

**WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region**

**Project/Site:** NASA - Stennis; 1,100 Acre Wetland Delineation **City/County:** Waveland - Hancock **Sampling Date:** 25-Oct-16

**Applicant/Owner:** NASA **State:** MS **Sampling Point:** Wet - 40

**Investigator(s):** Lars Larson, Randy Ellis **Section, Township, Range:** S 32 T 7 S R 16 W

**Landform (hillslope, terrace, etc.):** Floodplain **Local relief (concave, convex, none):** none **Slope:** 0.0 % / 0.0 °

**Subregion (LRR or MLRA):** LRR T **Lat.:** 30° 23' 43.163" N **Long.:** 89° 36' 49.831" W **Datum:** NAD83

**Soil Map Unit Name:** EsB, Escambia loam, 2 to 5 percent slopes **NWI classification:** PFO 1/4 C

**Are climatic/hydrologic conditions on the site typical for this time of year?** Yes  No  (If no, explain in Remarks.)  
**Are Vegetation**  , **Soil**  , **or Hydrology**  **significantly disturbed?** **Are "Normal Circumstances" present?** Yes  No   
**Are Vegetation**  , **Soil**  , **or Hydrology**  **naturally problematic?** (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: Bottom drainage area approximately 50-feet north of UKP - 40. Water comes through this area but appears to be impacted by road and small culvert that restrict water flow to the south.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one required; check all that apply)</b> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)		<b>Secondary Indicators (minimum of 2 required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  		
Remarks:		

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: Wet - 40

Tree Stratum (Plot size: 30 m )	Absolute % Cover	Rel.Strat. Cover	Dominant Species?	Indicator Status
1. <i>Nyssa biflora</i>	20	69.0%	<input checked="" type="checkbox"/>	OBL
2. <i>Liquidambar styraciflua</i>	5	17.2%	<input type="checkbox"/>	FAC
3. <i>Quercus nigra</i>	3	10.3%	<input type="checkbox"/>	FAC
4. <i>Triadica sebifera</i>	1	3.4%	<input type="checkbox"/>	FAC
5.	0	0.0%	<input type="checkbox"/>	
6.	0	0.0%	<input type="checkbox"/>	
7.	0	0.0%	<input type="checkbox"/>	
8.	0	0.0%	<input type="checkbox"/>	
50% of Total Cover:	14.5	20% of Total Cover: 5.8	29	= Total Cover

Sapling or Sapling/Shrub Stratum (Plot size: 30 m )	Absolute % Cover	Rel.Strat. Cover	Dominant Species?	Indicator Status
1. <i>Nyssa biflora</i>	10	41.7%	<input checked="" type="checkbox"/>	OBL
2. <i>Quercus nigra</i>	10	41.7%	<input checked="" type="checkbox"/>	FAC
3. <i>Acer rubrum</i>	3	12.5%	<input type="checkbox"/>	FAC
4. <i>Triadica sebifera</i>	1	4.2%	<input type="checkbox"/>	FAC
5.	0	0.0%	<input type="checkbox"/>	
6.	0	0.0%	<input type="checkbox"/>	
7.	0	0.0%	<input type="checkbox"/>	
8.	0	0.0%	<input type="checkbox"/>	
50% of Total Cover:	12	20% of Total Cover: 4.8	24	= Total Cover

Shrub Stratum (Plot size: 30 m )	Absolute % Cover	Rel.Strat. Cover	Dominant Species?	Indicator Status
1. <i>Quercus nigra</i>	5	41.7%	<input checked="" type="checkbox"/>	FAC
2. <i>Acer rubrum</i>	5	41.7%	<input checked="" type="checkbox"/>	FAC
3. <i>Triadica sebifera</i>	1	8.3%	<input type="checkbox"/>	FAC
4. <i>Diospyros virginiana</i>	1	8.3%	<input type="checkbox"/>	FAC
5.	0	0.0%	<input type="checkbox"/>	
6.	0	0.0%	<input type="checkbox"/>	
50% of Total Cover:	6	20% of Total Cover: 2.4	12	= Total Cover

