *Vaccinium corymbosum*. The marsh is currently full of water which appears to be over 3' deep in the center. A shallow ditch runs into the south edge of the marsh. Overall, this is a relatively undisturbed natural community surrounded by a mature slash pine plantation. The dense *Serenoa repens* understory is especially thick at the edge of the marsh. This area retains some of the original mesic flatwoods ground cover. About five other depression marshes are nearby in the northwest corner of the naval reservation (PNDSCH03FLUS).

Min. Elevation 25 feet Max. Elevation feet

Protection/Management/Ownership

More Land N - No More Protection TNC involvement Protection Comments This marsh should be protected from disturbance when the adjacent pine plantation is logged.

MA ID Managed Area Name

Type Contained

84 Rodman Bomb Target FNVBT **Management Comments** The *Litsea* population should be considered whenever management decisions are being made for the naval reservation. **Owner Type Unknown Name DOD: U.S. NAVY Note**

Additional Topics/Documentation/Version and QC

General Comments Aerial photo: FDOT PD3809-10-05; flown 1989-11-10. **Topic Keywords** DEPRESSION MARSH

Reference Code

Citation Primary

PNDSCH03FLUS

Schultz, Gary E. Botanist/Ecologist. Florida Natural Areas Inventory, 1018 Thomasville Y Road, Suite 200-C, Tallahassee, FL 32303. (850)224-8207

Version		Date		Transcribed By	GES	Date	2/13/1997
Author							
Paper Mapping By	GES	Digital Mapping By	Date 2/13/1997	GES		Date	2/13/1997
Data QC Status	Passed	QC By		Map QC Status	Passed	QC By	

Element Occurrence Record

2009-11-23

Litsea aestivalis EO Number **15** **23155**EO_ID

Identification/Location

ID Confirmed Y - Yes **Data Sensitive** EO N **Data Sensitive Element** N **Site ID and Name** Survey Site Name RODMAN BOMB TARGET

Directions **1996-06-27: From SR-20 in Palatka, go south on SR-19 ca. 12 miles to a chained (locked) dirt road on west side just north of the Oklawaha River floodplain. Turn west and follow this limerock road ca. 0.4 miles across St. Johns River Water Management District property to a second locked gate at the edge of the U.S. Navy property. Proceed west ca. 0.8 miles and turn north at cleared bomb target. Follow dirt road northwest and west around target, then turn south and continue along the west edge of the target area ca. 0.15 miles. Turn northwest and follow jeep trail ca. 0.8 miles to intersection. Continue northwest ca. 800'. Park in road and walk north ca. 100' through planted pines to marsh then continue northwest another 250' to second marsh (PNDSCH03FLUS).**

County	Putnam (FL)	Latitude	293006N	Longitude	0814654W
USGS quad (7.5 min)	Rodman	margnum	36	quadcode	2908157

011S025ETRS Town/range 27Sect. **Note** SW1/4 SE1/4 SW1/4 SE1/4

Watershed 03080102 - Oklawaha

EO Representation and Sources

EO Rep Accuracy (est.) High

EO Rep Edited? N

Confidence Extent ? - Uncertain whether full extent of EO is known

YAdd'l Inventory Needed

Src Features Descriptor (obs data below, if present) Locator Loc. Use DistanceConc. Type Unc. Type

Point 6017525 Areal - Estimated

Survey Information/EO Rank/Description

Survey Date 1996-06-27 **First Obs Date** 1996-06-27 **Last Obs Date** 1996-06-27

EO Data 1996-06-27: One plant was located at the southwest edge of this small depression marsh. The shrub is just inside the dense *Serenoa repens* which surround the marsh. Its size is estimated to be 10' tall by 8' wide and it is covered with numerous ripe fruit (PNDSCH03FLUS).

Basic EO Rank BC -Good or fair estimated viability **EO Rank Date** 1996-06-27

EO Rank Comment **Only one mature (10' tall) shrub in restricted access managed area.**

General Description 1996-06-27: This depression marsh of about one acre is oval in shape and about 200' east-west and 250' north-south at its widest points. *Panicum hemitomon* and *Pontederia cordata* cover the center. *Lachnanthes caroliniana*, *Woodwardia virginica* and *Syngonanthus flavidulus* occur along the edges beneath a thin canopy of *Nyssa biflora*. A few scattered trees of *Ilex cassine*, *Magnolia virginiana*, and *Persea palustris* make up the midstory. The marsh is

currently full of water which appears to be over 2' deep in the center. A shallow ditch runs into the southwest edge of the marsh. Overall, this is a relatively undisturbed natural community. The surrounding land is covered by a mature slash pine plantation which retains some of the original mesic flatwoods ground cover. The dense *Serenoa repens* understory is especially thick at the edge of the marsh. About five other depression marshes are nearby in the northwest corner of the naval reservation (PNDSCH03FLUS).

Min. Elevation 25 feet Max. Elevation feet EO Observed Area 1.0 acres

Protection/Management/Ownership

More Land N - No More Protection TNC involvement Protection Comments This marsh should be protected from disturbance when the adjacent pine plantation is logged. **MA ID Managed Area Name Type Contained**

84 Rodman Bomb Target FNVBT

Management Comments The *Litsea* population should be considered whenever management decisions are being made for the naval reservation. **Owner Type** Unknown **Name** DOD: U.S. NAVY **Note**

Additional Topics/Documentation/Version and QC

General Comments Aerial Photo: FDOT PD3809-10-05; flown 1989-11-10.

