

**Wetland Rapid Assessment Procedure
and
Floristic Quality Index Assessment
D'Olive Creek Watershed**



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Prepared for

Mobile Bay National Estuary Program

By

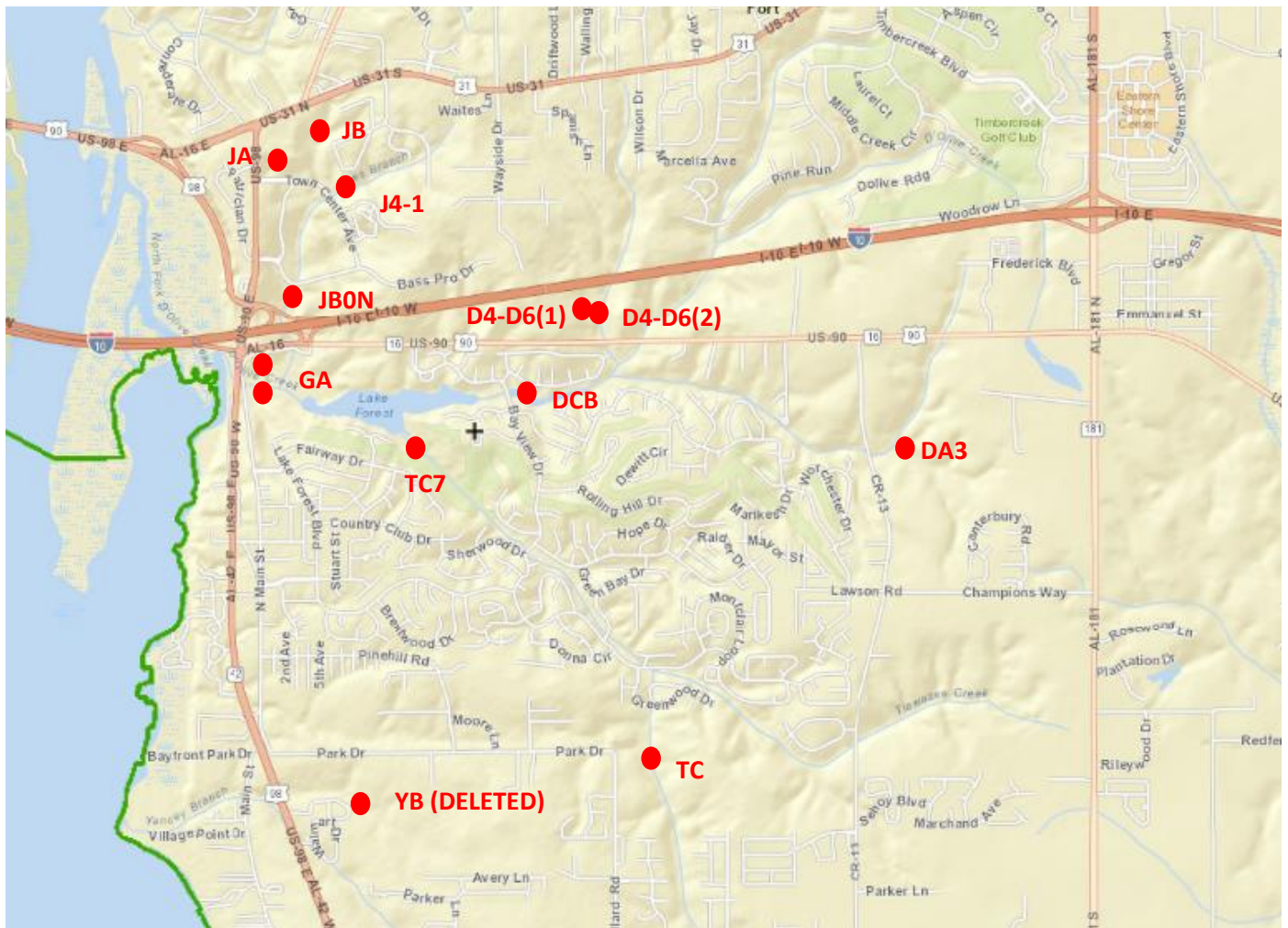


Wetland Rapid Assessment Procedure and Floristic Quality Index Assessment D'Olive Creek Watershed

Introduction

The Mobile Bay National Estuary Program (MBNEP) has contracted with Wetland Resources Environmental Consulting to conduct functional assessment of wetlands using Wetland Rapid Assessment Procedure (WRAP) and floristic assessments within those same wetlands using a Floristic Quality Index (FQI).

Assessments have been conducted within 11 areas pre-selected by MBNEP Science Advisory Committee, with input from the city of Daphne and Wetland Resources, that occur in the D'Olive Creek watershed. One high-quality reference site along the North Fork of Yancey Branch was also included the first year of this assessment, but was deleted from this year's assessment. Assessment areas are 50 meters in length along selected stream corridor segments and extend laterally to the approximate wetland/upland boundary where feasible. Assessments were conducted during mid- to late November 2016.



Wetland Rapid Assessment Procedure

WRAP is a functional assessment procedure developed by the South Florida Water Management District for use in south Florida, but this procedure is used extensively in south Alabama by the U.S. Army Corps of Engineers and the Alabama Dept. of Environmental Management for wetland regulatory purposes, and by environmental consultants and scientists who work within the wetland regulatory realm. (Technical Publication REG-001, Wetland Rapid Assessment Procedure (WRAP); by Raymond E. Miller Jr. and Boyd E. Gunsalus; September 1997; last updated August 1999.) WRAP includes six variables that are assessed and scored independently of each other in order to come up with an overall score. A variable score of 3 is considered the best a system can function and a 0 is for a system that is severely impacted and is exhibiting negligible attributes. An evaluator has the option of scoring each variable in half (0.5) increments. The overall score is expressed as a percentage, ranging from 0% - 100%. Within the Mobile District wetland regulatory realm, WRAP scores of 0-50% are considered low quality wetlands; 51-75% are medium quality; and greater than 75% are high quality. WRAP variables include the following:

- Wildlife Utilization
- Wetland Overstory/Shrub Canopy
- Wetland Vegetative Groundcover
- Adjacent Upland Support/Wetland Buffer
- Field Indicators of Wetland Hydrology
- Water Quality Input and Treatment Systems

Floristic Quality Index

The Southeast Wetlands Workgroup (SEWWG) consists of participants representing state and federal personnel and scientists from Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee. This membership focuses on both users and developers of wetland monitoring and assessment tools (<https://sewwg.rti.org/Default.aspx>). The SEWWG website includes the following background information concerning FQI and Coefficients of Conservatism:

This workgroup is funded by an EPA Region 4 Wetland Program Development Grant issued to the North Carolina Department of Environment and Natural Resources. One of the objectives on this grant is to gather expert botanists from across the Southeast Region for the purposes of developing a database of wetland plant quality ratings, called Coefficients of Conservatism. Coefficient of Conservatism values (C values) are used in the calculation of Floristic Quality Index as indicators of habitat quality. Average C value of a study site is also a useful indicator.

This rating system was originated by Gerould Wilhelm in the 1970s in response to NEPA regulations as a way of measuring the degree to which impact to an area is irreversible or irretrievable. Guidance for the application of this rating system was published in 1997 by Taft et al., and it is becoming widely adopted across the country as a means of facilitating site quality assessments. These Coefficients vary from 0-10, and indicate the degree to which a species is found growing in unique environmental conditions. Plants are given a low rating if they are able to tolerate a very wide range of conditions and are found in a variety of habitats/locations. A high rating is given to species which have very specific requirements and cannot exist outside of those conditions. Non-native species are generally given a rating of zero.

A Floristic Quality Index Calculator tool is also found at this website and was used to determine FQI for each of the eleven plots included in this assessment. Once plant species found in each assessment area have been entered into the calculator, a table with the following information is generated:

Metric	Explanation
Total number of species with assigned C-values (N)	The total number of species with a C-value assigned to that species. Note: Upland species and 1% of wetland species were not assigned C-values.
Mean Coefficient of Conservatism (C)	The mean C-value for all species. (Calculation includes only species with assigned C-values).
Mean C (native species only)	The mean C-value for native species. (Calculation includes only species with assigned C-values).
Floristic Quality Index (FQI) (all species)	Sum of C-values of all species divided by the square root of N. (Calculation includes only species with assigned C-values).
Adjusted FQI (native species only)	Sum of C-values of native species divided by the square root of the number of native species. (Calculation includes only species with assigned C-values).
Total Number of Species	The total number of species (includes species with and without assigned C-values).
Total Number of Native Species	The total number of native species (includes species with and without assigned C-values).
Percent Tolerant Species	Percentage of species with C-value ≤ 3 . (Calculation includes only species with assigned C-values).
Percent Intolerant Species	Percentage of species with C-value ≥ 7 . (Calculation includes only species with assigned C-values).
Percent Wetness	Percent of species classified as obligate (OBL), facultative wet (FACW), or facultative (FAC). (Calculation includes only species with assigned C-values). Classification of wetland status based on the 2013 Wetland Plant List .

Note: Species not found in the database are not included in the calculations. Plants that could not be identified to species due to lack of reproductive material are also not included.

The calculator tool also generates a plant list that includes C value, duration (i.e., perennial), growth habitat (i.e., tree), native status, and indicator status (i.e., FACW).

Assessment Methods

Prior to site visits, a review was made of recent aerial photography, USGS topographic mapping, and USDA-NRCS soil mapping for each assessment area.

Then, a site visit was made to each assessment area. A plot center point was established and marked with an orange survey flag. A measuring tape was used to establish the upstream and downstream limits (25 meters in each direction), which were also marked with an orange survey flag. The lateral limits, in most cases, were the upland/wetland boundaries.

A list of plant species occurring within each assessment area was compiled. Any species not recognized was collected and later identified to species where possible. Some plants (mostly sedges and other graminoids) did not have reproductive material present and could not be identified. These species were not included in the plant list.

WRAP variables were assigned scores based on on-site observations and aerial photography.

WRAP assessment forms have been completed and the FQI has been calculated for each area.

The table below provides a summary of 2016 assessment plot locations and scores:

Assessment Plot	Location (Center Point)	WRAP Score	FQI
GA – Gator Alley (assessed separately north and south of the creek, then the data was combined)	N-30.6529 / -87.9110 S-30.6523 / -87.9110	47.64	40.07
TC – Tiawasee Creek	30.6303 / -87.8839	60.83	40.25
TC7 – Tiawasee Creek at Lake Forest	30.6492 / -87.9005	52.50	29.53
DCB – D’Olive Creek at Lake Forest	30.6524 / -87.8925	46.53	23.22
JB0N – Joe’s Branch at I-10 interchange	30.6576 / -87.9085	56.60	33.00
J4-1 – Joe’s Branch east of Town Center Ave.	30.6638 / -87.9034	71.94	33.09
JA – UT to Joe’s Branch north of Town Center Ave.	30.6655 / -87.9091	44.44	17.92
JB – UT to Joe’s Branch northeast of Town Center Ave.	30.6690 / -87.9059	39.17	20.83
D4-D6(1) – D’Olive Creek restoration btwn I-10 & US 90	30.6571 / -87.8825	41.67	12.70
D4-D6(2) – D’Olive Creek undisturbed btwn I-10 & US 90	30.6576 / -87.8823	79.17	28.47
DA3 – UT to D’Olive Creek east of CR 13	30.6485 / -87.8638	65.83	23.95

For comparison, the table below is the summary of 2015 assessment plot locations and scores:

Assessment Plot	Location (Center Point)	WRAP Score	FQI
YB – Yancey Branch reference site	30.6271 / -87.9028	86.81	32.17
GA – Gator Alley (assessed separately north and south of the creek, then the data was combined)	N-30.6529 / -87.9110 S-30.6523 / -87.9110	47.64	33.14
TC – Tiawasee Creek	30.6303 / -87.8839	74.72	29.34
TC7 – Tiawasee Creek at Lake Forest	30.6492 / -87.9005	52.50	23.04
DCB – D’Olive Creek at Lake Forest	30.6524 / -87.8925	46.53	18.90
JB0N – Joe’s Branch at I-10 interchange	30.6576 / -87.9085	56.60	31.96
J4-1 – Joe’s Branch east of Town Center Ave.	30.6638 / -87.9034	77.50	30.92
JA – UT to Joe’s Branch north of Town Center Ave.	30.6655 / -87.9091	44.44	12.61

WRAP Forms and FQI Data

The following pages contain WRAP forms, plant lists, and FQI tables for each assessment plot.

GA – Gator Alley just Upstream of the Main St. D'Olive Creek Channel, North and South of the Creek

☐ PROPOSED
☒ EXISTING CONDITIONS

WETLAND RAPID ASSESSMENT PROCEDURE

COUNTY: **Baldwin** PROJECT: **DATE** REVIEWER: **FLUCCS CODE**
APP. #: **GA** **MBNEP D'Olive Creek** **11/13/2016** **Gena Todia** WETLAND TYPE: ☒ FORESTED ☐ Non-Forested

LAND USE CATEGORY	WETLAND AREA	SECONDARY IMPACTS	MELALEUCA INVASION >50%
Natural	50 M ACRES	<input type="checkbox"/> NO <input type="checkbox"/> YES % =	<input type="checkbox"/> NO <input type="checkbox"/> YES
	ACRES OF IMPACT	ACRES	

WILD LIFE UTILIZATION

1.5

WRAP SCORE

WETLAND CANOPY

2

47.64%

WETLAND GROUND COVER

2

HABITAT SUPPORT / BUFFER

0.075

BUFFER TYPE	SCORE	% AREA	SUB TOTAL
N & S	0	90	0
W-D'Olive Creek corridor	1	5	0.05
E-Lake Forest/Dam	0.5	5	0.025
			0
			0

FIELD HYDROLOGY

2

WATER QUALITY INPUT & TREATMENT

1

LAND USE CATEGORY

LAND USE CATEGORY	SCORE	% AREA	SUB TOTAL
Single-fam Res/Golf Crs	1.5	60	0.9
Commercial/Hwy.	1	40	0.4
			0
			0
			0
LU TOTAL			1.3

PRETREATMENT CATEGORY

PRETREATMENT CATEGORY	SCORE	% AREA	SUB TOTAL
Wet Detention (lake)	1	60	0.6
Underground Detention	0	30	0
Vegetated Buffer	1	10	0.1
			0
			0
PT TOTAL			0.7

WILDLIFE UTILIZATION

(Wildlife utilization should be in consideration of the suite of species that would inhabit and are endemic to the mature target wetland system and not just any wildlife.) Wildlife habitat is degraded, limited in size, essentially isolated and surrounded by development. Adequate upland food and cover are lacking. There are frequent human disturbances associated with Main St. traffic, pedestrians along the trail, commercial development to the north, and the sewage treatment plant to the south. These wetlands do offer limited habitat for birds, small mammals, reptiles, amphibians. It should also be noted that the rusty gravedigger crayfish is known to occur.