Herb Stratum (Plot size: 30 m )	Absolute % Cover	Rel.Strat. Cover	Dominant Species?	Indicator Status
1. <i>Typha latifolia</i>	10	76.9%	<input checked="" type="checkbox"/>	OBL
2. <i>Scirpus expansus</i>	3	23.1%	<input checked="" type="checkbox"/>	OBL
3.	0	0.0%	<input type="checkbox"/>	
4.	0	0.0%	<input type="checkbox"/>	
5.	0	0.0%	<input type="checkbox"/>	
6.	0	0.0%	<input type="checkbox"/>	
7.	0	0.0%	<input type="checkbox"/>	
8.	0	0.0%	<input type="checkbox"/>	
9.	0	0.0%	<input type="checkbox"/>	
10.	0	0.0%	<input type="checkbox"/>	
11.	0	0.0%	<input type="checkbox"/>	
12.	0	0.0%	<input type="checkbox"/>	
50% of Total Cover:	6.5	20% of Total Cover: 2.6	13	= Total Cover

Woody Vine Stratum (Plot size: 30 m )	Absolute % Cover	Rel.Strat. Cover	Dominant Species?	Indicator Status
1. <i>Vitis rotundifolia</i>	2	66.7%	<input type="checkbox"/>	FAC
2. <i>Smilax laurifolia</i>	1	33.3%	<input type="checkbox"/>	FACW
3.	0	0.0%	<input type="checkbox"/>	
4.	0	0.0%	<input type="checkbox"/>	
5.	0	0.0%	<input type="checkbox"/>	
50% of Total Cover:	1.5	20% of Total Cover: 0.6	3	= Total Cover

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of: 29 Multiply by:

OBL species	<u>43</u>	x 1 =	<u>43</u>
FACW species	<u>1</u>	x 2 =	<u>2</u>
FAC species	<u>37</u>	x 3 =	<u>111</u>
FACU species	<u>0</u>	x 4 =	<u>0</u>
UPL species	<u>0</u>	x 5 =	<u>0</u>
Column Totals:	<u>81</u>	(A)	<u>156</u> (B)

Prevalence Index = B/A = 1.926

**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

**Hydrophytic Vegetation Present?** Yes  No

**SOIL**

Sampling Point: Wet - 40

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix			Redox Features				Texture	Remarks
	Color (moist)		%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR	3/1	98	10YR	7/2	2	D	M	Silt Loam
4-18	10YR	4/2	90	10YR	7/2	10	D	M	Silt Loam

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

<b>Hydric Soil Indicators:</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Polyvalue Below Surface (S8) (LRR S, T, U)	<input type="checkbox"/> 1 cm Muck (A9) (LRR O)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Thin Dark Surface (S9) (LRR S, T, U)	<input type="checkbox"/> 2 cm Muck (A10) (LRR S)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR O)	<input type="checkbox"/> Reduced Vertic (F18) (outside MLRA 150A,B)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (LRR P, S, T)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 153B)
<input type="checkbox"/> Organic Bodies (A6) (LRR P, T, U)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> 5 cm Mucky Mineral (A7) (LRR P, T, U)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Muck Presence (A8) (LRR U)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR P, T)	<input type="checkbox"/> Marl (F10) (LRR U)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Ochric (F11) (MLRA 151)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR O, P, T)	
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 150A)	<input type="checkbox"/> Umbric Surface (F13) (LRR P, T, U)	
<input type="checkbox"/> Sandy Muck Mineral (S1) (LRR O, S)	<input type="checkbox"/> Delta Ochric (F17) (MLRA 151)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Reduced Vertic (F18) (MLRA 150A, 150B)	
<input checked="" type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149A)	
<input checked="" type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	
<input type="checkbox"/> Dark Surface (S7) (LRR P, S, T, U)		

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

**Hydric Soil Present?**    Yes     No

Remarks:

**WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region**

**Project/Site:** NASA - Stennis: 1,100 Acre Wetland Delineation     
 **City/County:** Waveland - Hancock     
 **Sampling Date:** 25-Oct-16  
**Applicant/Owner:** NASA     
 **State:** MS     
 **Sampling Point:** Wet - 41  
**Investigator(s):** Lars Larson, Randy Ellis     
 **Section, Township, Range:** S 32      T 7 s      R 16 W  
**Landform (hillslope, terrace, etc.):** Floodplain     
 **Local relief (concave, convex, none):** none     
 **Slope:** 0.0 % / 0.0 \*  
**Subregion (LRR or MLRA):** LRR T     
 **Lat.:** 30° 23' 46.616" N     
 **Long.:** 89° 36' 57.298" W     
 **Datum:** NAD83  
**Soil Map Unit Name:** Su, Smithton fine sandy loam, frequently flooded     
 **NWI classification:** PFO 1/4 B