Reference Code Citation Primary

PNDSCH03FLUS Schultz, Gary E. Botanist/Ecologist. Florida Natural Areas Inventory, 1018 Thomasville Y Road, Suite 200-C, Tallahassee, FL 32303. (850)224-8207

Version		Date	Transcribed By	GES	Date	2/14/1997
Author						
Paper Mapping By	GES	Digital Mapping By	Date 2/14/1997	GES	Date	2/14/1997
Data QC Status	Passed	QC By	Map QC Status	Passed	QC By	

Element Occurrence Record

2009-11-23

<i>Litsea aestivalis</i>	EO Number	19	28964 EO_ID
Identification/Location			

ID Confirmed Y - Yes Data Sensitive EO N Data Sensitive Element N Site ID and Name Survey Site Name

Mill Creek Nature Preserve **Directions** 2003-10-10: Mill Creek Nature Preserve, Alachua County; corner of CR-236 and CR-241; plants are in dome swamp

in southwest corner of the preserve (PNDFOL02FLUS). Alachua (FL) **County** 9N

Latitude 29521High Springs **USGS quad (7.5 min) margnum** Mikesville **Longitude quadcode** 0823045W 2908275 2908285

007S018E**TRS Town/range Sect.** 021 016

007S018E

007S018E 015

Watershed 03110206 - Santa Fe

EO Representation and Sources

EO Rep Accuracy (est.) Very High

EO Rep Edited? N

Confidence Y - Confident full extent of EO is known

Extent

Add'l Inventory Needed N

Src Features Descriptor (obs data below, if present)	Locator	Conc. Type	Unc. Type	Distance	Loc. Use
41115 Point 2: Litsea aestivalis Survey 2008-09	Mill Creek	Point	Negligible		

2008-12-04 Jim Surdick One plant in flower/bud. Doesn't appear to have laurel wilt, buck rubbed, 10 Persea nearby with 29614 Point 1: Michelle Foley 10 October 2003 Point Negligible

2003-10-10 Michelle Foley Approximately 70 plants in a 2 acre dome swamp; in bud (PNDFOL02FLUS). 29614 Point 1: Michelle Foley 10 October 2003 Point Negligible

2008-12-04 Jim Surdick Approximately 90 bushes, took samples to test for Laurel Wilt, 10% standing dead, 12 with buc

Survey Information/EO Rank/Description

Survey Type/Note Qualitative ground survey

Surveyor(s) MICHELLE FOLEY Jim Surdick

Survey Date 2008-12-04 First Obs Date 2003-10-10 Last Obs Date 2008-12-04

EO Data **2008-12-04:** 91 plants observed at 2 locations in flower. For detailed number of plants for each source feature see Observations tab for each Source Feature (U09SUR01FLUS). **2003-10-10:** approximately 70 plants in a 2 acre dome swamp; in bud (PNDFOL02FLUS).

Basic EO Rank A - Excellent estimated viability

EO Rank Date 2008-12-04

EO Rank Comment **Large population, reproducing, on a managed area (PNDCHA05FLUS).**

General Description 2003-10-10: dome swamp located in matrix of recently logged pine flatwoods; swamp is largely intact except for removal of a few pines around the edge; overstory dominated by *Nyssa biflora* with some *Acer rubra*; shrubs primarily *Leucothoe racemosa* and *Myrica cerifera*; ground cover species include *Woodwardia virginica*, *Juncus repens*, and *Carex glaucescens* (PNDFOL02FLUS).

Protection/Management/Ownership

MA Managed Area Name Mill Creek Nature Preserve Type LALAL Contained Y - Yes

ID 1634 Owner Local government Type ALACHUA COUNTY Name Note

Additional Topics/Documentation/Version and QC

Additional Topics **2009-04-28:** For detailed number of plants for each source feature see Observations tab for each Source Feature (U09SUR01FLUS).

Topic Keywords DEPRESSION MARSH DOME SWAMP

Reference Code Citation Primary

PNDFOL02FLUS FOLEY, MICHELLE. ALACHUA COUNTY ENVIRONMENTAL PROTECTION N DEPARTMENT, 201 SE 2ND AVE., SUITE 201, GAINESVILLE, FL 32601. 352-264-6848. MFOLEY@SMTP.CO.ALACHUA.FL.US.

PNDCHA05FLUS Chafin, Linda G. Senior Botanist. Florida Natural Areas Inventory, 1018 Thomasville Road, N Suite 200-C,

Tallahassee, FL 32303. (850) 224-8207.

U09SUR01FLUS Surdick, J. and A. Jenkins. Status survey for pondspice (*Litsea aestivalis*) in northeastern Y Florida. Florida Natural Areas Inventory, Tallahassee, Florida.

PNDSUR01FLUS Surdick, James. Florida Natural Areas Inventory. 1018 Thomasville Road, Suite 200C, N Tallahassee, FL 32303. 352-374-8650. <jsurdick@fnai.org>

Version	Jenkins, A.M.	Date	4/28/2009	Transcribed By	LGC	Date	5/28/2004
Author							
Paper Mapping By		Date		Digital Mapping By	lgc	Date	5/28/2004
Data QC Status	Passed	QC By	amj	Map QC Status	Passed	QC By	aed

Element Occurrence Record

2009-11-23

Litsea aestivalis

EO Number

20

29118EO_ID

Identification/Location

ID Confirmed Y - **Yes Data Sensitive** EO N **Data Sensitive Element** N **Site ID and Name**

Directions 2004-08-30: Switzerland, St. John's County; From I-10 take I-275 south over the St. John's River on Buckman Bridge; take the SR-13 exit south for 10.1 miles; EO is 200 feet east of SR-13 (PNDTAN01FLUS). 2004-04-01: Just north Gate 11 of Riverton (Rivertown Development) and approximately 200 feet east of SR-13 (F04JOH01FLUS).

County St. Johns (FL) **Latitude** 300310N **Longitude** 0813960W

USGS quad (7.5 min) Fleming Island **margnum** **quadcode** 3008116

005S026ETRS Town/range Sect. 044

Watershed 03080103 - Lower St. Johns

EO Representation and Sources

EO Rep Accuracy (est.) Medium **EO Rep Edited?** N **Confidence Extent ?** -

Uncertain whether full extent of EO is known Y **Add'l Inventory Needed**

Src Features Descriptor (obs data below, if present) **Locator** Johnson, Peter-2004-fieldform 29928

Distance	Conc.	Type	Unc.	Type	Point	Loc.
					50Areal - Estimated	Use

Survey Information/EO Rank/Description

Survey Type/Note Qualitative ground survey **Survey Date** **First Obs Date** 2004-04-01 **Last Obs Date** 2004-04-01

EO Data 2004-04-01: ca. 200 plants in fruit; fruit not ripe, but green at time of observation (F04JOH01FLUS).