WETLAND CANOPY

(Canopy is defined as woody vegetation with greater than 4 inch dbh.) The canopy is composed of a diversity of mostly appropriate species. Chinese tallow tree (*Triadica sebifera*) is present. Greater than 25% of the shrub canopy is composed of Chinese privet (*Ligustrum sinense*). Few snags are present. There are few signs of natural recruitment.

WETLAND GROUND COVER

(Groundcover should be in consideration of endemic species of target wetland community.) Groundcover includes a diversity of appropriate herbaceous and woody species; however, several invasive exotics, including a few coral ardisia (*Ardisia crenata*), Japanese climbing fern (*Lygodium japonicum*), one occurrence of air potato (*Dioscorea bulbifera*), and scattered downy maiden fern (*Thelypteris dentata*) are also present.

HABITAT SUPPORT/BUFFER

(This is based upon habitats OUTSIDE the perimeter of the polygon.) This wetland system is completely surrounded by development with essentially no suitable upland buffer. The lake is to the east and D'Olive Creek continues under Main St. and Hwy. 98 bridges to the west.

FIELD HYDROLOGY

(Site specific based on conditions inside and outside the polygon.) The hydrology is adequate to maintain a wetland system, but it has been altered by upstream impoundment (the lake), sediment input from upstream, and surrounding development. Runoff from adjacent and upstream development has also altered the natural hydrology of the creek and these adjacent wetlands.

WQ INPUT & TREATMENT

(This is based upon habitats OUTSIDE the perimeter of the polygon.) Water that enters the wetlands comes primarily from overflow from Lake Forest, discharge from underground detention ponds associated with the hotels to the north (no pretreatment), and from a narrow vegetated buffer on the south side.

Site: GA – Gator Alley just Upstream of the Main St. D'Olive Creek Channel, North and South of the Creek
 Region: Coastal Plain

USDA Scientific Name	C Value	Duration	Growth Habitat	Native Status	Indicator Status
<i>Acer rubrum</i>	3	Perennial	Tree	Native	FAC
<i>Alnus serrulata</i>	5	Perennial	Tree, Shrub	Native	FACW
<i>Alternanthera philoxeroides</i>	0	Perennial	Forb/herb	Introduced	OBL
<i>Arnoglossum ovatum</i>	9	Perennial	Forb/herb	Native	FACW
<i>Arundinaria gigantea</i>	5	Perennial	Subshrub, Shrub, Graminoid	Native	FACW
<i>Berchemia scandens</i>	6	Perennial	Vine	Native	FAC
<i>Bignonia capreolata</i>	4	Perennial	Vine	Native	FAC
<i>Centella erecta</i>	4	Perennial	Forb/herb	Native	FACW
<i>Cephalanthus occidentalis</i>	5	Perennial	Tree, Shrub	Native	OBL
<i>Chasmanthium laxum</i>	5	Perennial	Graminoid	Native	FACW
<i>Cicuta maculata</i>	5	Biennial, Perennial	Forb/herb	Native	OBL
<i>Cinnamomum camphora</i>	0	Perennial	Tree	Introduced	UPL
<i>Colocasia esculenta</i>	0	Perennial	Forb/herb	Introduced	FACW
<i>Commelina virginica</i>	5	Perennial	Forb/herb	Native	FACW
<i>Crinum americanum</i>	7	Perennial	Forb/herb	Native	OBL
<i>Cyrilla racemiflora</i>	6	Perennial	Tree, Shrub	Native	FACW
<i>Dichanthelium scabriusculum</i>	4	Perennial	Graminoid	Native	OBL
<i>Diospyros virginiana</i>	4	Perennial	Tree	Native	FAC
<i>Elymus virginicus</i>	5	Perennial	Graminoid	Native	FAC
<i>Gelsemium rankinii</i>	7	Perennial	Vine	Native	FACW
<i>Ilex cassine</i>	7	Perennial	Tree, Shrub	Native	FACW
<i>Ilex opaca</i>	5	Perennial	Tree, Shrub	Native	FAC
<i>Ilex vomitoria</i>	5	Perennial	Tree, Shrub	Native	FAC
<i>Itea virginica</i>	7	Perennial	Shrub	Native	FACW
<i>Juncus effusus</i>	3	Perennial	Graminoid	Native	OBL
<i>Juniperus virginiana</i>		Perennial	Tree	Native	FACU
<i>Leucothoe axillaris</i>	7	Perennial	Shrub	Native	FACW
<i>Ligustrum sinense</i>	0	Perennial	Tree, Shrub	Introduced	FAC
<i>Liquidambar styraciflua</i>	3	Perennial	Tree	Native	FAC
<i>Liriodendron tulipifera</i>		Perennial	Tree	Native	FACU
<i>Lobelia cardinalis</i>	5	Perennial	Forb/herb	Native	FACW
<i>Lonicera japonica</i>	0	Perennial	Vine	Introduced	FAC
<i>Lygodium japonicum</i>	0	Perennial	Vine, Forb/herb	Introduced	FAC
<i>Lyonia lucida</i>	7	Perennial	Shrub	Native	FACW
<i>Magnolia virginiana</i>	6	Perennial	Tree, Shrub	Native	FACW
<i>Mikania scandens</i>	4	Perennial	Vine, Forb/herb	Native	FACW
<i>Morella cerifera</i>	4	Perennial	Tree, Subshrub, Shrub	Native	FAC
<i>Nyssa biflora</i>	7	Perennial	Tree	Native	OBL
<i>Onoclea sensibilis</i>	5	Perennial	Forb/herb	Native	FACW
<i>Orontium aquaticum</i>	7	Perennial	Forb/herb	Native	OBL
<i>Osmunda regalis</i>	7	Perennial	Forb/herb	Native	OBL
<i>Peltandra sagittifolia</i>	8	Perennial	Forb/herb	Native	OBL
<i>Peltandra virginica</i>	7	Perennial	Forb/herb	Native	OBL
<i>Persea palustris</i>	7	Perennial	Tree, Shrub	Native	FACW
<i>Pinus elliotii</i>	5	Perennial	Tree	Native	FACW

<i>Pinus taeda</i>	2	Perennial	Tree	Native	FAC
<i>Poncirus trifoliata</i>	0	Perennial	Tree, Shrub	Introduced	
<i>Quercus nigra</i>	3	Perennial	Tree	Native	FAC
<i>Rhododendron viscosum</i>	7	Perennial	Shrub	Native	OBL
<i>Rhynchospora miliacea</i>	6	Perennial	Graminoid	Native	OBL
<i>Rhynchospora odorata</i>	8	Perennial	Graminoid	Native	OBL
<i>Rubus argutus</i>	2	Perennial	Subshrub	Native	FAC
<i>Sabal minor</i>	7	Perennial	Tree, Shrub	Native	FACW
<i>Sabal palmetto</i>	7	Perennial	Tree	Native	FAC
<i>Sagittaria latifolia</i>	5	Perennial	Forb/herb	Native	OBL
<i>Salix nigra</i>	3	Perennial	Tree	Native	OBL
<i>Sambucus nigra</i>	3	Perennial	Tree, Shrub	Native/Introduced	FACW
<i>Saururus cernuus</i>	6	Perennial	Forb/herb	Native	OBL
<i>Smilax bona-nox</i>	4	Perennial	Shrub, Vine	Native	FAC
<i>Smilax laurifolia</i>	5	Perennial	Shrub, Vine	Native	FACW
<i>Solidago altissima</i>		Perennial	Forb/herb	Native	FACU
<i>Spiranthes odorata</i>	7	Perennial	Forb/herb	Native	OBL
<i>Stachys floridana</i>	2	Perennial	Forb/herb	Native	FAC
<i>Symphyotrichum lateriflorum</i>	5	Perennial	Forb/herb	Native	FAC
<i>Taxodium ascendens</i>	8	Perennial	Tree	Native	OBL
<i>Thelypteris dentata</i>	0	Perennial	Forb/herb	Native	FACW
<i>Thelypteris kunthii</i>	4	Perennial	Forb/herb	Native	FACW
<i>Thelypteris palustris</i>	7	Perennial	Forb/herb	Native	OBL
<i>Toxicodendron radicans</i>	3	Perennial	Shrub, Forb/herb, Subshrub, Vine	Native	FAC
<i>Triadenum walteri</i>	7	Perennial	Forb/herb	Native	OBL
<i>Triadica sebifera</i>	0	Perennial	Tree	Introduced	FAC
<i>Viburnum nudum</i>	7	Perennial	Tree, Shrub	Native	FACW
<i>Vitis rotundifolia</i>	4	Perennial	Vine	Native	FAC
<i>Woodwardia areolata</i>	6	Perennial	Forb/herb	Native	OBL
<i>Woodwardia virginica</i>	7	Perennial	Forb/herb	Native	OBL

Site: GA – Gator Alley just Upstream of the Main St. D'Olive Creek Channel, North and South of the Creek
Region: Coastal Plain

Metric Name	Calculated Value
Total Number of Species with Assigned C-values (N)	72
Mean Coefficient of Conservatism (C)	4.72
Mean C (native species only)	5.31
Floristic Quality Index (FQI) (all species)	40.07
Adjusted FQI (native species only)	42.5
Total Number of Species	75
Total Number of Native Species	67
Percent Tolerant Species	26.39
Percent Intolerant Species	31.94
Percent Wetness	94.59

TC – Tiawasee Creek East of Park Avenue and Pollard Road

☐ PROPOSED
☒ EXISTING CONDITIONS

WETLAND RAPID ASSESSMENT PROCEDURE

COUNTY: Baldwin PROJECT DATE REVIEWER FLUCCS CODE
APP. # TC MBNEP D'Olive Creek 11/13/2016 Gena Todia WETLAND TYPE: ☒ FORESTED ☐ Non-Forested

LAND USE CATEGORY	WETLAND AREA	SECONDARY IMPACTS	MELALEUCA INVASION >50%
Natural/Post-Restoration	<u>50 M</u> ACRES	<input type="checkbox"/> NO <input type="checkbox"/> YES %= <u> </u>	<input type="checkbox"/> NO <input type="checkbox"/> YES
	ACRES OF IMPACT	ACRES	

WILD LIFE UTILIZATION

1.5

WETLAND CANOPY

0.5

WETLAND GROUND COVER

2.5

HABITAT SUPPORT / BUFFER

2.375

BUFFER TYPE	SCORE	% AREA	SUB TOTAL
N,S,E-natural	2.5	75	1.875
W-semi-natural	2	25	0.5
			0
			0
			0

FIELD HYDROLOGY

3

WATER QUALITY INPUT & TREATMENT

1.575

LAND USE CATEGORY	SCORE	% AREA	SUB TOTAL
Single-family Residential	1.5	70	1.05
Natural Area	3	20	0.6
Row Crop/Ag Land	1	10	0.1
			0
			0
LU TOTAL			<u>1.75</u>

PRETREATMENT CATEGORY

PRETREATMENT CATEGORY	SCORE	% AREA	SUB TOTAL
Veg Buffer/Dry Det	1	80	0.8
Natural Area	3	20	0.6
			0
			0
			0
PT TOTAL			<u>1.4</u>

WRAP SCORE

63.61%

WILDLIFE UTILIZATION

(Wildlife utilization should be in consideration of the suite of species that would inhabit and are endemic to the mature target wetland system and not just any wildlife.) In recent months, part of the forested corridor along the stream channel was cleared and the failing channel was rebuilt/restored. Much of the previous cover has been removed. Somewhat extensive upland areas that offer food and cover surround the wetlands. There is minimal human disturbance. It is expected that large mammals, such as deer, as well as a variety of reptiles and amphibians would utilize this area. It is also good habitat for songbirds.

WETLAND CANOPY

(Canopy is defined as woody vegetation with greater than 4 inch dbh.) Much of the canopy has been removed to facilitate stream channel restoration. Of the remaining canopy, it is diverse and composed primarily of appropriate native species. A low percentage of Chinese tallow tree (*Triadica sebifera*) is present. Few snags are present. There are signs of natural recruitment.

WETLAND GROUND COVER

(Groundcover should be in consideration of endemic species of target wetland community.) Groundcover species diversity has increased significantly in response to removal of the canopy. Most species are appropriate, however, several invasive exotic species are present and increasing, including Petersen's spleenwort (*Deparia petersenii*), Japanese climbing fern (*Lygodium japonicum*), and sessile joyweed (*Alternanthera sessilis*).

HABITAT SUPPORT/BUFFER

(This is based upon habitats OUTSIDE the perimeter of the polygon.) Surrounding the assessment area to the north, south, and east is somewhat extensive natural forest. However, the surrounding area is not optimal habitat due to past land management practices and fire suppression. To the west is a narrower strip of disturbed habitat (partially cleared), then a road and low density residential development. Wildlife corridors are present and the surrounding area is large enough to provide habitat for large mammals and reptiles.