**Are climatic/hydrologic conditions on the site typical for this time of year?**      Yes  No       (If no, explain in Remarks.)  
**Are Vegetation**  , **Soil**  , **or Hydrology**  **significantly disturbed?**     
 **Are "Normal Circumstances" present?**      Yes  No   
**Are Vegetation**  , **Soil**  , **or Hydrology**  **naturally problematic?**     
 (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present?      Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area</b> <b>within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks:	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of 2 required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input checked="" type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ (includes capillary fringe)		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Dominant Species?

Sampling Point: Wet - 41

Tree Stratum (Plot size: 30 m )	Absolute % Cover	Rel. Strat. Cover	Indicator Status
1. <i>Pinus elliotii</i>	5	<input checked="" type="checkbox"/> 21.7%	FACW
2. <i>Nyssa biflora</i>	10	<input checked="" type="checkbox"/> 43.5%	OBL
3. <i>Magnolia virginiana</i>	5	<input checked="" type="checkbox"/> 21.7%	FACW
4. <i>Acer rubrum</i>	2	<input type="checkbox"/> 8.7%	FAC
5. <i>Cyrilla racemiflora</i>	1	<input type="checkbox"/> 4.3%	FACW
6.	0	<input type="checkbox"/> 0.0%	
7.	0	<input type="checkbox"/> 0.0%	
8.	0	<input type="checkbox"/> 0.0%	
50% of Total Cover:	11.5	20% of Total Cover: 4.6	23 = Total Cover

Sapling or Sapling/Shrub Stratum (Plot size: 30 m )	Absolute % Cover	Rel. Strat. Cover	Indicator Status
1. <i>Pinus elliotii</i>	5	<input type="checkbox"/> 16.7%	FACW
2. <i>Cyrilla racemiflora</i>	10	<input checked="" type="checkbox"/> 33.3%	FACW
3. <i>Acer rubrum</i>	5	<input type="checkbox"/> 16.7%	FAC
4. <i>Nyssa biflora</i>	10	<input checked="" type="checkbox"/> 33.3%	OBL
5.	0	<input type="checkbox"/> 0.0%	
6.	0	<input type="checkbox"/> 0.0%	
7.	0	<input type="checkbox"/> 0.0%	
8.	0	<input type="checkbox"/> 0.0%	
50% of Total Cover:	15	20% of Total Cover: 6	30 = Total Cover

Shrub Stratum (Plot size: 30 m )	Absolute % Cover	Rel. Strat. Cover	Indicator Status
1. <i>Ilex coriacea</i>	25	<input checked="" type="checkbox"/> 67.6%	FACW
2. <i>Magnolia virginiana</i>	5	<input type="checkbox"/> 13.5%	FACW
3. <i>Cyrilla racemiflora</i>	5	<input type="checkbox"/> 13.5%	FACW
4. <i>Ilex vomitoria</i>	1	<input type="checkbox"/> 2.7%	FAC
5. <i>Persea palustris</i>	1	<input type="checkbox"/> 2.7%	FACW
6.	0	<input type="checkbox"/> 0.0%	
50% of Total Cover:	18.5	20% of Total Cover: 7.4	37 = Total Cover

Herb Stratum (Plot size: 30 m )	Absolute % Cover	Rel. Strat. Cover	Indicator Status
1. <i>Sarracenia alabamensis</i>	2	<input checked="" type="checkbox"/> 22.2%	OBL
2. <i>Arundinaria tecta</i>	3	<input checked="" type="checkbox"/> 33.3%	FACW
3. <i>Dichanthellum scabriusculum</i>	2	<input checked="" type="checkbox"/> 22.2%	OBL
4. <i>Scirpus expansus</i>	1	<input type="checkbox"/> 11.1%	OBL
5. <i>Osmunda regalis</i>	1	<input type="checkbox"/> 11.1%	OBL
6.	0	<input type="checkbox"/> 0.0%	
7.	0	<input type="checkbox"/> 0.0%	
8.	0	<input type="checkbox"/> 0.0%	
9.	0	<input type="checkbox"/> 0.0%	
10.	0	<input type="checkbox"/> 0.0%	
11.	0	<input type="checkbox"/> 0.0%	
12.	0	<input type="checkbox"/> 0.0%	
50% of Total Cover:	4.5	20% of Total Cover: 1.8	9 = Total Cover