Condition of EO large population reproducing near development **Size of EO** large population **Landscape Context** occurs on housing development property, which according to 1999 DOQQ's has not been cleared yet **Basic EO Rank** BC -Good or fair estimated viability **EO Rank Date** 2004-04-01 **General Description** 2004-04-01: Pine flatwoods depression pond; frequent inundation; sparse bald cypress and black gum, pond spice dominant shrub layer, and sphagnum on ground; old firebreaks nearby (F04JOH01FLUS).

Protection/Management/Ownership

Additional Topics/Documentation/Version and QC

Topic Keywords DOME SWAMP

Reference Code **Citation Primary**
 F04JOH01FLUS Johnson, Peter. 2004. FNAI field report form for *Litsea aestivalis*. Y
 PNDTAN01FLUS TANCIG, MARK. FIELD BOTANIST. FLORIDA NATURAL AREAS INVENTORY. 1018 N THOMASVILLE RD.
 SUITE 200-C. TALLAHASSEE, FL. 32303. (850) 224-8207. MTANCIG@FNAI.ORG

Version	mkt	Date	8/30/2004	Transcribed By	mkt	Date	8/30/2004
Author							
Paper Mapping By		Date		Digital Mapping By	mkt	Date	8/30/2004
Data QC Status	Passed	QC By	amj	Map QC Status	Passed	QC By	amj

Element Occurrence Record

2009-11-23

Litsea aestivalis EO Number **22** **29217**EO_ID

Identification/Location

ID Confirmed Y - Yes **Data Sensitive EO** N **Data Sensitive Element** N

Site ID and Name

Survey Site Name Ocala National Forest

Directions 1996-03-05: Less than 1 mile north of FR 75 to Woods Road. East side of SR-19, Follow bayhead on north side of road to high pine (longleaf pine) on south side of woods road. Depression pond in longleaf pine area just off Woods

Road (S96MILUFFLUS). Putnam (FL) County

Welaka USGS quad (7.5 min)

Latitude	Longitude
29263margnum	1N 0814350W 2908146
quadcode	

012S026ETRS Town/range 019Sect.

Watershed 03080101 - Upper St. Johns

EO Representation and Sources

EO Rep Accuracy (est.) Very High

EO Rep Edited? N

Confidence ? - Uncertain whether full extent of EO is known

Extent

Add'l Inventory Needed Y

Src Features Descriptor (obs data below, if present)	Locator	Conc. Type	Unc. Type	Distance	Loc. Use
41721 Point 1: Jim Surdick, 2009 <i>Litsea</i> Survey	Ocala National Forest	Point	Negligible		

2009-07-28 Surdick, Jim 1, <0.5m seedling/ burned approx 2 yrs ago. In basin marsh with forestry operations and Taxod 41722 Point 2: Jim Surdick, 2009 *Litsea* Survey Ocala National Forest Point Negligible

2009-07-28 Surdick, Jim 24 plants observed/ 8 with fruit/ 8, <0.5m/ 4, 1m/ 12, 2-3m in fruit. Fruits just

starting to turn re

Survey Information/EO Rank/Description

Surveyor(s) 1996. Miller, Lorraine 2009. Surdick, Jim

Survey Date 2009-07-28 **First Obs Date** 1996-03-05 **Last Obs Date** 2009-07-28

EO Data 2009-07-28: 25 plants in two discrete areas. See Source Observations Tab for detailed information at each area (F09FNA02FLUS). 1996-03-05: Seven plants in or at water's edge; 4' - 10' multi-trunked shrubs in flower (S96MILUFFLUS).

Basic EO Rank BC -Good or fair estimated viability **EO Rank Date** 2009-07-28

EO Rank Comment Moderate sized population in habitat with moderate disturbances (PNDJEN03FLUS).

General Description 2009-07-28: Depression and basin marsh. See Source Observations Tab for detailed information at each area (F09FNA02FLUS). 1996-03-05: Depression pond in longleaf pine area surrounded 3/4 of the way by *Pinus palustris* and 1/4 of the way by *Pinus clausa*. Water over decomposing vegetation. Associated species include *Quercus virginiana*, *Quercus myrtifolia*, and *Vaccinium corymbosum* (S96MILUFFLUS).

Protection/Management/Ownership

MA ID	Managed Area Name	Type	Contained
247	Ocala National Forest	FFSNF	Y - Yes

Additional Topics/Documentation/Version and QC

Topic Keywords BASIN MARSH DEPRESSION MARSH

Reference Code Citation Primary

S96MILUFFLUS Specimen deposited with museum, herbarium, or private collection. N
PNDMIL09FLUS Miller, Lorraine. Botanist. Invasive Species Management Section of the U.S. Army Corps of N Engineers. Palatka Field Office, 602 North Palm Ave., Palatka FL 32177. Office phone number (386) 328-2737. Office fax (386) 328-1298. Home number (352) 546-2962. Email is Lorraine.A.Miller@saj02.usace.army.mil
F09FNA02FLUS Florida Natural Areas Inventory. 2009. Status survey of *Litsea aestivalis* in northeast Florida. Y Florida Natural Areas Inventory. Tallahassee, Florida. Survey conducted by Jim Surdick. PNDJEN03FLUS Jenkins, Amy Miller. Senior Botanist. Florida Natural Areas Inventory, 1018 Thomasville N Road Suite 200C, Tallahassee, Florida 32303. amjenkins@fnai.org PNDSDUR01FLUS Surdick, James. Florida Natural Areas Inventory. 1018 Thomasville Road, Suite 200C, N Tallahassee, FL 32303. 352-374-8650. <jsurdick@fnai.org>

Specimen Miller, L. 1996. #188872 UF.