FIELD HYDROLOGY

(Site specific based on conditions inside and outside the polygon.) A natural hydrologic regime has been restored to the wetlands with restoration of the stream channel.

WQ INPUT & TREATMENT

(This is based upon habitats OUTSIDE the perimeter of the polygon.) Water that enters the wetlands comes from adjacent forested uplands to the east and west in the form of runoff and rainfall. There is also groundwater discharge from upland areas. Runoff from upstream residential development presumably is directed into detention ponds before discharging into natural areas, including Tiawasee Creek and its adjacent wetlands.

Site: TC – Tiawasee Creek East of Park Avenue and Pollard Road
 Region: Coastal Plain

USDA Scientific Name	C Value	Duration	Growth Habitat	Native Status	Indicator
Acer rubrum	3	Perennial	Tree	Native	FAC
Alnus serrulata	5	Perennial	Tree, Shrub	Native	FACW
Alternanthera sessilis	1	Annual, Perennial	Forb/herb	Introduced	OBL
Ambrosia artemisiifolia		Annual	Forb/herb	Native/Introduced	FACU
Andropogon glomeratus	3	Perennial	Graminoid	Native	FACW
Arnoglossum ovatum	9	Perennial	Forb/herb	Native	FACW
Betula nigra	4	Perennial	Tree	Native	FACW
Bidens mitis	6	Annual	Forb/herb	Native	OBL
Boehmeria cylindrica	4	Perennial	Forb/herb	Native	FACW
Callicarpa americana		Perennial	Shrub	Native	FACU
Campsis radicans	2	Perennial	Vine	Native	FAC
Carex albolutescens	5	Perennial	Graminoid	Native	FACW
Centella erecta	4	Perennial	Forb/herb	Native	FACW
Chamaecrista fasciculata		Annual	Forb/herb	Native	FACU
Chasmanthium laxum	5	Perennial	Graminoid	Native	FACW
Cinnamomum camphora	0	Perennial	Tree	Introduced	UPL
Conoclinium coelestinum	4	Perennial	Forb/herb	Native	FAC
Cyperus lanceolatus	3	Perennial	Graminoid	Native	FACW
Cyperus virens	4	Perennial	Graminoid	Native	FACW
Cyrilla racemiflora	6	Perennial	Tree, Shrub	Native	FACW
Decumaria barbara	6	Perennial	Vine	Native	FACW
Echinochloa colona	0	Annual	Graminoid	Introduced	FACW
Eleocharis rostellata	8	Perennial	Graminoid	Native	OBL
Eupatorium capillifolium		Perennial	Forb/herb	Native	FACU
Eupatorium perfoliatum	4	Perennial	Forb/herb	Native	FACW
Fuirena squarrosa	5	Perennial	Graminoid	Native	OBL
Habenaria repens	5	Perennial	Forb/herb	Native	OBL
Ilex coriacea	7	Perennial	Tree, Shrub	Native	FACW
Ilex glabra	5	Perennial	Shrub	Native	FACW
Illicium floridanum	7	Perennial	Tree, Shrub	Native	FACW
Itea virginica	7	Perennial	Shrub	Native	FACW
Juncus effusus	3	Perennial	Graminoid	Native	OBL
Juncus trigonocarpus	6	Perennial	Graminoid	Native	OBL
Juniperus virginiana		Perennial	Tree	Native	FACU
Kyllinga pumila	3	Annual, Perennial	Graminoid	Native	FACW
Leersia virginica	5	Perennial	Graminoid	Native	FACW
Leucothoe axillaris	7	Perennial	Shrub	Native	FACW
Ligustrum sinense	0	Perennial	Tree, Shrub	Introduced	FAC
Liquidambar styraciflua	3	Perennial	Tree	Native	FAC
Liriodendron tulipifera		Perennial	Tree	Native	FACU
Lobelia puberula	5	Perennial	Forb/herb	Native	FACW
Lonicera japonica	0	Perennial	Vine	Introduced	FAC
Ludwigia alternifolia	4	Perennial	Forb/herb	Native	OBL
Ludwigia decurrens	5	Annual, Perennial	Forb/herb	Native	OBL
Ludwigia leptocarpa	5	Annual, Perennial	Subshrub, Forb/herb	Native	OBL
Ludwigia repens	4	Perennial	Forb/herb	Native	OBL

<i>Lycopus uniflorus</i>		Perennial	Forb/herb	Native	OBL
<i>Lycopus virginicus</i>	5	Perennial	Forb/herb	Native	OBL
<i>Lygodium japonicum</i>	0	Perennial	Vine, Forb/herb	Introduced	FAC
<i>Magnolia virginiana</i>	6	Perennial	Tree, Shrub	Native	FACW
<i>Mayaca fluviatilis</i>	6	Perennial	Forb/herb	Native	OBL
<i>Mikania scandens</i>	4	Perennial	Vine, Forb/herb	Native	FACW
<i>Morella cerifera</i>	4	Perennial	Tree, Subshrub, Shrub	Native	FAC
<i>Nyssa biflora</i>	7	Perennial	Tree	Native	OBL
<i>Orontium aquaticum</i>	7	Perennial	Forb/herb	Native	OBL
<i>Osmunda cinnamomea</i>	7	Perennial	Forb/herb	Native	FACW
<i>Osmunda regalis</i>	7	Perennial	Forb/herb	Native	OBL
<i>Panicum longifolium</i>	7	Perennial	Graminoid	Native	
<i>Panicum repens</i>	0	Perennial	Graminoid	Introduced	FACW
<i>Paspalum urvillei</i>	0	Perennial	Graminoid	Introduced	FAC
<i>Peltandra virginica</i>	7	Perennial	Forb/herb	Native	OBL
<i>Persea palustris</i>	7	Perennial	Tree, Shrub	Native	FACW
<i>Pinus elliotii</i>	5	Perennial	Tree	Native	FACW
<i>Pluchea camphorata</i>	5	Annual, Perennial	Forb/herb	Native	FACW
<i>Polygonum punctatum</i>	4	Annual, Perennial	Forb/herb	Native	
<i>Polypremum procumbens</i>		Annual, Perennial	Forb/herb	Native	FACU
<i>Proserpinaca pectinata</i>	6	Perennial	Forb/herb	Native	OBL
<i>Quercus nigra</i>	3	Perennial	Tree	Native	FAC
<i>Rhododendron viscosum</i>	7	Perennial	Shrub	Native	OBL
<i>Rhynchospora capitellata</i>	6	Perennial	Graminoid	Native	OBL
<i>Rubus argutus</i>	2	Perennial	Subshrub	Native	FAC
<i>Rubus trivialis</i>		Perennial	Subshrub, Vine	Native	FACU
<i>Sagittaria latifolia</i>	5	Perennial	Forb/herb	Native	OBL
<i>Salix nigra</i>	3	Perennial	Tree	Native	OBL
<i>Saururus cernuus</i>	6	Perennial	Forb/herb	Native	OBL
<i>Smilax laurifolia</i>	5	Perennial	Shrub, Vine	Native	FACW
<i>Taxodium distichum</i>	6	Perennial	Tree	Native	OBL
<i>Thelypteris palustris</i>	7	Perennial	Forb/herb	Native	OBL
<i>Toxicodendron radicans</i>	3	Perennial	Shrub, Forb/herb, Subshrub, Vine	Native	FAC
<i>Triadenum walteri</i>	7	Perennial	Forb/herb	Native	OBL
<i>Triadica sebifera</i>	0	Perennial	Tree	Introduced	FAC
<i>Typha latifolia</i>	2	Perennial	Forb/herb	Native	OBL
<i>Verbena brasiliensis</i>	0	Annual	Subshrub, Forb/herb	Introduced	
<i>Vernonia missurica</i>	6	Perennial	Forb/herb	Native	FAC
<i>Viburnum nudum</i>	7	Perennial	Tree, Shrub	Native	FACW
<i>Vigna luteola</i>	2	Perennial	Vine, Forb/herb	Native	FACW
<i>Viola primulifolia</i>				Not Available	
<i>Vitis rotundifolia</i>	4	Perennial	Vine	Native	FAC
<i>Woodwardia areolata</i>	6	Perennial	Forb/herb	Native	OBL
<i>Woodwardia virginica</i>	7	Perennial	Forb/herb	Native	OBL

Site: TC – Tiawasee Creek East of Park Avenue and Pollard Road
 Region: Coastal Plain

Metric Name	Calculated Value
Total Number of Species with Assigned C-values (N)	80
Mean Coefficient of Conservatism (C)	4.5
Mean C (native species only)	5.13
Floristic Quality Index (FQI) (all species)	40.25
Adjusted FQI (native species only)	42.91
Total Number of Species	90
Total Number of Native Species	80
Percent Tolerant Species	28.75
Percent Intolerant Species	22.5
Percent Wetness	89.53

TC7 – Tiawasee Creek Wetlands just Upstream of the Lake Forest Impoundment

☐ PROPOSED
☒ EXISTING CONDITIONS

WETLAND RAPID ASSESSMENT PROCEDURE

COUNTY: **Baldwin** PROJECT: **MBNEP D'Olive Creek** DATE: **11/13/2015** REVIEWER: **Gena Todia** FLUCCS CODE:
 APP. #: **TC7** WETLAND TYPE: ☒ FORESTED ☐ Non-Forested

LAND USE CATEGORY	WETLAND AREA	SECONDARY IMPACTS	MELALEUCA INVASION >50%
Natural	50 M ACRES	<input type="checkbox"/> NO <input type="checkbox"/> YES	<input type="checkbox"/> NO <input type="checkbox"/> YES
	ACRES OF IMPACT	ACRES	

WILD LIFE UTILIZATION

1

WETLAND CANOPY

1.5

WETLAND GROUND COVER

1.5

HABITAT SUPPORT / BUFFER

1.5

BUFFER TYPE	SCORE	% AREA	SUB TOTAL
S-natural, golf course	1.5	60	0.9
N-natural, residential	1.5	40	0.6
			0
			0
			0

FIELD HYDROLOGY

2

WATER QUALITY INPUT & TREATMENT

1.95

LAND USE CATEGORY	SCORE	% AREA	SUB TOTAL
Single-fam Res/Golf Crs	1.5	60	0.9
Natural Area	3	40	1.2
			0
			0
			0
LU TOTAL			2.1

PRETREATMENT CATEGORY

PRETREATMENT CATEGORY	SCORE	% AREA	SUB TOTAL
Veg Buffer/Dry Det	1	60	0.6
Natural Area	3	40	1.2
			0
			0
			0
PT TOTAL			1.8

WRAP SCORE

52.50%

WILDLIFE UTILIZATION

(Wildlife utilization should be in consideration of the suite of species that would inhabit and are endemic to the mature target wetland system and not just any wildlife.) Wildlife habitat is degraded, limited in size, fragmented, and surrounded by development. Adequate upland food and cover are lacking. There are frequent human disturbances associated with the adjacent golf course and residential development.

WETLAND CANOPY

(Canopy is defined as woody vegetation with greater than 4 inch dbh.) The canopy is lacking diversity and maturity. Several species that should be present are not there. Chinese tallow tree (*Triadica sebifera*) and Chinese privet (*Ligustrum sinense*) are prevalent. Few snags are present. There are few signs of natural recruitment.

WETLAND GROUND COVER

(Groundcover should be in consideration of endemic species of target wetland community.) Groundcover includes a diversity of appropriate herbaceous and woody species; however, there is also a high percentage of invasive exotics, including alligatorweed (*Alternanthera philoxeroides*), a few coral ardisia (*Ardisia crenata*), Japanese climbing fern (*Lygodium japonicum*), and torpedo grass (*Panicum repens*).

HABITAT SUPPORT/BUFFER

(This is based upon habitats OUTSIDE the perimeter of the polygon.) Surrounding the assessment area to the north, south, and east is a narrow strip of forested uplands, then a golf course and/or single-family residential development. The lake is to the west. Wildlife corridors are present, but limited and surrounded by development.

FIELD HYDROLOGY

(Site specific based on conditions inside and outside the polygon.) The hydrology is adequate to maintain a wetland system, but it has been altered by downstream impoundment (the lake) and sediment input from upstream. Runoff from adjacent and upstream development has also altered the natural hydrology of the creek and these adjacent wetlands.

WQ INPUT & TREATMENT

(This is based upon habitats OUTSIDE the perimeter of the polygon.) Water that enters the wetlands comes from adjacent and upstream forested uplands in the form of runoff and rainfall. There is also groundwater discharge from upland areas. Runoff from upstream and adjacent residential development and the golf course flows through vegetated areas before entering natural areas.