Woody Vine Stratum (Plot size: 30 m )	Absolute % Cover	Rel. Strat. Cover	Indicator Status
1. <i>Smilax laurifolia</i>	1	<input type="checkbox"/> 100.0%	FACW
2.	0	<input type="checkbox"/> 0.0%	
3.	0	<input type="checkbox"/> 0.0%	
4.	0	<input type="checkbox"/> 0.0%	
5.	0	<input type="checkbox"/> 0.0%	
50% of Total Cover:	0.5	20% of Total Cover: 0.2	1 = Total Cover

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, or FAC: 9 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of: 26 Multiply by: 1

OBL species 26 x 1 = 26

FACW species 66 x 2 = 132

FAC species 8 x 3 = 24

FACU species 0 x 4 = 0

UPL species 0 x 5 = 0

Column Totals: 100 (A) 182 (B)

Prevalence Index = B/A = 1.820

**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

**Hydrophytic Vegetation Present?** Yes  No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: Wet - 41

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (Inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>			
0-4	10YR	3/1	100						Very Fine Loamy Sand	
4-18	10YR	3/2	95	10YR	6/2	5	D	M	Loamy Sand	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (SB) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes     No

Remarks:

**WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region**

**Project/Site:** NASA - Stennis; 1,100 Acre Wetland Delineation      **City/County:** Waveland - Hancock      **Sampling Date:** 25-Oct-16  
**Applicant/Owner:** NASA      **State:** MS      **Sampling Point:** Wet - 43  
**Investigator(s):** Lars Larson, Randy Ellis      **Section, Township, Range:** S 32      T 7 s      R 16 W  
**Landform (hillslope, terrace, etc.):** Floodplain      **Local relief (concave, convex, none):** flat      **Slope:** 0.0 % / 0.0 °  
**Subregion (LRR or MLRA):** LRR T      **Lat.:** 30° 23' 52.457" N      **Long.:** 89° 37' 18.611" W      **Datum:** NAD83  
**Soil Map Unit Name:** Smithton - escambia      **NWI classification:** PFO 1/4 C

**Are climatic/hydrologic conditions on the site typical for this time of year?**      Yes  No       (If no, explain in Remarks.)  
**Are Vegetation**  , **Soil**  , **or Hydrology**  **significantly disturbed?**      **Are "Normal Circumstances" present?**      Yes  No   
**Are Vegetation**  , **Soil**  , **or Hydrology**  **naturally problematic?**      (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present?      Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
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**Remarks:**  
 Low drainage area approximately 250-feet east of the black top road in the SW part of the AOI.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (minimum of 2 required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input checked="" type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
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<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Dominant Species?