Version	Jenkins, A.M.	Date	8/7/2009	Transcribed By	amj	Date	9/27/2004
Author							
Paper Mapping By		Date		Digital Mapping By	amj	Date	9/27/2004
Data QC Status	Passed	QC By	swm	Map QC Status	Passed	QC By	swm

Element Occurrence Record

2009-11-23

Litsea aestivalis

EO Number

24

34578EO_ID

Identification/Location

ID Confirmed Y - Yes **Data Sensitive** EO N **Data Sensitive** Element N **Site ID and Name** Directions

2009-07-22: Approximately 0.9 miles by air west of SR 9A within a residential development. In a wetland

surrounded by houses (PNDJEN03FLUS).

County Duval (FL)

USGS quad (7.5 min) Bayard

003S028ETRS Town/range 018Sect.

Watershed 03080103 - Lower St. Johns

Latitude 301424N
marginum

Longitude 0813146W
quadcode 3008125

EO Representation and Sources

EO Rep Accuracy (est.) Very High EO Rep Edited? N Confidence Extent N - Confident full extent of EO is NOT known

YAdd'l Inventory Needed Src Features Descriptor

(obs data below, if present) Jim Surdick, 2009 Litsea survey 41520

Locator

Conc. Type Unc. Type
Point Negligible

Distance

Loc.
Use

Survey Information/EO Rank/Description

Survey Date 2008-11-25 First Obs Date 2008-11-25 Last Obs Date 2008-11-25 EO Data 2008-11-25: 51-100 plants in flower/bud. Approximately 40% of shrubs have signs of Laurel Wilt or are dead

(F09FNA02FLUS). Condition of EO Poor, approximately 40% of shrubs have signs of LW or are dead (F09FNA02FLUS). Size of EO Moderate Landscape Context surrounded by development Basic EO Rank D -Poor estimated viability EO Rank Date 2008-11-25 EO Rank Comment EO is danger of extirpation because of Laurel Wild Disease (PNDJEN03FLUS). General Description 2008-11-25: Dome swamp with fire suppression (F09FNA02FLUS).

Protection/Management/Ownership

Owner Type Unknown Name Note

Additional Topics/Documentation/Version and QC

Topic Keywords DOME SWAMP

Reference Code Citation Primary

F09FNA02FLUS Florida Natural Areas Inventory. 2009. Status survey of Litsea aestivalis in northeast Florida. Y Florida Natural Areas Inventory. Tallahassee, Florida. Survey conducted by Jim Surdick.

PNDSUR01FLUS Surdick, James. Florida Natural Areas Inventory. 1018 Thomasville Road, Suite 200C, N Tallahassee, FL 32303. 352-374-8650. <jsurdick@fnai.org>

PNDJEN03FLUS Jenkins, Amy Miller. Senior Botanist. Florida Natural Areas Inventory, 1018 Thomasville N Road Suite 200C, Tallahassee, Florida 32303. amjenkins@fnai.org

Version Jenkins, A.M. Date 7/22/2009 Transcribed By Jenkins, A.M. Date 7/22/2009

Author Paper Mapping By Date Digital Mapping By amj Date 7/22/2009

Data QC Status Passed QC By aed Map QC Status Passed QC By aed

Element Occurrence Record

2009-11-23

Litsea aestivalis

EO Number

25

34587EO_ID

Identification/Location

ID Confirmed Y - Yes Data Sensitive EO N Data Sensitive Element N Site ID and Name Directions 2009-07-23: In the middle of Guana River Wildlife Management Area just west of main N-S road

(PNDNIP01FLUS).

County St. Johns (FL)

Latitude 300534N

Longitude 0812119W

USGS quad (7.5 min) South Ponte Vedra Beach

margnum

quadcode 3008113

005S029ETRS Town/range 038**Sect.**

005S029E 011

Watershed 03080201 - Daytona - St. Augustine

EO Representation and Sources

EO Rep Accuracy (est.) Very High

EO Rep Edited? N

Confidence ? - Uncertain whether full extent of EO is known

Extent

Add'l Inventory Needed N

Src Features Descriptor (obs data below, if present)	Locator	Conc. Type	Unc. Type	Distance	Loc. Use
41532 Point 1. Jim Surdick 2009. Litsea survey.	Guana River WMA	Point	Negligible		

2009-02-25 Jim Surdick One 4' bush in flower, a few dead branches otherwise looks healthy. Depression Marsh with ass 41533 Point 2. Jim Surdick 2009. Litsea survey Guana River WMA Point Negligible

2009-02-25 Jim Surdick Two 10' bushes in flower alive but dead stems with brown leaves-took sample. Laurel Wilt in ar 41534 Point 3. Jim Surdick 2009. Litsea survey. Guana River WMA Point Negligible

2009-02-25 Jim Surdick One 8' bush in flower, a few dead branches with ambrosia beetle holes. Depression Marsh with

Survey Information/EO Rank/Description

Surveyor(s) Jim Surdick **Survey Date** 2009-02-25 **First Obs Date** 2009-02-25 **Last Obs Date** 2009-02-25 **EO Data** 2009-02-25: EO consists of plants in 3 distinct areas totalling 4 plants. Some plants have dead branches and

ambrosia beetle holes. Laurel Wilt in the area. For detailed information at each source point see Source

Observations Tab (F09FNA02FLUS). **Basic EO Rank** D? - Possibly poor estimated viability **EO Rank Date** 2009-02-25 **EO**

Rank Comment Signs of Laurel Wilt in area and small population (PNDNIP01FLUS).

General Description **2009-02-25: Depression Marsh. For detailed information at each source point see Source Observations Tab (F09FNA02FLUS).**

Protection/Management/Ownership

MA ID Managed Area Name

520 Guana River Marsh Aquatic Preserve

277 Guana River Wildlife Management Area SFWWM Y - Yes **More Management** Y - Yes **Management Comments** Fire suppression noted (PNDSUR01FLUS).