Site: TC7 – Tiawasee Creek Wetlands just Upstream of the Lake Forest Impoundment

Region: Coastal Plain

USDA Scientific Name	C Value	Duration	Growth Habitat	Native Status	Indicator Status
<i>Acer rubrum</i>	3	Perennial	Tree	Native	FAC
<i>Alnus serrulata</i>	5	Perennial	Tree, Shrub	Native	FACW
<i>Alternanthera philoxeroides</i>	0	Perennial	Forb/herb	Introduced	OBL
<i>Bidens laevis</i>	6	Annual, Perennial	Forb/herb	Native	OBL
<i>Bidens mitis</i>	6	Annual	Forb/herb	Native	OBL
<i>Boehmeria cylindrica</i>	4	Perennial	Forb/herb	Native	FACW
<i>Campsis radicans</i>	2	Perennial	Vine	Native	FAC
<i>Centella erecta</i>	4	Perennial	Forb/herb	Native	FACW
<i>Cephalanthus occidentalis</i>	5	Perennial	Tree, Shrub	Native	OBL
<i>Chasmanthium laxum</i>	5	Perennial	Graminoid	Native	FACW
<i>Colocasia esculenta</i>	0	Perennial	Forb/herb	Introduced	FACW
<i>Conoclinium coelestinum</i>	4	Perennial	Forb/herb	Native	FAC
<i>Cyrilla racemiflora</i>	6	Perennial	Tree, Shrub	Native	FACW
<i>Dichanthelium scabriusculum</i>	4	Perennial	Graminoid	Native	OBL
<i>Erianthus giganteus</i>	4	Perennial	Graminoid	Native	FACW
<i>Eupatorium capillifolium</i>		Perennial	Forb/herb	Native	FACU
<i>Gelsemium sempervirens</i>	4	Perennial	Vine, Shrub	Native	FAC
<i>Habenaria repens</i>	5	Perennial	Forb/herb	Native	OBL
<i>Hypericum crux-andreae</i>	6	Perennial	Subshrub, Shrub	Native	FACW
<i>Ilex vomitoria</i>	5	Perennial	Tree, Shrub	Native	FAC
<i>Itea virginica</i>	7	Perennial	Shrub	Native	FACW
<i>Juncus effusus</i>	3	Perennial	Graminoid	Native	OBL
<i>Ligustrum sinense</i>	0	Perennial	Tree, Shrub	Introduced	FAC
<i>Liriodendron tulipifera</i>		Perennial	Tree	Native	FACU
<i>Lonicera japonica</i>	0	Perennial	Vine	Introduced	FAC
<i>Lycopus rubellus</i>	6	Perennial	Forb/herb	Native	OBL
<i>Lygodium japonicum</i>	0	Perennial	Vine, Forb/herb	Introduced	FAC
<i>Mikania scandens</i>	4	Perennial	Vine, Forb/herb	Native	FACW
<i>Morella cerifera</i>	4	Perennial	Tree, Subshrub, Shrub	Native	FAC
<i>Osmunda regalis</i>	7	Perennial	Forb/herb	Native	OBL
<i>Panicum repens</i>	0	Perennial	Graminoid	Introduced	FACW
<i>Pinus taeda</i>	2	Perennial	Tree	Native	FAC
<i>Quercus nigra</i>	3	Perennial	Tree	Native	FAC
<i>Rhynchospora corniculata</i>	5	Perennial	Graminoid	Native	OBL
<i>Rhynchospora glomerata</i>	5	Perennial	Graminoid	Native	OBL
<i>Rubus argutus</i>	2	Perennial	Subshrub	Native	FAC
<i>Rubus trivialis</i>		Perennial	Subshrub, Vine	Native	FACU
<i>Sagittaria latifolia</i>	5	Perennial	Forb/herb	Native	OBL
<i>Salix nigra</i>	3	Perennial	Tree	Native	OBL
<i>Sambucus nigra</i>	3	Perennial	Tree, Shrub	Native/Introduced	FACW
<i>Saururus cernuus</i>	6	Perennial	Forb/herb	Native	OBL
<i>Scirpus cyperinus</i>	3	Perennial	Graminoid	Native	OBL
<i>Sida rhombifolia</i>		Annual, Perennial	Subshrub, Forb/herb	Native	FACU
<i>Smilax bona-nox</i>	4	Perennial	Shrub, Vine	Native	FAC
<i>Smilax glauca</i>	4	Perennial	Shrub, Vine	Native	FAC
<i>Smilax laurifolia</i>	5	Perennial	Shrub, Vine	Native	FACW

<i>Solidago sempervirens</i>	6	Perennial	Forb/herb	Native	FACW
<i>Spiranthes odorata</i>	7	Perennial	Forb/herb	Native	OBL
<i>Stachys floridana</i>	2	Perennial	Forb/herb	Native	FAC
<i>Symphytotrichum lateriflorum</i>	5	Perennial	Forb/herb	Native	FAC
<i>Thelypteris dentata</i>	0	Perennial	Forb/herb	Native	FACW
<i>Thelypteris palustris</i>	7	Perennial	Forb/herb	Native	OBL
<i>Toxicodendron radicans</i>	3	Perennial	Shrub, Forb/herb, Subshrub, Vine	Native	FAC
<i>Triadenum walteri</i>	7	Perennial	Forb/herb	Native	OBL
<i>Triadica sebifera</i>	0	Perennial	Tree	Introduced	FAC
<i>Vaccinium elliotii</i>	7	Perennial	Shrub	Native	FACW
<i>Viola primulifolia</i>				Not Available	
<i>Vitis rotundifolia</i>	4	Perennial	Vine	Native	FAC
<i>Wisteria frutescens</i>	6	Perennial	Vine	Native	FACW
<i>Woodwardia areolata</i>	6	Perennial	Forb/herb	Native	OBL

Site: TC7 – Tiawasee Creek Wetlands just Upstream of the Lake Forest Impoundment
Region: Coastal Plain

Metric Name	Calculated Value
Total Number of Species with Assigned C-values (N)	55
Mean Coefficient of Conservatism (C)	3.98
Mean C (native species only)	4.56
Floristic Quality Index (FQI) (all species)	29.53
Adjusted FQI (native species only)	31.61
Total Number of Species	60
Total Number of Native Species	53
Percent Tolerant Species	34.55
Percent Intolerant Species	10.91
Percent Wetness	93.22

DCB – D'Olive Creek Wetlands just Upstream of the Lake Forest Impoundment

☐ PROPOSED
☒ EXISTING CONDITIONS

WETLAND RAPID ASSESSMENT PROCEDURE

COUNTY: Baldwin PROJECT DATE REVIEWER FLUCCS CODE
 APP. #: DCB MBNEP D'Olive Creek 11/13/2016 Gena Todia WETLAND TYPE: ☒ FORESTED ☐ Non-Forested

LAND USE CATEGORY	WETLAND AREA	SECONDARY IMPACTS	MELALEUCA INVASION >50%
Natural	50 M ACRES	<input type="checkbox"/> NO <input type="checkbox"/> YES %=	<input type="checkbox"/> NO <input type="checkbox"/> YES
	ACRES OF IMPACT	ACRES	

WILD LIFE UTILIZATION

1

WETLAND CANOPY

1.5

WETLAND GROUND COVER

1.5

HABITAT SUPPORT / BUFFER

1.125

BUFFER TYPE	SCORE	% AREA	SUB TOTAL
N-residential	0.5	25	0.125
S-natural	2	25	0.5
E-natural	2	25	0.5
W-residential/road	0	25	0
			0

FIELD HYDROLOGY

2

WATER QUALITY INPUT & TREATMENT

1.25

LAND USE CATEGORY	SCORE	% AREA	SUB TOTAL
Single-family residential	1.5	80	1.2
Natural area	3	10	0.3
			0
			0
			0
			0
LU TOTAL			1.5

PRETREATMENT CATEGORY

PRETREATMENT CATEGORY	SCORE	% AREA	SUB TOTAL
Vegetated Buffer	1	100	1
			0
			0
			0
			0
PT TOTAL			1

WRAP SCORE

46.53%

WILDLIFE UTILIZATION

(Wildlife utilization should be in consideration of the suite of species that would inhabit and are endemic to the mature target wetland system and not just any wildlife.) The limited habitat present is degraded by sedimentation and invasion by exotic plant species. The wetlands are adjacent to residential property and a high-volume road, so any wildlife present is subject to frequent human disturbance. Adjacent upland food sources are limited.

WETLAND CANOPY

(Canopy is defined as woody vegetation with greater than 4 inch dbh.) The canopy lacks diversity and includes a high percentage of Chinese tallow tree (*Triadica sebifera*). Few snags are present. There are minimal signs of natural recruitment.

WETLAND GROUND COVER

(Groundcover should be in consideration of endemic species of target wetland community.) Groundcover includes a diversity of herbaceous species; however, a high percentage is invasive exotic species, including Japanese climbing fern (*Lygodium japonicum*), Iris spp., Peruvian primrose-willow (*Ludwigia peruviana*), parrot feather (*Myriophyllum aquaticum*), sessile joyweed (*Alternanthera sessilis*), and cogongrass (*Imperata cylindrica*).

HABITAT SUPPORT/BUFFER

(This is based upon habitats OUTSIDE the perimeter of the polygon.) To the immediate north are residential yards; to the south is the creek, then a forested area, and beyond that are residential areas; to the east is a forested corridor along the creek; and to the west is a residential lawn, then a heavily-traveled road, and then the lake. The natural areas to the south and east are degraded to some degree and are not very wide.

FIELD HYDROLOGY

(Site specific based on conditions inside and outside the polygon.) The hydrology is adequate to maintain a wetland system, except in areas where sediment has accumulated to unnaturally high elevations, but it has been altered by downstream impoundment (the lake) and sediment input from upstream. Runoff from adjacent and upstream development has also altered the natural hydrology of the creek and these adjacent wetlands. A levee has formed along the creekbanks, which disconnects the wetlands from the creek except in high water flow events. Beaver activity has raised the water level in wetlands in this area.

WQ INPUT & TREATMENT

(This is based upon habitats OUTSIDE the perimeter of the polygon.) Water that enters the wetlands comes from adjacent uplands to the north and east in the form of runoff and rainfall, and from creek overflow events during high rainfall occurrences. D'Olive Creek receives runoff from residential and commercial development, roadways, and natural forested areas.

USDA Scientific Name	C Value	Duration	Growth Habitat	Native Status	Indicator Status
<i>Acer rubrum</i>	3	Perennial	Tree	Native	FAC
<i>Alternanthera sessilis</i>	1	Annual, Perennial	Forb/herb	Introduced	OBL
<i>Arundinaria gigantea</i>	5	Perennial	Subshrub, Shrub, Graminoid	Native	FACW
<i>Bignonia capreolata</i>	4	Perennial	Vine	Native	FAC
<i>Centella erecta</i>	4	Perennial	Forb/herb	Native	FACW
<i>Cephalanthus occidentalis</i>	5	Perennial	Tree, Shrub	Native	OBL
<i>Cyperus retrorsus</i>	2	Perennial	Graminoid	Native	FACU
<i>Cyrilla racemiflora</i>	6	Perennial	Tree, Shrub	Native	FACW
<i>Dichanthelium scabriusculum</i>	4	Perennial	Graminoid	Native	OBL
<i>Erianthus giganteus</i>	4	Perennial	Graminoid	Native	FACW
<i>Galium hispidulum</i>		Perennial	Forb/herb	Native	
<i>Galium tinctorium</i>	5	Perennial	Forb/herb	Native	FACW
<i>Hyptis mutabilis</i>	0	Perennial	Forb/herb	Introduced	FAC
<i>Ilex vomitoria</i>	5	Perennial	Tree, Shrub	Native	FAC
<i>Itea virginica</i>	7	Perennial	Shrub	Native	FACW
<i>Juniperus virginiana</i>		Perennial	Tree	Native	FACU
<i>Leersia oryzoides</i>	4	Perennial	Graminoid	Native	OBL
<i>Ligustrum sinense</i>	0	Perennial	Tree, Shrub	Introduced	FAC
<i>Liriodendron tulipifera</i>		Perennial	Tree	Native	FACU
<i>Ludwigia decurrens</i>	5	Annual, Perennial	Forb/herb	Native	OBL
<i>Ludwigia octovalvis</i>	2	Perennial	Subshrub, Forb/herb	Native	OBL
<i>Ludwigia peruviana</i>	0	Perennial	Subshrub, Shrub, Forb/herb	Introduced	OBL
<i>Lygodium japonicum</i>	0	Perennial	Vine, Forb/herb	Introduced	FAC
<i>Mikania scandens</i>	4	Perennial	Vine, Forb/herb	Native	FACW
<i>Morella cerifera</i>	4	Perennial	Tree, Subshrub, Shrub	Native	FAC
<i>Myriophyllum aquaticum</i>	0	Perennial	Forb/herb	Introduced	OBL
<i>Nyssa biflora</i>	7	Perennial	Tree	Native	OBL
<i>Orontium aquaticum</i>	7	Perennial	Forb/herb	Native	OBL
<i>Osmunda regalis</i>	7	Perennial	Forb/herb	Native	OBL
<i>Panicum gymnocarpon</i>	5	Perennial	Graminoid	Native	OBL
<i>Polygonum punctatum</i>	4	Annual, Perennial	Forb/herb	Native	
<i>Quercus nigra</i>	3	Perennial	Tree	Native	FAC
<i>Rhynchospora macrostachya</i>	6	Perennial	Graminoid	Native	OBL
<i>Rubus trivialis</i>		Perennial	Subshrub, Vine	Native	FACU
<i>Sagittaria latifolia</i>	5	Perennial	Forb/herb	Native	OBL
<i>Saururus cernuus</i>	6	Perennial	Forb/herb	Native	OBL
<i>Scirpus cyperinus</i>	3	Perennial	Graminoid	Native	OBL
<i>Smilax laurifolia</i>	5	Perennial	Shrub, Vine	Native	FACW
<i>Stachys floridana</i>	2	Perennial	Forb/herb	Native	FAC
<i>Thelypteris palustris</i>	7	Perennial	Forb/herb	Native	OBL
<i>Triadica sebifera</i>	0	Perennial	Tree	Introduced	FAC
<i>Typha latifolia</i>	2	Perennial	Forb/herb	Native	OBL
<i>Vigna luteola</i>	2	Perennial	Vine, Forb/herb	Native	FACW

Site: DCB – D'Olive Creek at Lake Forest

Region: Coastal Plain

Metric Name	Calculated Value
Total Number of Species with Assigned C-values (N)	39
Mean Coefficient of Conservatism (C)	3.72
Mean C (native species only)	4.5
Floristic Quality Index (FQI) (all species)	23.22
Adjusted FQI (native species only)	25.46
Total Number of Species	43
Total Number of Native Species	36
Percent Tolerant Species	38.46
Percent Intolerant Species	12.82
Percent Wetness	90.24