Sampling Point: Wet - 43

Tree Stratum (Plot size: 30 m )		Absolute % Cover	Rel.Strat. Cover	Indicator Status
1.	<i>Pinus elliotii</i>	10	<input checked="" type="checkbox"/> 30.3%	FACW
2.	<i>Nyssa biflora</i>	15	<input checked="" type="checkbox"/> 45.5%	OBL
3.	<i>Quercus nigra</i>	5	<input type="checkbox"/> 15.2%	FAC
4.	<i>Taxodium ascendens</i>	3	<input type="checkbox"/> 9.1%	OBL
5.		0	<input type="checkbox"/> 0.0%	
6.		0	<input type="checkbox"/> 0.0%	
7.		0	<input type="checkbox"/> 0.0%	
8.		0	<input type="checkbox"/> 0.0%	
50% of Total Cover: 16.5		20% of Total Cover: 6.6	33	= Total Cover
Sapling or Sapling/Shrub Stratum (Plot size: 30 m )		Absolute % Cover	Rel.Strat. Cover	Indicator Status
1.	<i>Pinus elliotii</i>	3	<input type="checkbox"/> 14.3%	FACW
2.	<i>Taxodium ascendens</i>	10	<input checked="" type="checkbox"/> 47.6%	OBL
3.	<i>Nyssa biflora</i>	5	<input checked="" type="checkbox"/> 23.8%	OBL
4.	<i>Cyrilla racemiflora</i>	3	<input type="checkbox"/> 14.3%	FACW
5.		0	<input type="checkbox"/> 0.0%	
6.		0	<input type="checkbox"/> 0.0%	
7.		0	<input type="checkbox"/> 0.0%	
8.		0	<input type="checkbox"/> 0.0%	
50% of Total Cover: 10.5		20% of Total Cover: 4.2	21	= Total Cover
Shrub Stratum (Plot size: 30 m )		Absolute % Cover	Rel.Strat. Cover	Indicator Status
1.	<i>Cyrilla racemiflora</i>	10	<input checked="" type="checkbox"/> 58.8%	FACW
2.	<i>Morella cerifera</i>	5	<input checked="" type="checkbox"/> 29.4%	FAC
3.	<i>Magnolia virginiana</i>	2	<input type="checkbox"/> 11.8%	FACW
4.		0	<input type="checkbox"/> 0.0%	
5.		0	<input type="checkbox"/> 0.0%	
6.		0	<input type="checkbox"/> 0.0%	
50% of Total Cover: 8.5		20% of Total Cover: 3.4	17	= Total Cover
Herb Stratum (Plot size: 30 m )		Absolute % Cover	Rel.Strat. Cover	Indicator Status
1.	<i>Arundinaria tecta</i>	1	<input type="checkbox"/> 100.0%	FACW
2.		0	<input type="checkbox"/> 0.0%	
3.		0	<input type="checkbox"/> 0.0%	
4.		0	<input type="checkbox"/> 0.0%	
5.		0	<input type="checkbox"/> 0.0%	
6.		0	<input type="checkbox"/> 0.0%	
7.		0	<input type="checkbox"/> 0.0%	
8.		0	<input type="checkbox"/> 0.0%	
9.		0	<input type="checkbox"/> 0.0%	
10.		0	<input type="checkbox"/> 0.0%	
11.		0	<input type="checkbox"/> 0.0%	
12.		0	<input type="checkbox"/> 0.0%	
50% of Total Cover: 0.5		20% of Total Cover: 0.2	1	= Total Cover
Woody Vine Stratum (Plot size: 30 m )		Absolute % Cover	Rel.Strat. Cover	Indicator Status
1.		0	<input type="checkbox"/> 0.0%	
2.		0	<input type="checkbox"/> 0.0%	
3.		0	<input type="checkbox"/> 0.0%	
4.		0	<input type="checkbox"/> 0.0%	
5.		0	<input type="checkbox"/> 0.0%	
50% of Total Cover: 0		20% of Total Cover: 0	0	= Total Cover

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of: 33 Multiply by:

OBL species 33 x 1 = 33

FACW species 29 x 2 = 58

FAC species 10 x 3 = 30

FACU species 0 x 4 = 0

UPL species 0 x 5 = 0

Column Totals: 72 (A) 121 (B)

Prevalence Index = B/A = 1.681

**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

**Hydrophytic Vegetation Present?** Yes  No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.



**SOIL**

Sampling Point: Wet - 43

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features			Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>		
0-5	10YR	3/1				Very Fine Loamy Sand	
5-16	10YR	3/2				Sandy Clay Loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes     No

Remarks:

**WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region**

**Project/Site:** NASA - Stennis; 1,100 Acre Wetland Delineation      **City/County:** Waveland - Hancock      **Sampling Date:** 27-Oct-16  
**Applicant/Owner:** NASA      **State:** MS      **Sampling Point:** Wet - 47  
**Investigator(s):** Lars Larson, Randy Ellis      **Section, Township, Range:** S 31      T 7 s      R 16 W  
**Landform (hillslope, terrace, etc.):** Hillside      **Local relief (concave, convex, none):** flat      **Slope:** 2.0 % / 1.1 °  
**Subregion (LRR or MLRA):** LRR T      **Lat.:** 30° 24' 15.210" N      **Long.:** 89° 37' 43.444" W      **Datum:** NAD83  
**Soil Map Unit Name:** Su, Smithton fine sandy loam, frequently flooded      **NWI classification:** PSS 1/4