Type Contained

SCAAP Y - Yes

Additional Topics/Documentation/Version and QC

Topic Keywords DEPRESSION MARSH

Reference Code Citation

Primary

F09FNA02FLUS Florida Natural Areas Inventory. 2009. Status survey of *Litsea aestivalis* in northeast Florida. Y
 Florida Natural Areas Inventory. Tallahassee, Florida. Survey conducted by Jim Surdick.
 PNDNIP01FLUS Surdick, James. Florida Natural Areas Inventory. 1018 Thomasville Road,
 Suite 200C, N Tallahassee, FL 32303. 352-374-8650. <jsurdick@fnai.org>

PNDNIP01FLUS Nipp, Kelly. Field Biologist. Florida Natural Areas Inventory. Tallahassee, FL. N knipp@fnai.org.

Version	Nipp, K.L.	Date	7/23/2009	Transcribed By	Nipp, K.L.	Date	7/23/2009
Author							
Paper Mapping By		Date		Digital Mapping By	swm	Date	7/23/2009
Data QC Status	Passed	QC By	amj	Map QC Status	Passed	QC By	amj

Element Occurrence Record

2009-11-23

Litsea aestivalis EO Number **26** **34588**EO_ID

Identification/Location

ID Confirmed Y - Yes

Data Sensitive EO N **Data Sensitive Element** N

Site ID and Name 4398 Twelve Mile Swamp Florida Forever BOT Project

Directions

County St. Johns (FL)

Latitude 295902N

Longitude 0812355W

USGS quad (7.5 min) Bakersville

margnum

quadcode 2908184

006S029ETRS Town/range 017Sect.

Watershed 03080201 - Daytona - St. Augustine

EO Representation and Sources

EO Rep Accuracy (est.) Very High **EO Rep Edited?** N **Confidence Extent** ?

- Uncertain whether full extent of EO is known **Add'l Inventory Needed**

Src Features Descriptor (obs data below, if present) Locator Surdick, Jim.

Litsea aestivalis Survey Gwana River WMA 41535

Conc. Type Polygon **Unc. Type** Negligible

Distance **Loc. Use**

Survey Information/EO Rank/Description

Survey Type/Note Qualitative ground survey **Survey Date** 2008-11-17 **First Obs Date** 2008-11-17 **Last Obs Date** 2008-11-17 **EO Data** 2008-11-17: 100-1000 plants in flower/bud. Approximately 30% *Litsea aestivalis* with Laurel Wilt (brown

persisting leaves) more *Litsea aestivalis* on edge infected, some bays present (approx 40), with Laurel Wilt (F09FNA02FLUS). **Condition of EO** 2009-11-17: Approximately 30% *Litsea aestivalis* with Laurel Wilt (brown persisting leaves) more *Litsea*

aestivalis on edge infected, some bays present (approx 40), with Laurel Wilt (F09FNA02FLUS).

Landscape Context Large basin marsh near road **Basic EO Rank** CD -Fair or poor estimated viability **EO Rank**

Date 2008-11-17

General Description 2008-11-17: Basin marsh with ditch/canal, forestry operations, hog digging. Former wet flatwoods?/ planted pines in drained dome swamp? (F09FNA02FLUS).

Protection/Management/Ownership

Additional Topics/Documentation/Version and QC

Topic Keywords	BASIN SWAMP DOME SWAMP WET FLATWOODS	
Reference Code	Citation	Primary
F09FNA02FLUS	Florida Natural Areas Inventory. 2009. Status survey of <i>Litsea aestivalis</i> in northeast Florida. Florida Natural Areas Inventory. Tallahassee, Florida. Survey conducted by Jim Surdick.	Y
PNDSUR01FLUS	Surdick, James. Florida Natural Areas Inventory. 1018 Thomasville Road, Suite 200C, Tallahassee, FL 32303. 352-374-8650. <jsurdick@fnai.org>	N
PNDMCA02FLUS	McAllister, Steven. Field Biologist. Florida Natural Areas Inventory. Tallahassee, FL. smcallister@fnai.org.	N

Version Author McAllister, S. W. Date 7/23/2009 Transcribed By McAllister, S. W. Date 7/23/2009 Paper Mapping By Date Digital Mapping By swm Date 7/23/2009 Data QC Status Passed QC By amj Map QC Status Passed QC By amj

Element Occurrence Record

2009-11-23

Litsea aestivalis EO Number 27 34662EO_ID

Identification/Location

ID Confirmed Y - Yes Data Sensitive EO N Data Sensitive Element N

Site ID and Name

Directions Columbia (FL) County Deep CreekUSGS quad (7.5 min)

Latitude 302014N margnum Longitude 0823436W quadcode 3008235

TRS Town/range 002S017E Sect. 011 Watershed 03110201 - Upper Suwannee

EO Representation and Sources

EO Rep Accuracy (est.) Very High EO Rep Edited? N Confidence Extent ? -

Uncertain whether full extent of EO is known YAdd'l Inventory Needed Src

Features Descriptor (obs data below, if present) Locator Surdick, Jim 2009 Litsea Survey Osceola National Forest41686

Conc. Type Unc. Type Loc. Point Negligible Distance Use

Survey Information/EO Rank/Description

Survey Date 2009-07-23 First Obs Date 2009-07-23 Last Obs Date 2009-07-23

EO Data 2009-07-23: 7 plants observed with 3 in fruit. No signs of Laurel Wilt (F09FNA02FLUS).

Basic EO Rank C - Fair estimated viability **EO Rank Date** 2009-07-23

EO Rank Comment Small population in somewhat disturbed habitat (PNDJEN03FLUS).

General Description 2009-07-23: Depression marsh with forestry operations and ORV Trail. Associates include *Pinus elliottii*, *Nyssa biflora*, *Lyonia lucida*, *Persea palustris*, *Rhynchospora* sp., *Panicum hemitomon*, *Carya glabra*, and *Andropogon* sp. (F09FNA02FLUS).