JBON – Joe's Branch just North of the I-10 Interchange

☐ PROPOSED
☒ EXISTING CONDITIONS

WETLAND RAPID ASSESSMENT PROCEDURE

COUNTY: Baldwin PROJECT: DATE REVIEWER: FLUCCS CODE
APP. #: JBON MBNEP D'Olive Creek 11/26/2016 Gena Todia WETLAND TYPE: ☒ FORESTED ☐ Non-Forested

LAND USE CATEGORY	WETLAND AREA	SECONDARY IMPACTS	MELALEUCA INVASION >50%
Natural	50 M ACRES	<input type="checkbox"/> NO <input type="checkbox"/> YES %=	<input type="checkbox"/> NO <input type="checkbox"/> YES
	ACRES OF IMPACT	ACRES	

WILD LIFE UTILIZATION

1

WETLAND CANOPY

2

WETLAND GROUND COVER

2

HABITAT SUPPORT / BUFFER

0.6

BUFFER TYPE	SCORE	% AREA	SUB TOTAL
E&W- Detention Ponds	0.5	60	0.3
Joe's Br. creek corridor	2	15	0.3
S- Interstate exchange	0	25	0
			0
			0

FIELD HYDROLOGY

2.5

WATER QUALITY INPUT & TREATMENT

2.0875

LAND USE CATEGORY

LAND USE CATEGORY	SCORE	% AREA	SUB TOTAL
Mod Intensive Commercial	1.5	60	0.9
High Volume Hwy	1	25	0.25
Natural	2.5	15	0.375
			0
			0
LU TOTAL			1.525

PRETREATMENT CATEGORY

PRETREATMENT CATEGORY	SCORE	% AREA	SUB TOTAL
Wet Detention	2.5	30	0.75
Vegetated Buffers	1	10	0.1
Natural	3	60	1.8
			0
			0
PT TOTAL			2.65

WRAP SCORE

56.60%

WILDLIFE UTILIZATION

(Wildlife utilization should be in consideration of the suite of species that would inhabit and are endemic to the mature target wetland system and not just any wildlife.) Wildlife habitat is degraded, limited in size, essentially isolated and surrounded by development. Adequate upland food and cover are lacking. There are frequent human disturbances associated with traffic on surrounding roads, including an I-10 off ramp. These wetlands do offer limited habitat for birds, small mammals, reptiles, amphibians. A corridor is present upstream, but at it's upper end (Hwy. 31) is surrounded by dense development.

WETLAND CANOPY

(Canopy is defined as woody vegetation with greater than 4 inch dbh.) The canopy is composed of mostly appropriate species. Chinese tallow tree (*Triadica sebifera*) and Chinese privet (*Ligustrum sinense*) are present, but comprise less than 25% of the canopy. Few snags are present. There are few signs of natural recruitment.

WETLAND GROUND COVER

(Groundcover should be in consideration of endemic species of target wetland community.) Groundcover includes a diversity of appropriate herbaceous and woody species; however, several invasive exotics, including a few coral ardisia (*Ardisia crenata*), Japanese climbing fern (*Lygodium japonicum*), scattered downy maiden fern (*Thelypteris dentata*), Chinese privet (*Ligustrum sinense*), Chinese tallow tree (*Triadica sebifera*), and a few Oriental false hawksbeard (*Youngia japonica*) are also present.

HABITAT SUPPORT/BUFFER

(This is based upon habitats OUTSIDE the perimeter of the polygon.) To the east and west are stormwater detention ponds with no surrounding natural habitat. To the south is a narrow strip of forested uplands and then interstate exchange. To the north is an elevated bridge and then the upstream segment of the Joe's Branch stream and wetland corridor that extends north to Hwy. 31. This corridor is surrounded by cleared land and commercial development.

FIELD HYDROLOGY

(Site specific based on conditions inside and outside the polygon.) The hydrology is adequate to maintain a wetland system, but it has been altered by surrounding development. Runoff from adjacent and upstream development has also altered the natural hydrology of the creek and these adjacent wetlands. Recent beaver activity has made wetlands on the site wetter.

WQ INPUT & TREATMENT

(This is based upon habitats OUTSIDE the perimeter of the polygon.) Water that enters the wetlands comes from upstream forested wetlands, surrounding cleared land, and discharge from the adjacent detention ponds.

Site: JB0N – Joe's Branch just North of the I-10 Interchange
 Region: Coastal Plain

USDA Scientific Name	C Value	Duration	Growth Habitat	Native Status	Indicator Status
<i>Acer rubrum</i>	3	Perennial	Tree	Native	FAC
<i>Amoglossum ovatum</i>	9	Perennial	Forb/herb	Native	FACW
<i>Bidens alba</i>		Annual, Perennial	Forb/herb	Native	
<i>Bidens laevis</i>	6	Annual, Perennial	Forb/herb	Native	OBL
<i>Bignonia capreolata</i>	4	Perennial	Vine	Native	FAC
<i>Boehmeria cylindrica</i>	4	Perennial	Forb/herb	Native	FACW
<i>Campsis radicans</i>	2	Perennial	Vine	Native	FAC
<i>Carex scabrata</i>		Perennial	Graminoid	Native	OBL
<i>Chasmanthium laxum</i>	5	Perennial	Graminoid	Native	FACW
<i>Cinnamomum camphora</i>	0	Perennial	Tree	Introduced	UPL
<i>Commelina virginica</i>	5	Perennial	Forb/herb	Native	FACW
<i>Conoclinium coelestinum</i>	4	Perennial	Forb/herb	Native	FAC
<i>Cyrilla racemiflora</i>	6	Perennial	Tree, Shrub	Native	FACW
<i>Dichanthelium scabriusculum</i>	4	Perennial	Graminoid	Native	OBL
<i>Gelsemium sempervirens</i>	4	Perennial	Vine, Shrub	Native	FAC
<i>Ilex opaca</i>	5	Perennial	Tree, Shrub	Native	FAC
<i>Itea virginica</i>	7	Perennial	Shrub	Native	FACW
<i>Juncus coriaceus</i>	5	Perennial	Graminoid	Native	FACW
<i>Juncus effusus</i>	3	Perennial	Graminoid	Native	OBL
<i>Ligustrum sinense</i>	0	Perennial	Tree, Shrub	Introduced	FAC
<i>Liquidambar styraciflua</i>	3	Perennial	Tree	Native	FAC
<i>Liriodendron tulipifera</i>		Perennial	Tree	Native	FACU
<i>Lonicera japonica</i>	0	Perennial	Vine	Introduced	FAC
<i>Lycopus americanus</i>	5	Perennial	Forb/herb	Native	OBL
<i>Lygodium japonicum</i>	0	Perennial	Vine, Forb/herb	Introduced	FAC
<i>Magnolia grandiflora</i>	4	Perennial	Tree	Native	FAC
<i>Magnolia virginiana</i>	6	Perennial	Tree, Shrub	Native	FACW
<i>Mikania scandens</i>	4	Perennial	Vine, Forb/herb	Native	FACW
<i>Morella cerifera</i>	4	Perennial	Tree, Subshrub, Shrub	Native	FAC
<i>Nyssa biflora</i>	7	Perennial	Tree	Native	OBL
<i>Onoclea sensibilis</i>	5	Perennial	Forb/herb	Native	FACW
<i>Orontium aquaticum</i>	7	Perennial	Forb/herb	Native	OBL
<i>Osmunda cinnamomea</i>	7	Perennial	Forb/herb	Native	FACW
<i>Osmunda regalis</i>	7	Perennial	Forb/herb	Native	OBL
<i>Panicum gymnocarpon</i>	5	Perennial	Graminoid	Native	OBL
<i>Persea palustris</i>	7	Perennial	Tree, Shrub	Native	FACW
<i>Pluchea odorata</i>	5	Annual, Perennial	Subshrub, Forb/herb	Native	FACW
<i>Potamogeton pectinatus</i>	6	Perennial	Forb/herb	Native	OBL
<i>Quercus nigra</i>	3	Perennial	Tree	Native	FAC
<i>Rhynchospora fascicularis</i>	6	Perennial	Graminoid	Native	FACW
<i>Rhynchospora odorata</i>	8	Perennial	Graminoid	Native	OBL
<i>Sagittaria latifolia</i>	5	Perennial	Forb/herb	Native	OBL
<i>Saururus cernuus</i>	6	Perennial	Forb/herb	Native	OBL
<i>Smilax bona-nox</i>	4	Perennial	Shrub, Vine	Native	FAC
<i>Smilax laurifolia</i>	5	Perennial	Shrub, Vine	Native	FACW
<i>Symphotrichum lateriflorum</i>	5	Perennial	Forb/herb	Native	FAC

<i>Thelypteris dentata</i>	0	Perennial	Forb/herb	Native	FACW
<i>Thelypteris kunthii</i>	4	Perennial	Forb/herb	Native	FACW
<i>Thelypteris palustris</i>	7	Perennial	Forb/herb	Native	OBL
<i>Toxicodendron radicans</i>	3	Perennial	Shrub, Forb/herb, Subshrub, Vine	Native	FAC
<i>Triadenum walteri</i>	7	Perennial	Forb/herb	Native	OBL
<i>Triadica sebifera</i>	0	Perennial	Tree	Introduced	FAC
<i>Viburnum nudum</i>	7	Perennial	Tree, Shrub	Native	FACW
<i>Vitis rotundifolia</i>	4	Perennial	Vine	Native	FAC
<i>Woodwardia areolata</i>	6	Perennial	Forb/herb	Native	OBL

Site: JB0N – Joe’s Branch just North of the I-10 Interchange

Region: Coastal Plain

Metric Name	Calculated Value
Total Number of Species with Assigned C-values (N)	52
Mean Coefficient of Conservatism (C)	4.58
Mean C (native species only)	5.06
Floristic Quality Index (FQI) (all species)	33.00
Adjusted FQI (native species only)	34.72
Total Number of Species	55
Total Number of Native Species	50
Percent Tolerant Species	23.08
Percent Intolerant Species	21.15
Percent Wetness	96.30

J4-1 – Joe's Branch East of Town Center Avenue

☐ PROPOSED
☒ EXISTING CONDITIONS

WETLAND RAPID ASSESSMENT PROCEDURE

COUNTY: **Baldwin** PROJECT: **DATE** REVIEWER: **FLUCCS CODE**
 APP. #: **J4-1** MBNEP D'Olive Creek **11/26/2016** **Gena Todia** WETLAND TYPE: ☒ FORESTED ☐ Non-Forested

LAND USE CATEGORY	WETLAND AREA	SECONDARY IMPACTS	MELALEUCA INVASION >50%
Natural	50 M ACRES	<input type="checkbox"/> NO <input type="checkbox"/> YES % =	<input type="checkbox"/> NO <input type="checkbox"/> YES
	ACRES OF IMPACT	ACRES	

WILD LIFE UTILIZATION

2

WETLAND CANOPY

2

WETLAND GROUND COVER

2

HABITAT SUPPORT / BUFFER

2.15

BUFFER TYPE	SCORE	% AREA	SUB TOTAL
N&E-Natural	2.5	80	2
S-Detention Pond	1	15	0.15
West-Road	0	5	0
			0
			0

FIELD HYDROLOGY

2

WATER QUALITY INPUT & TREATMENT

2.8

LAND USE CATEGORY	SCORE	% AREA	SUB TOTAL
N&E-Natural	3	80	2.4
S-Low Int Commercial	1	15	0.15
W-High Vol Highway	1	5	0.05
			0
			0
LU TOTAL			2.6

PRETREATMENT CATEGORY

PRETREATMENT CATEGORY	SCORE	% AREA	SUB TOTAL
Natural	3	100	3
			0
			0
			0
			0
PT TOTAL			3

WRAP SCORE

71.94%

WILDLIFE UTILIZATION

(Wildlife utilization should be in consideration of the suite of species that would inhabit and are endemic to the mature target wetland system and not just any wildlife.) Wildlife habitat is limited in size, but generally good. Limited upland and wetland habitat is present to the north and east. There is some amount of human disturbances associated with traffic to the west. These wetlands offer limited habitat for birds, small mammals, reptiles, amphibians.

WETLAND CANOPY

(Canopy is defined as woody vegetation with greater than 4 inch dbh.) The canopy is composed primarily of appropriate native species. Chinese tallow tree (*Triadica sebifera*), Japanese privet (*Ligustrum japonicum*), and Chinese privet (*L. sinense*) are minor components. Few snags are present. There is some evidence of natural recruitment.

WETLAND GROUND COVER

(Groundcover should be in consideration of endemic species of target wetland community.) Groundcover includes a diversity of appropriate herbaceous and woody species. Invasive exotic species, including downy maiden fern (*Thelypteris dentata*) and coral ardisia (*Ardisia crenata*), are very minor components. Lots of Chinese privet and Chinese tallow tree seedlings have appeared in the wetlands since last year.

HABITAT SUPPORT/BUFFER

(This is based upon habitats OUTSIDE the perimeter of the polygon.) To the north and east is natural forested uplands and wetlands that are limited in size and with limited connection to wildlife corridors. To the south is detention pond. To the west is a road.

FIELD HYDROLOGY

(Site specific based on conditions inside and outside the polygon.) The hydrology is adequate to maintain a wetland system, but it has been altered by surrounding development. Runoff from adjacent and upstream development has also altered the natural hydrology of the stream and these adjacent wetlands. New sandy sediment was observed in the stream channel and there are signs of head-cutting at the downstream end of the assessment area.

WQ INPUT & TREATMENT

(This is based upon habitats OUTSIDE the perimeter of the polygon.) Water that enters the wetlands comes from adjacent forested uplands and other primarily natural, undeveloped areas.