Protection/Management/Ownership

MA ID	Managed Area Name	Type	Contained
246	Osceola National Forest	FFSNF	Y - Yes

Additional Topics/Documentation/Version and QC

Topic Keywords DEPRESSION MARSH

Reference Code	Citation Primary
F09FNA02FLUS	Florida Natural Areas Inventory. 2009. Status survey of <i>Litsea aestivalis</i> in northeast Florida. Y Florida Natural Areas Inventory. Tallahassee, Florida. Survey conducted by Jim Surdick.
PNDSUR01FLUS	Surdick, James. Florida Natural Areas Inventory. 1018 Thomasville Road, Suite 200C, N Tallahassee, FL 32303. 352-374-8650. <jsurdick@fnai.org>
PNDJEN03FLUS	Jenkins, Amy Miller. Senior Botanist. Florida Natural Areas Inventory, 1018 Thomasville N Road Suite 200C, Tallahassee, Florida 32303. amjenkins@fnai.org

Version	Jenkins, A.M.	Date	8/5/2009	Transcribed By	Jenkins, A.M.	Date	8/5/2009
Author							
Paper Mapping		Date		Digital Mapping By	amj	Date	8/5/2009
By							
Data QC	Passed	QC By	kln	Map QC Status	Passed	QC By	kln
Status							

Element Occurrence Record

2009-11-23

Litsea aestivalis EO Number 28 34670EO_ID

Identification/Location

ID Confirmed Y - Yes **Data Sensitive EO** N **Data Sensitive Element** N **Site ID and Name** 1560 Pumpkin Hill Creek Florida Forever BOT Project

Directions

County	Duval (FL)	Latitude	302812N	Longitude	0813013W
USGS quad (7.5 min)	Eastport	margnum		quadcode	3008145
	Mayport	margnum			3008144

001N028ETRS Town/range	Sect.	033
001N028E		028

Watershed 03070205 - Nassau
03080103 - Lower St. Johns

EO Representation and Sources

EO Rep Accuracy (est.) Very High

EO Rep Edited? N

Confidence ? - Uncertain whether full extent of EO is known

Extent

Add'l Inventory Needed N

Src Features Descriptor (obs data below, if present)	Locator	Conc. Type	Unc. Type	Distance	Loc. Use
41705 Point 2: Jim Surdick, Litsea Survey	Pumpkin Hill Preserve	Point	Negligible		

2009-05-14 Jim Surdick 5 large dead plants with no resprouts/ 30 large healthy plants. Fruit is green and sparse on few 41704 Point 1: Jim Surdick, Litsea Survey Pumpkin Hill Preserve Point Negligible

2009-05-14 Jim Surdick 1 plant 3m high, healthy, no Persea thus no Laurel Wilt evidence. In dome swamp with heavy h 41706 Point 3: Jim Surdick, Litsea Survey Pumpkin Hill Preserve Point Negligible

2009-05-14 Jim Surdick 20 large dead with small resprouts/ 20 large healthy/ 40? resprouts. Fruit is green and sparse on 41707 Point 4: Jim Surdick, Litsea Survey Pumpkin Hill Preserve Point Negligible

2009-05-14 Jim Surdick Six 2m shrubs, no sign of Laurel Wilt. Dome swamp with hog digging. Hog rooting is so bad s 41708 Point 5: Jim Surdick, Litsea Survey Pumpkin Hill Preserve Point Negligible

2009-05-14 Jim Surdick 2-10 plants in leaf. Top killed by fire when flowering, resprouting. Dome swamp with modera

Survey Information/EO Rank/Description

Surveyor(s) Surdick, Jim

Survey Date 2009-05-14 **First Obs Date** 2009-05-14 **Last Obs Date** 2009-05-14

EO Data 2009-05-14: 99-107 plants in 5 discrete locations. For detailed information at each location see Source Observation Tab (F09FNA02FLUS).

Basic EO Rank AC - Excellent, good, or fair estimated viability **EO Rank Date** 2009-05-14

EO Rank Comment Large population with some dead plants. Could be subject to Laurel Wilt as it is in the center of the disease zone (PNDJEN03FLUS).

General Description 2009-05-14: Dome swamp with hog digging. For detailed information at each location see Source Observation Tab (F09FNA02FLUS).

Protection/Management/Ownership

MA ID Managed Area Name

Type Contained

216 Pumpkin Hill Creek Preserve State Park SRPSV **More Management** Y - Yes **Management Comments** Lots of hog digging in this area (F09FNA02FLUS).

Additional Topics/Documentation/Version and QC

Topic Keywords DOME SWAMP

Reference Code **Citation Primary**

F09FNA02FLUS Florida Natural Areas Inventory. 2009. Status survey of *Litsea aestivalis* in northeast Florida. Y Florida Natural Areas Inventory. Tallahassee, Florida. Survey conducted by Jim Surdick.

PNDSUR01FLUS Surdick, James. Florida Natural Areas Inventory. 1018 Thomasville Road, Suite 200C, N Tallahassee, FL 32303. 352-374-8650. <jsurdick@fnai.org>

PNDJEN03FLUS Jenkins, Amy Miller. Senior Botanist. Florida Natural Areas Inventory, 1018 Thomasville N Road Suite 200C, Tallahassee, Florida 32303. amjenkins@fnai.org

Version Jenkins, A.M. **Date** 8/6/2009 **Transcribed By** Jenkins, A.M. **Date** 8/6/2009

Author

Paper Mapping By	Date	Digital Mapping By amj	Date 8/6/2009
Data QC Status	Passed QC By swm	Map QC Status	Passed QC By swm

Element Occurrence Record

2009-11-23

Litsea aestivalis EO Number **29** **34673**EO_ID

Identification/Location

ID Confirmed Y - Yes

Data Sensitive EO N **Data Sensitive Element** N

Site ID and Name 1560 Pumpkin Hill Creek Florida Forever BOT Project

Directions

County Duval (FL)

Latitude 302712N

Longitude 0813002W

USGS quad (7.5 min) Eastport

margnum

quadcode 3008145

001S028ETRS Town/range 004Sect.

Watershed 03080103 - Lower St. Johns

EO Representation and Sources

EO Rep Accuracy (est.) Very High **EO Rep Edited?** N **Confidence Extent ?**

- Uncertain whether full extent of EO is known N **Add'l Inventory Needed**

Src Features Descriptor (obs data below, if present) **Locator** Jim Surdick, 2009

Litsea Survey Pumpkin Hill Preserve 41713

Conc. Type **Unc. Type**
Point Negligible

Distance

Loc. Use

Survey Information/EO Rank/Description

Survey Date 2009-05-14 **First Obs Date** 2009-05-14 **Last Obs Date** 2009-05-14 **EO Data** 2009-05-14: 2-10 plants in leaf. 4m shrubs, signs of Laurel Wilt on Persea and Litsea. Took sample from a brown leaved Litsea (F09FNA02FLUS). **Basic EO Rank** C? - Possibly fair estimated viability **EO Rank Date** 2009-05-14 **EO Rank Comment** Small population in area with Laurel Wilt (PNDJEN03FLUS). **General Description** 2009-05-14: Dome swamp with moderate fire suppression (F09FNA02FLUS).

Protection/Management/Ownership

MA ID	Managed Area Name	Type	Contained
216	Pumpkin Hill Creek Preserve State Park	SRPSV	Y - Yes
Owner	Private organization Type	The Nature Conservancy Name	
	Note		

Additional Topics/Documentation/Version and QC

Topic Keywords DOME SWAMP

Reference Code **Citation Primary**
 F09FNA02FLUS Florida Natural Areas Inventory. 2009. Status survey of *Litsea aestivalis* in northeast Florida. Y Florida Natural Areas Inventory. Tallahassee, Florida. Survey conducted by Jim Surdick.
 PNDJEN03FLUS Jenkins, Amy Miller. Senior Botanist. Florida Natural Areas Inventory, 1018 Thomasville N Road Suite 200C, Tallahassee, Florida 32303. amjenkins@fnai.org
 PNDSUR01FLUS Surdick, James. Florida Natural Areas Inventory. 1018 Thomasville Road, Suite 200C, N Tallahassee, FL 32303. 352-374-8650. <jsurdick@fnai.org>

Version Jenkins, A.M. **Date** 8/6/2009 **Transcribed By** Jenkins, A.M. **Date** 8/6/2009
Author
Paper Mapping **Date** **Digital Mapping By** amj **Date** 8/6/2009
By
Data QC Passed **QC By** swm **Map QC Status** Passed **QC By** swm
Status

Element Occurrence Record

2009-11-23

Litsea aestivalis EO Number 30 34674EO_ID

Identification/Location

ID Confirmed Y - Yes **Data Sensitive EO** N **Data Sensitive Element** N
Site ID and Name Directions County Putnam (FL) **Latitude** 292712N **Longitude** 0814404W **USGS quad (7.5 min)** Welaka **margnum**
quadcode 2908146
TRS Town/range 012S026E **Sect.** 018 **012S026E** 045 **Watershed**
 03080101 - Upper St. Johns

EO Representation and Sources

EO Rep Accuracy (est.) High **EO Rep Edited?** N **Confidence Extent** ? - Uncertain whether full extent of EO is known

NAdd'l Inventory Needed Src Features Descriptor
(obs data below, if present) Jim Surdick, 2009 *Litsea* Survey
 41714

Locator Ocala **Conc. Type** Unc. Type **Distance** **Loc. Use**
 National Forest Polygon Negligible

Survey Information/EO Rank/Description

Survey Date 2009-07-28 **First Obs Date** 2009-07-28 **Last Obs Date** 2009-07-28
EO Data 2009-07-28: 1, 2m plant, 5 of 10 stems dead, 1, 4m high plant, 20 stems, 2 dead stems, otherwise healthy, sparse fruits (F09FNA02FLUS).
Basic EO Rank CD -Fair or poor estimated viability **EO Rank Date** 2009-07-28
EO Rank Comment Small population with possible laurel wilt (PNDJEN03FLUS).
General Description 2009-07-28: depression marsh with forestry operations surrounded by mesic flatwoods and wet flatwoods/ no persea present. Vegetative associates include *Pinus elliotii*, *Pinus serotina*, *Serenoa repens*, *Vaccinium coriaceum*, *Lyonia lucida*, *Ilex glabra*, *Panicum hemitomon*, *Woodwardia virginica*, *Eriocaulon decangulare*, *Sphagnum*. No evidence of Laurel Wilt (F09FNA02FLUS).

Protection/Management/Ownership

MA ID	Managed Area Name	Type	Contained
247	Ocala National Forest	FFSNF	Y - Yes

Additional Topics/Documentation/Version and QC

Topic Keywords DEPRESSION MARSH

Reference Code	Citation Primary
F09FNA02FLUS	Florida Natural Areas Inventory. 2009. Status survey of <i>Litsea aestivalis</i> in northeast Florida. Y Florida Natural Areas Inventory. Tallahassee, Florida. Survey conducted by Jim Surdick.
PNDSUR01FLUS	Surdick, James. Florida Natural Areas Inventory. 1018 Thomasville Road, Suite 200C, N Tallahassee, FL 32303. 352-374-8650. <jsurdick@fnai.org>
PNDJEN03FLUS	Jenkins, Amy Miller. Senior Botanist. Florida Natural Areas Inventory, 1018 Thomasville N Road Suite 200C, Tallahassee, Florida 32303. amjenkins@fnai.org

Version	Jenkins, A.M.	Date	8/6/2009	Transcribed By	Jenkins, A.M.	Date	8/6/2009
Author							
Paper Mapping By		Date		Digital Mapping By	amj	Date	8/6/2009
Data QC Status	Passed	QC By	swm	Map QC Status	Passed	QC By	swm

Element Occurrence Record

2009-11-23

Litsea aestivalis EO Number **31** **34849**EO_ID

Identification/Location

ID Confirmed Y - Yes
Site ID and Name

Data Sensitive EO N **Data Sensitive Element** N

Directions Ocala National Forest: 2009-10-21:Putnam County; from the jcn of OFR-77 and SR-19 travel south for approximately 2.8 miles and turn west on a unnamed forest survice road; travel approximately 0.9 miles; the

wetlands are south of this road.