Site: J4-1 – Joe's Branch East of Town Center Avenue

Region: Coastal Plain

USDA Scientific Name	C Value	Duration	Growth Habitat	Native Status	Indicator Status
<i>Acer rubrum</i>	3	Perennial	Tree	Native	FAC
<i>Amoglossum ovatum</i>	9	Perennial	Forb/herb	Native	FACW
<i>Arundinaria gigantea</i>	5	Perennial	Subshrub, Shrub, Graminoid	Native	FACW
<i>Bidens mitis</i>	6	Annual	Forb/herb	Native	OBL
<i>Bignonia capreolata</i>	4	Perennial	Vine	Native	FAC
<i>Carex glaucescens</i>	7	Perennial	Graminoid	Native	OBL
<i>Carex granularis</i>	5	Perennial	Graminoid	Native	FACW
<i>Chasmanthium laxum</i>	5	Perennial	Graminoid	Native	FACW
<i>Chionanthus virginicus</i>	7	Perennial	Tree, Shrub	Native	FACU
<i>Clethra alnifolia</i>	6	Perennial	Shrub	Native	FACW
<i>Conoclinium coelestinum</i>	4	Perennial	Forb/herb	Native	FAC
<i>Cyperus pseudovegetus</i>	3	Perennial	Graminoid	Native	FACW
<i>Cyrilla racemiflora</i>	6	Perennial	Tree, Shrub	Native	FACW
<i>Decumaria barbara</i>	6	Perennial	Vine	Native	FACW
<i>Dichanthelium scabriusculum</i>	4	Perennial	Graminoid	Native	OBL
<i>Eupatorium fistulosum</i>	6	Perennial	Forb/herb	Native	FACW
<i>Ilex coriacea</i>	7	Perennial	Tree, Shrub	Native	FACW
<i>Ilex opaca</i>	5	Perennial	Tree, Shrub	Native	FAC
<i>Ilex vomitoria</i>	5	Perennial	Tree, Shrub	Native	FAC
<i>Itea virginica</i>	7	Perennial	Shrub	Native	FACW
<i>Juncus effusus</i>	3	Perennial	Graminoid	Native	OBL
<i>Juniperus virginiana</i>		Perennial	Tree	Native	FACU
<i>Ligustrum sinense</i>	0	Perennial	Tree, Shrub	Introduced	FAC
<i>Liquidambar styraciflua</i>	3	Perennial	Tree	Native	FAC
<i>Liriodendron tulipifera</i>		Perennial	Tree	Native	FACU
<i>Lonicera japonica</i>	0	Perennial	Vine	Introduced	FAC
<i>Lygodium japonicum</i>	0	Perennial	Vine, Forb/herb	Introduced	FAC
<i>Magnolia virginiana</i>	6	Perennial	Tree, Shrub	Native	FACW
<i>Mikania scandens</i>	4	Perennial	Vine, Forb/herb	Native	FACW
<i>Mitchella repens</i>		Perennial	Subshrub, Forb/herb	Native	FACU
<i>Morella carolinensis</i>	7	Perennial	Tree, Shrub	Native	FACW
<i>Morella cerifera</i>	4	Perennial	Tree, Subshrub, Shrub	Native	FAC
<i>Nyssa biflora</i>	7	Perennial	Tree	Native	OBL
<i>Osmunda cinnamomea</i>	7	Perennial	Forb/herb	Native	FACW
<i>Osmunda regalis</i>	7	Perennial	Forb/herb	Native	OBL
<i>Persea palustris</i>	7	Perennial	Tree, Shrub	Native	FACW
<i>Phyllanthus urinaria</i>	0	Annual	Forb/herb	Introduced	FAC
<i>Pinus taeda</i>	2	Perennial	Tree	Native	FAC
<i>Quercus nigra</i>	3	Perennial	Tree	Native	FAC
<i>Rhynchospora capitellata</i>	6	Perennial	Graminoid	Native	OBL
<i>Rhynchospora glomerata</i>	5	Perennial	Graminoid	Native	OBL
<i>Rubus argutus</i>	2	Perennial	Subshrub	Native	FAC
<i>Sagittaria latifolia</i>	5	Perennial	Forb/herb	Native	OBL
<i>Sida rhombifolia</i>		Annual, Perennial	Subshrub, Forb/herb	Native	FACU
<i>Smilax laurifolia</i>	5	Perennial	Shrub, Vine	Native	FACW
<i>Symphotrichum lateriflorum</i>	5	Perennial	Forb/herb	Native	FAC

Site: J4-1 – Joe’s Branch East of Town Center Avenue
 Region: Coastal Plain

Metric Name	Calculated Value
Total Number of Species with Assigned C-values (N)	50
Mean Coefficient of Conservatism (C)	4.68
Mean C (native species only)	5.2
Floristic Quality Index (FQI) (all species)	33.09
Adjusted FQI (native species only)	34.88
Total Number of Species	55
Total Number of Native Species	50
Percent Tolerant Species	28
Percent Intolerant Species	26
Percent Wetness	90.74

JA – Unnamed Tributary to Joe's Branch North of Town Center Avenue

☐ PROPOSED
☒ EXISTING CONDITIONS

WETLAND RAPID ASSESSMENT PROCEDURE

COUNTY: **Baldwin** PROJECT: **DATE** REVIEWER: **FLUCCS CODE**
 APP. #: **JA** MBNEP D'Olive Creek **11/26/2016** **Gena Todia** WETLAND TYPE: ☒ FORESTED ☐ Non-Forested

LAND USE CATEGORY	WETLAND AREA	SECONDARY IMPACTS	MELALEUCA INVASION >50%
Natural	50 M ACRES	<input type="checkbox"/> NO <input type="checkbox"/> YES % =	<input type="checkbox"/> NO <input type="checkbox"/> YES
	ACRES OF IMPACT	ACRES	

WILD LIFE UTILIZATION

1

WRAP SCORE

WETLAND CANOPY

0

44.44%

WETLAND GROUND COVER

1.5

HABITAT SUPPORT / BUFFER

1.75

BUFFER TYPE	SCORE	% AREA	SUB TOTAL
N-Natural	2.5	50	1.25
S-Road/Commercial	1	50	0.5
			0
			0
			0

FIELD HYDROLOGY

2

WATER QUALITY INPUT & TREATMENT

1.75

LAND USE CATEGORY	SCORE	% AREA	SUB TOTAL
N-Natural	3	50	1.5
S-Road/Commercial	1	50	0.5
			0
			0
			0
LU TOTAL			2

PRETREATMENT CATEGORY

PRETREATMENT CATEGORY	SCORE	% AREA	SUB TOTAL
Natural	3	50	1.5
No Treatment	0	50	0
			0
			0
			0
PT TOTAL			1.5

WILDLIFE UTILIZATION

(Wildlife utilization should be in consideration of the suite of species that would inhabit and are endemic to the mature target wetland system and not just any wildlife.) Wildlife habitat is degraded and limited in size. Limited upland and wetland habitat is present to the north, northeast, and east. There is some amount of human disturbances associated with traffic on surrounding roads and commercial development. These wetlands do offer very limited habitat for birds, small mammals, reptiles, amphibians.

WETLAND CANOPY

(Canopy is defined as woody vegetation with greater than 4 inch dbh.) The canopy that should be present has been removed at some time in the past and is completely lacking.

WETLAND GROUND COVER

(Groundcover should be in consideration of endemic species of target wetland community.) Groundcover includes a diversity of appropriate, mostly common, herbaceous and woody species; however, several invasive exotics, including downy maiden fern (Thelypteris dentata), torpedo grass (Panicum repens), and Vasey grass (Paspalum urvillei), are also present. Common cat-tail (Typha latifolia) is also present.

HABITAT SUPPORT/BUFFER

(This is based upon habitats OUTSIDE the perimeter of the polygon.) To the north is natural forested uplands that are limited in size and with limited connection to wildlife corridors. To the south is a narrow (~70 ft.) of dense, young loblolly pine (Pinus taeda), then Town Center Avenue. To the south of the road is commercial development with no connection to wildlife corridors.

FIELD HYDROLOGY

(Site specific based on conditions inside and outside the polygon.) The hydrology is adequate to maintain a wetland system, but it has been altered by surrounding development. Runoff from adjacent and upstream development has also altered the natural hydrology of the stream and these adjacent wetlands.

WQ INPUT & TREATMENT

(This is based upon habitats OUTSIDE the perimeter of the polygon.) Water that enters the wetlands comes from adjacent forested uplands and runoff from the commercial development to the north.

Site: JA – Unnamed Tributary to Joe’s Branch North of Town Center Avenue
 Region: Coastal Plain

USDA Scientific Name	C Value	Duration	Growth Habitat	Native Status	Indicator Status
<i>Andropogon glomeratus</i>	3	Perennial	Graminoid	Native	FACW
<i>Baccharis halimifolia</i>	3	Perennial	Tree, Shrub	Native	FAC
<i>Bacopa monnieri</i>	3	Perennial	Forb/herb	Native	OBL
<i>Bidens alba</i>		Annual, Perennial	Forb/herb	Native	
<i>Callicarpa americana</i>		Perennial	Shrub	Native	FACU
<i>Chamaesyce hyssopifolia</i>	2	Annual, Perennial	Forb/herb	Native	FAC
<i>Cinnamomum camphora</i>	0	Perennial	Tree	Introduced	UPL
<i>Conoclinium coelestinum</i>	4	Perennial	Forb/herb	Native	FAC
<i>Cyperus haspan</i>	5	Perennial	Graminoid	Native	OBL
<i>Diospyros virginiana</i>	4	Perennial	Tree	Native	FAC
<i>Eupatorium capillifolium</i>		Perennial	Forb/herb	Native	FACU
<i>Eupatorium perfoliatum</i>	4	Perennial	Forb/herb	Native	FACW
<i>Juncus effusus</i>	3	Perennial	Graminoid	Native	OBL
<i>Ligustrum sinense</i>	0	Perennial	Tree, Shrub	Introduced	FAC
<i>Liquidambar styraciflua</i>	3	Perennial	Tree	Native	FAC
<i>Liriodendron tulipifera</i>		Perennial	Tree	Native	FACU
<i>Ludwigia alternifolia</i>	4	Perennial	Forb/herb	Native	OBL
<i>Ludwigia octovalvis</i>	2	Perennial	Subshrub, Forb/herb	Native	OBL
<i>Magnolia grandiflora</i>	4	Perennial	Tree	Native	FAC
<i>Mikania scandens</i>	4	Perennial	Vine, Forb/herb	Native	FACW
<i>Morella cerifera</i>	4	Perennial	Tree, Subshrub, Shrub	Native	FAC
<i>Panicum repens</i>	0	Perennial	Graminoid	Introduced	FACW
<i>Paspalum urvillei</i>	0	Perennial	Graminoid	Introduced	FAC
<i>Phyllanthus urinaria</i>	0	Annual	Forb/herb	Introduced	FAC
<i>Platanus occidentalis</i>	5	Perennial	Tree	Native	FACW
<i>Polygonum punctatum</i>	4	Annual, Perennial	Forb/herb	Native	
<i>Rhynchospora caduca</i>	6	Perennial	Graminoid	Native	OBL
<i>Rhynchospora capitellata</i>	6	Perennial	Graminoid	Native	OBL
<i>Rubus argutus</i>	2	Perennial	Subshrub	Native	FAC
<i>Rubus trivialis</i>		Perennial	Subshrub, Vine	Native	FACU
<i>Sagittaria latifolia</i>	5	Perennial	Forb/herb	Native	OBL
<i>Salix nigra</i>	3	Perennial	Tree	Native	OBL
<i>Scirpus cyperinus</i>	3	Perennial	Graminoid	Native	OBL
<i>Sesbania drummondii</i>	2	Perennial	Subshrub, Forb/herb	Native	FACW
<i>Solidago altissima</i>		Perennial	Forb/herb	Native	FACU
<i>Symphotrichum lateriflorum</i>	5	Perennial	Forb/herb	Native	FAC
<i>Thelypteris dentata</i>	0	Perennial	Forb/herb	Native	FACW
<i>Thelypteris kunthii</i>	4	Perennial	Forb/herb	Native	FACW
<i>Thelypteris palustris</i>	7	Perennial	Forb/herb	Native	OBL
<i>Triadica sebifera</i>	0	Perennial	Tree	Introduced	FAC
<i>Typha latifolia</i>	2	Perennial	Forb/herb	Native	OBL

Site: JA – Unnamed Tributary to Joe’s Branch North of Town Center Avenue
 Region: Coastal Plain

Metric Name	Calculated Value
Total Number of Species with Assigned C-values (N)	35
Mean Coefficient of Conservatism (C)	3.03
Mean C (native species only)	3.66
Floristic Quality Index (FQI) (all species)	17.92
Adjusted FQI (native species only)	19.68
Total Number of Species	41
Total Number of Native Species	35
Percent Tolerant Species	54.29
Percent Intolerant Species	2.86
Percent Wetness	84.62

JB – UT to Joe's Branch Northeast of Town Center Avenue

☐ PROPOSED
☒ EXISTING CONDITIONS

WETLAND RAPID ASSESSMENT PROCEDURE

COUNTY: **Baldwin** PROJECT: **DATE** REVIEWER: **FLUCCS CODE**
 APP. #: **JB** MBNEP D'Olive Creek **11/27/2016** **Gena Todia** WETLAND TYPE: ☐ FORESTED ☒ Non-ForestED

LAND USE CATEGORY Semi-Natural	WETLAND AREA 50 M ACRES	SECONDARY IMPACTS <input type="checkbox"/> NO <input type="checkbox"/> YES % =	MELALEUCA INVASION >50% <input type="checkbox"/> NO <input type="checkbox"/> YES
	ACRES OF IMPACT	ACRES	

WILD LIFE UTILIZATION

1

WETLAND CANOPY

0

WETLAND GROUND COVER

1.5

HABITAT SUPPORT / BUFFER

2

BUFFER TYPE	SCORE	% AREA	SUB TOTAL
Semi-Natural	2	100	2
			0
			0
			0
			0

FIELD HYDROLOGY

1

WATER QUALITY INPUT & TREATMENT

1.55

LAND USE CATEGORY	SCORE	% AREA	SUB TOTAL
E,W,S-Natural	3	90	2.7
N-Road/Commerical	1	10	0.1
			0
			0
			0
LU TOTAL			2.8

PRETREATMENT CATEGORY

PRETREATMENT CATEGORY	SCORE	% AREA	SUB TOTAL
Natural	3	10	0.3
No Treatment	0	90	0
			0
			0
			0
PT TOTAL			0.3

WRAP SCORE

39.17%

WILDLIFE UTILIZATION

(Wildlife utilization should be in consideration of the suite of species that would inhabit and are endemic to the mature target wetland system and not just any wildlife.) Wildlife habitat is degraded and limited in size. Limited upland habitat is present to the south, east, and west. A busy highway is to the north. There is some amount of human disturbances associated with traffic and nearby development. These wetlands do offer very limited habitat for birds, small mammals, reptiles, amphibians.