County	Putnam (FL)	Latitude	292549N	Longitude	0814515W
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USGS quad (7.5 min)	Lake Delancy	margnum		quadcode	2908147
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012S025ETRS Town/range 024**Sect.**

Watershed 03080101 - Upper St. Johns

EO Representation and Sources

EO Rep Accuracy (est.) Very High

EO Rep Edited? N

Confidence ? - Uncertain whether full extent of EO is known

Extent

Add'l Inventory Needed Y

Src Features Descriptor (obs data below, if present)	Locator	Conc. Type	Unc. Type	Distance	Loc. Use
42121 Point 1: Jim Surdick, 2009 Litsea Survey	Ocala National Forest	Point	Negligible		

2009-10-21 Jim Surdick Eight large plants and a few seedlings observed. Depression marsh with forestry operations. As 42126 Point 2: Jim Surdick, 2009 Litsea Survey Ocala National Forest Point Negligible
 2009-10-21 Jim Surdick 2-10 plants in leaf in depression marsh with forestry operations and ORV trail. Associated plant

Survey Information/EO Rank/Description

Survey Date 2009-10-21 **First Obs Date** 2009-10-21 **Last Obs Date** 2009-10-21
EO Data 2009-10-21: 10-18 plants seen at two distinct locations plus a few seedlings observed. Brenda Herring had observed this population in the past. For detailed information at each source point see Source Observation Tab (F09FNA02FLUS).
Basic EO Rank BC -Good or fair estimated viability **EO Rank Date** 2009-10-21
EO Rank Comment Small population protected on managed area (PNDJEN03FLUS).
General Description 2009-10-21: Depression marsh with forestry operations. For detailed information at each source point see Source Observation Tab (F09FNA02FLUS).

Protection/Management/Ownership

MA ID	Managed Area Name	Type	Contained
247	Ocala National Forest	FFSNF	Y - Yes

Additional Topics/Documentation/Version and QC

Topic Keywords DEPRESSION MARSH

Reference Code **Citation Primary**
 F09FNA02FLUS Florida Natural Areas Inventory. 2009. Status survey of Litsea aestivalis in northeast Florida. Y Florida Natural Areas Inventory. Tallahassee, Florida. Survey conducted by Jim Surdick.
 PNDJEN03FLUS Jenkins, Amy Miller. Senior Botanist. Florida Natural Areas Inventory, 1018 Thomasville N Road Suite 200C, Tallahassee, Florida 32303. amjenkins@fnai.org
 PNDSUR01FLUS Surdick, James. Florida Natural Areas Inventory. 1018 Thomasville Road, Suite 200C, N Tallahassee, FL 32303. 352-374-8650. <jsurdick@fnai.org>

Version	Jenkins, A.M.	Date	11/4/2009	Transcribed By	Jenkins, A.M.	Date	11/4/2009
Author							
Paper Mapping By		Date		Digital Mapping By	amj	Date	11/4/2009
Data QC Status	Passed	QC By	aed	Map QC Status	Passed	QC By	aed

Element Occurrence Record

2009-11-23

Litsea aestivalis EO Number 33 34880EO_ID

Identification/Location

ID Confirmed Y - Yes
Site ID and Name

Data Sensitive EO N **Data Sensitive Element** N

Directions Mill Creek Nature Preserve: 2008-12-04: at the intersection of CR-236 and CR-241, travel west on CR-236 for 0.3 miles and turn south on an unnamed dirt road; travel about 0.1 miles park and walk east for about 0.2 miles.

County Alachua (FL) **Latitude** 295243N **Longitude** 0822942W
USGS quad (7.5 min) Worthington Springs **margnum** **quadcode** 2908284
007S018ETRS Town/range Sect. 015
Watershed 03110206 - Santa Fe

EO Representation and Sources

EO Rep Accuracy (est.) Very High

EO Rep Edited? N

Confidence ? - Uncertain whether full extent of EO is known

Extent

Add'l Inventory Needed Y

Src Features present)	Descriptor (obs data below, if present)	Locator	Conc.	Type	Unc. Type	Distance	Loc. Use
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41116	Litsea aestivalis Survey 2008-09	Mill Creek	Point		Negligible		
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2008-12-04 Jim Surdick 11-50 plants in flower/bud. Some dead and dying may have laurel wilt, *Persea* in area without s

Survey Information/EO Rank/Description

Survey Date 2008-12-04 **First Obs Date** 2008-12-04 **Last Obs Date** 2008-12-04 **EO Data** 2008-12-04: 11-50 plants in flower/bud. Some dead and dying may have laurel wilt, *Persea* in area without signs of laurel wilt. Mostly on forested fringe of southern half of depression marsh (U09SUR01FLUS). **Basic EO Rank** BC -Good or fair estimated viability **EO Rank Date** 2008-12-04 **EO Rank Comment** Moderate sized populatlon but with possible signs of laurel Wilt Disease (PNDJEN03FLUS). **General Description** 2008-12-04: Mostly on forested fringe of southern half of depression marsh (U09SUR01FLUS).

Protection/Management/Ownership

MA ID	Managed Area Name	Type	Contained
1634	Mill Creek Nature Preserve	LALAL	Y - Yes

Additional Topics/Documentation/Version and QC

Topic Keywords DEPRESSION MARSH

Reference Code	Citation Primary
F09FNA02FLUS	Florida Natural Areas Inventory. 2009. Status survey of <i>Litsea aestivalis</i> in northeast Florida. Y Florida Natural Areas Inventory. Tallahassee, Florida. Survey conducted by Jim Surdick.
PNDJEN03FLUS	Jenkins, Amy Miller. Senior Botanist. Florida Natural Areas Inventory, 1018 Thomasville N Road Suite 200C, Tallahassee, Florida 32303. amjenkins@fnai.org
PNDSUR01FLUS	Surdick, James. Florida Natural Areas Inventory. 1018 Thomasville Road, Suite 200C, N Tallahassee, FL 32303. 352-374-8650. <jsurdick@fnai.org>

Version	Jenkins, A.M.	Date	Transcribed By 11/16/2009	Jenkins, A.M.	Date	11/16/2009	
Author							
Paper Mapping		Date	Digital Mapping By amj		Date	11/16/2009	
By							
Data QC	Passed	QC By	aed	Map QC Status	Passed	QC By	aed
Status							