WETLAND CANOPY

(Canopy is defined as woody vegetation with greater than 4 inch dbh.) The canopy that should be present has been removed and is completely lacking.

WETLAND GROUND COVER

(Groundcover should be in consideration of endemic species of target wetland community.) Groundcover includes a diversity of appropriate, mostly common, herbaceous and woody species; however, several invasive exotics, including Vasey grass (Paspalum urvillei), Chinese tallow tree (Triadica sebifera), kudzu (Pueraria montana), Japanese climbing fern (Lygodium japonicum), cogongrass (Imperata cylindrica), and gripeweed (Phyllanthus urinaria) compose a significant percentage of the groundcover present.

HABITAT SUPPORT/BUFFER

(This is based upon habitats OUTSIDE the perimeter of the polygon.) The assessment area is surrounded by forested uplands that are greater than 30 ft. but less than 300 ft. in width. The quality of the buffer is low to medium, but does provide some habitat support. Surrounding the forested areas are commercial and residential development and roads. A somewhat intact wildlife corridor exists to the south and southeast.

FIELD HYDROLOGY

(Site specific based on conditions inside and outside the polygon.) It is questionable that wetland hydrology exists within the flood plain adjacent to the new rip-rap-lined stream channel. Runoff from adjacent and upstream development has also altered the natural hydrology of the stream and any remaining adjacent wetlands.

WQ INPUT & TREATMENT

(This is based upon habitats OUTSIDE the perimeter of the polygon.) Water that enters this area comes primarily from highway runoff that is to the north. Some water enters from adjacent forested land.

Site: JB – UT to Joe's Branch Northeast of Town Center Avenue

Region: Coastal Plain

USDA Scientific Name	C Value	Duration	Growth Habitat	Native Status	Indicator Status
<i>Acalypha gracilens</i>	3	Annual	Forb/herb	Native	FAC
<i>Acer rubrum</i>	3	Perennial	Tree	Native	FAC
<i>Ambrosia artemisiifolia</i>		Annual	Forb/herb	Native/Introduced	FACU
<i>Andropogon glomeratus</i>	3	Perennial	Graminoid	Native	FACW
<i>Andropogon virginicus</i>	3	Perennial	Graminoid	Native	FAC
<i>Baccharis halimifolia</i>	3	Perennial	Tree, Shrub	Native	FAC
<i>Bacopa monnieri</i>	3	Perennial	Forb/herb	Native	OBL
<i>Bidens alba</i>		Annual, Perennial	Forb/herb	Native	
<i>Chamaesyce hyssopifolia</i>	2	Annual, Perennial	Forb/herb	Native	FAC
<i>Conoclinium coelestinum</i>	4	Perennial	Forb/herb	Native	FAC
<i>Eleocharis obtusa</i>	3	Annual, Perennial	Graminoid	Native	OBL
<i>Eupatorium capillifolium</i>		Perennial	Forb/herb	Native	FACU
<i>Eupatorium mikanioides</i>		Perennial	Forb/herb	Native	FACW
<i>Eupatorium perfoliatum</i>	4	Perennial	Forb/herb	Native	FACW
<i>Fuirena squarrosa</i>	5	Perennial	Graminoid	Native	OBL
<i>Helianthus angustifolius</i>	5	Perennial	Forb/herb	Native	FACW
<i>Juncus effusus</i>	3	Perennial	Graminoid	Native	OBL
<i>Juncus validus</i>	5	Perennial	Graminoid	Native	FACW
<i>Liquidambar styraciflua</i>	3	Perennial	Tree	Native	FAC
<i>Liriodendron tulipifera</i>		Perennial	Tree	Native	FACU
<i>Ludwigia octovalvis</i>	2	Perennial	Subshrub, Forb/herb	Native	OBL
<i>Lygodium japonicum</i>	0	Perennial	Vine, Forb/herb	Introduced	FAC
<i>Magnolia virginiana</i>	6	Perennial	Tree, Shrub	Native	FACW
<i>Mikania scandens</i>	4	Perennial	Vine, Forb/herb	Native	FACW
<i>Morella cerifera</i>	4	Perennial	Tree, Subshrub, Shrub	Native	FAC
<i>Nyssa aquatica</i>	7	Perennial	Tree	Native	OBL
<i>Nyssa biflora</i>	7	Perennial	Tree	Native	OBL
<i>Panicum rigidulum</i>	4	Perennial	Graminoid	Native	FACW
<i>Paspalum urvillei</i>	0	Perennial	Graminoid	Introduced	FAC
<i>Phyllanthus urinaria</i>	0	Annual	Forb/herb	Introduced	FAC
<i>Pinus taeda</i>	2	Perennial	Tree	Native	FAC
<i>Pluchea camphorata</i>	5	Annual, Perennial	Forb/herb	Native	FACW
<i>Pontederia cordata</i>	6	Perennial	Forb/herb	Native	OBL
<i>Rhynchospora glomerata</i>	5	Perennial	Graminoid	Native	OBL
<i>Rubus trivialis</i>		Perennial	Subshrub, Vine	Native	FACU
<i>Sagittaria latifolia</i>	5	Perennial	Forb/herb	Native	OBL
<i>Salix nigra</i>	3	Perennial	Tree	Native	OBL
<i>Scoparia dulcis</i>	3	Annual, Perennial	Forb/herb, Subshrub	Native	FAC
<i>Senna obtusifolia</i>		Annual, Perennial	Forb/herb, Subshrub	Native	FACU
<i>Sesbania vesicaria</i>	2	Annual	Forb/herb, Subshrub	Native	FAC
<i>Solidago altissima</i>		Perennial	Forb/herb	Native	FACU
<i>Taxodium distichum</i>	6	Perennial	Tree	Native	OBL
<i>Triadica sebifera</i>	0	Perennial	Tree	Introduced	FAC
<i>Typha latifolia</i>	2	Perennial	Forb/herb	Native	OBL

Site: JB – UT to Joe's Branch Northeast of Town Center Avenue

Region: Coastal Plain

Metric Name	Calculated Value
Total Number of Species with Assigned C-values (N)	36
Mean Coefficient of Conservatism (C)	3.47
Mean C (native species only)	3.91
Floristic Quality Index (FQI) (all species)	20.83
Adjusted FQI (native species only)	22.10
Total Number of Species	44
Total Number of Native Species	40
Percent Tolerant Species	55.56
Percent Intolerant Species	5.56
Percent Wetness	86.05

D4-D6(1) – D'Olive Creek Restoration Area Between I-10 & US 90

☐ PROPOSED
☒ EXISTING CONDITIONS

WETLAND RAPID ASSESSMENT PROCEDURE

COUNTY: **Baldwin** PROJECT: **DATE** REVIEWER: **FLUCCS CODE**
 APP. #: **D4-D6(1)** MBNEP D'Olive Creek **11/27/2016** **Gena Todia** WETLAND TYPE: ☐ FORESTED ☒ Non-ForestED

LAND USE CATEGORY	WETLAND AREA	SECONDARY IMPACTS	MELALEUCA INVASION >50%
Restored Corridor	50 M ACRES	<input type="checkbox"/> NO <input type="checkbox"/> YES % =	<input type="checkbox"/> NO <input type="checkbox"/> YES
	ACRES OF IMPACT	ACRES	

WILD LIFE UTILIZATION

0.5

WETLAND CANOPY

0

WETLAND GROUND COVER

0.5

HABITAT SUPPORT / BUFFER

1.5

BUFFER TYPE	SCORE	% AREA	SUB TOTAL
Natural	2.5	50	1.25
Restoration Area	0.5	50	0.25
			0
			0
			0

FIELD HYDROLOGY

3

WATER QUALITY INPUT & TREATMENT

2

LAND USE CATEGORY	SCORE	% AREA	SUB TOTAL
E,W-Natural	3	50	1.5
N-Interstate 10	1	50	0.5
			0
			0
			0
LU TOTAL			2

PRETREATMENT CATEGORY

PRETREATMENT CATEGORY	SCORE	% AREA	SUB TOTAL
Natural	3	50	1.5
Grass Swale	1	50	0.5
			0
			0
			0
PT TOTAL			2

WRAP SCORE

41.67%

WILDLIFE UTILIZATION

(Wildlife utilization should be in consideration of the suite of species that would inhabit and are endemic to the mature target wetland system and not just any wildlife.) The stream channel and adjacent flood plain wetlands were recently rebuilt/restored and had not yet been replanted. A few herbaceous plants were beginning to colonize. Essentially no wildlife habitat was currently present, so utilization is expected to be extremely low at this point.

WETLAND CANOPY

(Canopy is defined as woody vegetation with greater than 4 inch dbh.) The canopy that should be present has been lost to erosion or removed and is completely lacking.

WETLAND GROUND COVER

(Groundcover should be in consideration of endemic species of target wetland community.) Since this restoration project was completed in recent months and drought conditions persisted into the fall, very little groundcover was present. Several appropriate native herbaceous species were beginning to colonize the wetlands in the vicinity of the assessment area, but overall cover was sparse.

HABITAT SUPPORT/BUFFER

(This is based upon habitats OUTSIDE the perimeter of the polygon.) To the east and west of the assessment area is fairly extensive natural forestland, the quality of which has been impacted to some extent by human activities. To the north and south is restoration area that has essentially no habitat yet present. Upland and wetland habitat is present outside of the assessment area, but is ultimately surrounded by major highways and other development.

FIELD HYDROLOGY

(Site specific based on conditions inside and outside the polygon.) It appears that the restoration project has fully restored wetland hydrology to the wetlands adjacent to the stream channel.

WQ INPUT & TREATMENT

(This is based upon habitats OUTSIDE the perimeter of the polygon.) Water that enters this area comes primarily from highway runoff that is to the north. Some water enters from adjacent forested land.

Site: D4-D6(1) – D'Olive Creek Restoration Area Between I-10 & US 90

Region: Coastal Plain

USDA Scientific Name	C Value	Duration	Growth Habitat	Native Status	Indicator Status
<i>Cyperus lanceolatus</i>	3	Perennial	Graminoid	Native	FACW
<i>Cyperus retrorsus</i>	2	Perennial	Graminoid	Native	FACU
<i>Echinochloa colona</i>	0	Annual	Graminoid	Introduced	FACW
<i>Eleocharis flavescens</i>	5	Perennial	Graminoid	Native	OBL
<i>Eleocharis parvula</i>	6	Annual, Perennial	Graminoid	Native	OBL
<i>Fuirena squarrosa</i>	5	Perennial	Graminoid	Native	OBL
<i>Ludwigia alternifolia</i>	4	Perennial	Forb/herb	Native	OBL
<i>Ludwigia octovalvis</i>	2	Perennial	Subshrub, Forb/herb	Native	OBL
<i>Rhynchospora macrostachya</i>	6	Perennial	Graminoid	Native	OBL
<i>Sagittaria latifolia</i>	5	Perennial	Forb/herb	Native	OBL
<i>Triadica sebifera</i>	0	Perennial	Tree	Introduced	FAC
<i>Viola primulifolia</i>				Not Available	
<i>Woodwardia areolata</i>	6	Perennial	Forb/herb	Native	OBL

Site: D4-D6(1) – D'Olive Creek Restoration Area Between I-10 & US 90

Region: Coastal Plain

Metric Name	Calculated Value
Total Number of Species with Assigned C-values (N)	12
Mean Coefficient of Conservatism (C)	3.67
Mean C (native species only)	4.4
Floristic Quality Index (FQI) (all species)	12.70
Adjusted FQI (native species only)	13.91
Total Number of Species	13
Total Number of Native Species	11
Percent Tolerant Species	41.67
Percent Intolerant Species	0
Percent Wetness	91.67

D4-D6(2) – D'Olive Creek Undisturbed Forested Wetland Between I-10 & US 90

☐ PROPOSED
☒ EXISTING CONDITIONS

WETLAND RAPID ASSESSMENT PROCEDURE

COUNTY: **Baldwin** PROJECT: **DATE** REVIEWER: **FLUCCS CODE**
 APP. #: **D4-D6(2)** MBNEP D'Olive Creek **11/27/2016** **Gena Todia** WETLAND TYPE: ☐ FORESTED ☒ Non-ForestED

LAND USE CATEGORY	WETLAND AREA	SECONDARY IMPACTS	MELALEUCA INVASION >50%
Natural	50 M ACRES	<input type="checkbox"/> NO <input type="checkbox"/> YES % =	<input type="checkbox"/> NO <input type="checkbox"/> YES
	ACRES OF IMPACT	ACRES	

WILD LIFE UTILIZATION

2

WETLAND CANOPY

2.5

WETLAND GROUND COVER

2.5

HABITAT SUPPORT / BUFFER

1.5

BUFFER TYPE	SCORE	% AREA	SUB TOTAL
Natural	2.5	50	1.25
Restoration Area	0.5	50	0.25
			0
			0
			0

WRAP SCORE

79.17%

FIELD HYDROLOGY

3

WATER QUALITY INPUT & TREATMENT

2.75

LAND USE CATEGORY	SCORE	% AREA	SUB TOTAL
Natural	2.75	100	2.75
			0
			0
			0
			0
LU TOTAL			2.75

PRETREATMENT CATEGORY

PRETREATMENT CATEGORY	SCORE	% AREA	SUB TOTAL
Natural	2.75	100	2.75
			0
			0
			0
			0
PT TOTAL			2.75

WILDLIFE UTILIZATION

(Wildlife utilization should be in consideration of the suite of species that would inhabit and are endemic to the mature target wetland system and not just any wildlife.) Habitat quality is pretty good, but has suffered some degree of degradation associated with past human disturbance. It is expected that songbirds, mammals, reptiles, and amphibians utilize the habitat that is present. Adequate upland food sources and cover are present for some distance to the west.

WETLAND CANOPY

(Canopy is defined as woody vegetation with greater than 4 inch dbh.) The canopy is primarily composed of native, appropriate species, with the exception of Chinese tallow tree (Triadica sebifera), which is a minor component. There is evidence of natural recruitment and the canopy appears generally healthy.

WETLAND GROUND COVER

(Groundcover should be in consideration of endemic species of target wetland community.) Groundcover is diverse and composed primarily of appropriate native species. Petersen's-spleenwort (Deparia petersenii), an invasive exotic fern, is a minor component.

HABITAT SUPPORT/BUFFER

(This is based upon habitats OUTSIDE the perimeter of the polygon.) To the west of the assessment area is fairly extensive natural forestland, the quality of which has been impacted to some extent by human activities. To the east is restoration area that has essentially no habitat yet present. Upland and wetland habitat is present outside of the assessment area, but is ultimately surrounded by major highways and other development.

FIELD HYDROLOGY

(Site specific based on conditions inside and outside the polygon.) It appears that the restoration project has fully restored wetland hydrology to the wetlands adjacent to the stream channel.

WQ INPUT & TREATMENT

(This is based upon habitats OUTSIDE the perimeter of the polygon.) Water that enters this area comes primarily from rainfall and possibly some runoff from natural upland area. Water that flows through the flood plain adjacent to the stream channel does not reach this area, or if it does, it's only during extreme rainfall events.

Site: D4-D6(2) – D'Olive Creek Undisturbed Forested Wetland Between I-10 & US 90

Region: Coastal Plain

USDA Scientific Name	C Value	Duration	Growth Habitat	Native Status	Indicator Status
<i>Acer rubrum</i>	3	Perennial	Tree	Native	FAC
<i>Apteria aphylla</i>	9	Perennial	Forb/herb	Native	FACW
<i>Callicarpa americana</i>		Perennial	Shrub	Native	FACU
<i>Carex cherokeensis</i>	6	Perennial	Graminoid	Native	FACW
<i>Cinnamomum camphora</i>	0	Perennial	Tree	Introduced	UPL
<i>Cliftonia monophylla</i>	6	Perennial	Tree, Shrub	Native	OBL
<i>Cyrilla racemiflora</i>	6	Perennial	Tree, Shrub	Native	FACW
<i>Ilex cassine</i>	7	Perennial	Tree, Shrub	Native	FACW
<i>Ilex coriacea</i>	7	Perennial	Tree, Shrub	Native	FACW
<i>Ilex opaca</i>	5	Perennial	Tree, Shrub	Native	FAC
<i>Ilex vomitoria</i>	5	Perennial	Tree, Shrub	Native	FAC
<i>Itea virginica</i>	7	Perennial	Shrub	Native	FACW
<i>Juniperus virginiana</i>		Perennial	Tree	Native	FACU
<i>Ligustrum sinense</i>	0	Perennial	Tree, Shrub	Introduced	FAC
<i>Liriodendron tulipifera</i>		Perennial	Tree	Native	FACU
<i>Lonicera japonica</i>	0	Perennial	Vine	Introduced	FAC
<i>Lygodium japonicum</i>	0	Perennial	Vine, Forb/herb	Introduced	FAC
<i>Lyonia lucida</i>	7	Perennial	Shrub	Native	FACW
<i>Magnolia virginiana</i>	6	Perennial	Tree, Shrub	Native	FACW
<i>Morella caroliniensis</i>	7	Perennial	Tree, Shrub	Native	FACW
<i>Morella inodora</i>	8	Perennial	Tree, Shrub	Native	OBL
<i>Nyssa biflora</i>	7	Perennial	Tree	Native	OBL
<i>Osmanthus americanus</i>	7	Perennial	Tree, Shrub	Native	FAC
<i>Osmunda cinnamomea</i>	7	Perennial	Forb/herb	Native	FACW
<i>Osmunda regalis</i>	7	Perennial	Forb/herb	Native	OBL
<i>Persea palustris</i>	7	Perennial	Tree, Shrub	Native	FACW
<i>Pinus taeda</i>	2	Perennial	Tree	Native	FAC
<i>Quercus nigra</i>	3	Perennial	Tree	Native	FAC
<i>Rubus argutus</i>	2	Perennial	Subshrub	Native	FAC
<i>Smilax laurifolia</i>	5	Perennial	Shrub, Vine	Native	FACW
<i>Thelypteris kunthii</i>	4	Perennial	Forb/herb	Native	FACW
<i>Toxicodendron radicans</i>	3	Perennial	Shrub, Forb/herb, Subshrub, Vine	Native	FAC
<i>Triadica sebifera</i>	0	Perennial	Tree	Introduced	FAC
<i>Vaccinium corymbosum</i>	6	Perennial	Shrub	Native	FACW
<i>Viburnum nudum</i>	7	Perennial	Tree, Shrub	Native	FACW
<i>Viola primulifolia</i>				Not Available	
<i>Vitis rotundifolia</i>	4	Perennial	Vine	Native	FAC
<i>Woodwardia areolata</i>	6	Perennial	Forb/herb	Native	OBL

Site: D4-D6(2) – D'Olive Creek Undisturbed Forested Wetland Between I-10 & US 90
 Region: Coastal Plain

Metric Name	Calculated Value
Total Number of Species with Assigned C-values (N)	34
Mean Coefficient of Conservatism (C)	4.88
Mean C (native species only)	5.72
Floristic Quality Index (FQI) (all species)	28.47
Adjusted FQI (native species only)	30.83
Total Number of Species	38
Total Number of Native Species	33
Percent Tolerant Species	29.41
Percent Intolerant Species	38.24
Percent Wetness	89.19

DA3 – UT to D'Olive Creek East of CR 13

☐ PROPOSED
☒ EXISTING CONDITIONS

WETLAND RAPID ASSESSMENT PROCEDURE

COUNTY: **Baldwin** PROJECT: **DATE** **REVIEWER** **FLUCCS CODE** **WETLAND TYPE:** ☐ FORESTED ☒ Non-ForestED
 APP. #: **DA3** **MBNEP D'Olive Creek** **11/27/2016** **Gena Todia**

LAND USE CATEGORY	WETLAND AREA	SECONDARY IMPACTS	MELALEUCA INVASION >50%
Natural	50 M ACRES	<input type="checkbox"/> NO <input type="checkbox"/> YES % =	<input type="checkbox"/> NO <input type="checkbox"/> YES
	ACRES OF IMPACT	ACRES	

WILD LIFE UTILIZATION

2

WETLAND CANOPY

2.5

WETLAND GROUND COVER

2

HABITAT SUPPORT / BUFFER

2.5

BUFFER TYPE	SCORE	% AREA	SUB TOTAL
Natural	2.5	100	2.5
			0
			0
			0
			0

FIELD HYDROLOGY

0.5

WATER QUALITY INPUT & TREATMENT

2.35

LAND USE CATEGORY	SCORE	% AREA	SUB TOTAL
Natural	3	80	2.4
Single-Family Res	1.5	20	0.3
			0
			0
			0
LU TOTAL			2.7

PRETREATMENT CATEGORY

PRETREATMENT CATEGORY	SCORE	% AREA	SUB TOTAL
Natural	3	50	1.5
Dry Detention	1	50	0.5
			0
			0
			0
PT TOTAL			2

WRAP SCORE

65.83%

WILDLIFE UTILIZATION

(Wildlife utilization should be in consideration of the suite of species that would inhabit and are endemic to the mature target wetland system and not just any wildlife.) Habitat quality is pretty good, but has suffered some degree of degradation associated with past human disturbance and fire suppression. It is expected that songbirds, mammals, reptiles, and amphibians utilize the habitat that is present. Adequate upland food sources and cover are present for some distance surrounding the assessment area.

WETLAND CANOPY

(Canopy is defined as woody vegetation with greater than 4 inch dbh.) The canopy is composed of native, appropriate species. There is evidence of natural recruitment and the canopy appears generally healthy.

WETLAND GROUND COVER

(Groundcover should be in consideration of endemic species of target wetland community.) Groundcover is somewhat diverse and composed primarily of appropriate native species. However, several invasive exotic species are present, including Petersen's-spleenwort (*Deparia petersenii*), Japanese climbing fern (*Lygodium japonicum*), autumn fern (*Dryopteris erythrosora*), swordfern (*Macrothelypteris torresiana*), and seedlings of Chinese tallow tree (*Triadica sebifera*), Chinese privet (*Ligustrum sinense*), and camphor tree (*Cinnamomum camphora*).

HABITAT SUPPORT/BUFFER

(This is based upon habitats OUTSIDE the perimeter of the polygon.) Natural forestland surrounds the assessment area, the quality of which has been degraded to some extent by human activities and fire suppression. Habitat is present outside of the area, but ultimately is surrounded by highways and other development.

FIELD HYDROLOGY

(Site specific based on conditions inside and outside the polygon.) Because of head-cutting and down-cutting of the stream channels that run through this area, wetland hydrology has possibly been lost entirely. Groundwater seepage from adjacent upland areas contributes, but the severe collaps of the stream channels allows water to quickly drain from the site.

WQ INPUT & TREATMENT

(This is based upon habitats OUTSIDE the perimeter of the polygon.) Water that enters this area comes from adjacent natural areas and from a detention pond associated with a single-family residential subdivision.

Site: DA3 – UT to D'Olive Creek East of CR 13

Region: Coastal Plain

USDA Scientific Name	C Value	Duration	Growth Habitat	Native Status	Indicator Status
<i>Acer rubrum</i>	3	Perennial	Tree	Native	FAC
<i>Bignonia capreolata</i>	4	Perennial	Vine	Native	FAC
<i>Callicarpa americana</i>		Perennial	Shrub	Native	FACU
<i>Chasmanthium laxum</i>	5	Perennial	Graminoid	Native	FACW
<i>Cinnamomum camphora</i>	0	Perennial	Tree	Introduced	UPL
<i>Cyrilla racemiflora</i>	6	Perennial	Tree, Shrub	Native	FACW
<i>Decumaria barbara</i>	6	Perennial	Vine	Native	FACW
<i>Gordonia lasianthus</i>	8	Perennial	Tree, Shrub	Native	FACW
<i>Hamamelis virginiana</i>		Perennial	Tree, Shrub	Native	FACU
<i>Ilex coriacea</i>	7	Perennial	Tree, Shrub	Native	FACW
<i>Ilex opaca</i>	5	Perennial	Tree, Shrub	Native	FAC
<i>Ilex vomitoria</i>	5	Perennial	Tree, Shrub	Native	FAC
<i>Illicium floridanum</i>	7	Perennial	Tree, Shrub	Native	FACW
<i>Itea virginica</i>	7	Perennial	Shrub	Native	FACW
<i>Leucothoe axillaris</i>	7	Perennial	Shrub	Native	FACW
<i>Ligustrum sinense</i>	0	Perennial	Tree, Shrub	Introduced	FAC
<i>Liriodendron tulipifera</i>		Perennial	Tree	Native	FACU
<i>Lygodium japonicum</i>	0	Perennial	Vine, Forb/herb	Introduced	FAC
<i>Lyonia lucida</i>	7	Perennial	Shrub	Native	FACW
<i>Macrothelypteris torresiana</i>	0	Perennial	Forb/herb	Introduced	FACW
<i>Magnolia virginiana</i>	6	Perennial	Tree, Shrub	Native	FACW
<i>Mikania scandens</i>	4	Perennial	Vine, Forb/herb	Native	FACW
<i>Nyssa biflora</i>	7	Perennial	Tree	Native	OBL
<i>Osmunda cinnamomea</i>	7	Perennial	Forb/herb	Native	FACW
<i>Pinus taeda</i>	2	Perennial	Tree	Native	FAC
<i>Rubus trivialis</i>		Perennial	Subshrub, Vine	Native	FACU
<i>Smilax laurifolia</i>	5	Perennial	Shrub, Vine	Native	FACW
<i>Thelypteris dentata</i>	0	Perennial	Forb/herb	Native	FACW
<i>Thelypteris kunthii</i>	4	Perennial	Forb/herb	Native	FACW
<i>Triadica sebifera</i>	0	Perennial	Tree	Introduced	FAC
<i>Viburnum nudum</i>	7	Perennial	Tree, Shrub	Native	FACW
<i>Viola primulifolia</i>				Not Available	
<i>Vitis rotundifolia</i>	4	Perennial	Vine	Native	FAC
<i>Woodwardia areolata</i>	6	Perennial	Forb/herb	Native	OBL

Site: DA3 – UT to D'Olive Creek East of CR 13

Region: Coastal Plain

Metric Name	Calculated Value
Total Number of Species with Assigned C-values (N)	29
Mean Coefficient of Conservatism (C)	4.45
Mean C (native species only)	5.38
Floristic Quality Index (FQI) (all species)	23.95
Adjusted FQI (native species only)	26.33
Total Number of Species	34
Total Number of Native Species	29
Percent Tolerant Species	27.59
Percent Intolerant Species	31.03
Percent Wetness	84.85