**Are climatic/hydrologic conditions on the site typical for this time of year?**      Yes  No       (If no, explain in Remarks.)  
**Are Vegetation**  , **Soil**  , **or Hydrology**  **significantly disturbed?**      **Are "Normal Circumstances" present?**      Yes  No   
**Are Vegetation**  , **Soil**  , **or Hydrology**  **naturally problematic?**      (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present?      Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area</b> <b>within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
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**Remarks:**  
 Sideslope of low relief hillside drainage feature that transitions down into more of a wet area below. Plot is approximately 500-600- feet east of Trent Lot (Main NASA site) road.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	Secondary Indicators (minimum of 2 required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input checked="" type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input checked="" type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
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<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

**Remarks:**  
 No real strong hydrology, but a few secondary indicators.

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: Wet - 47

Tree Stratum (Plot size: 30 m )	Absolute % Cover	Dominant Species? <input type="checkbox"/>	Rel.Strat. Cover	Indicator Status
1. <i>Pinus elliotii</i>	15	<input checked="" type="checkbox"/>	51.7%	FACW
2. <i>Nyssa sylvatica</i>	10	<input checked="" type="checkbox"/>	34.5%	FAC
3. <i>Liquidambar styraciflua</i>	2	<input type="checkbox"/>	6.9%	FAC
4. <i>Quercus nigra</i>	1	<input type="checkbox"/>	3.4%	FAC
5. <i>Magnolia virginiana</i>	1	<input type="checkbox"/>	3.4%	FACW
6.	0	<input type="checkbox"/>	0.0%	
7.	0	<input type="checkbox"/>	0.0%	
8.	0	<input type="checkbox"/>	0.0%	
50% of Total Cover: 14.5	20% of Total Cover: 5.8	29	<b>= Total Cover</b>	
Sapling or Sapling/Shrub Stratum (Plot size: 30 m )	Absolute % Cover	Dominant Species? <input type="checkbox"/>	Rel.Strat. Cover	Indicator Status
1. <i>Pinus elliotii</i>	10	<input checked="" type="checkbox"/>	47.6%	FACW
2. <i>Magnolia virginiana</i>	5	<input checked="" type="checkbox"/>	23.8%	FACW
3. <i>Nyssa sylvatica</i>	5	<input checked="" type="checkbox"/>	23.8%	FAC
4. <i>Morella cerifera</i>	1	<input type="checkbox"/>	4.8%	FAC
5.	0	<input type="checkbox"/>	0.0%	
6.	0	<input type="checkbox"/>	0.0%	
7.	0	<input type="checkbox"/>	0.0%	
8.	0	<input type="checkbox"/>	0.0%	
50% of Total Cover: 10.5	20% of Total Cover: 4.2	21	<b>= Total Cover</b>	
Shrub Stratum (Plot size: 30 m )	Absolute % Cover	Dominant Species? <input type="checkbox"/>	Rel.Strat. Cover	Indicator Status
1. <i>Ilex vomitoria</i>	25	<input checked="" type="checkbox"/>	52.1%	FAC
2. <i>Ilex glabra</i>	10	<input checked="" type="checkbox"/>	20.8%	FACW
3. <i>Morella cerifera</i>	10	<input checked="" type="checkbox"/>	20.8%	FAC
4. <i>Ilex opaca</i>	2	<input type="checkbox"/>	4.2%	FAC
5. <i>Persea palustris</i>	1	<input type="checkbox"/>	2.1%	FACW
6.	0	<input type="checkbox"/>	0.0%	
50% of Total Cover: 24	20% of Total Cover: 9.6	48	<b>= Total Cover</b>	
Herb Stratum (Plot size: 30 m )	Absolute % Cover	Dominant Species? <input type="checkbox"/>	Rel.Strat. Cover	Indicator Status
1. <i>Osmunda regalis</i>	5	<input checked="" type="checkbox"/>	50.0%	OBL
2. <i>Woodwardia areolata</i>	3	<input checked="" type="checkbox"/>	30.0%	OBL
3. <i>Sagittaria lancifolia</i>	1	<input type="checkbox"/>	10.0%	OBL
4. <i>Dichanthellum scabrusculum</i>	1	<input type="checkbox"/>	10.0%	OBL
5.	0	<input type="checkbox"/>	0.0%	
6.	0	<input type="checkbox"/>	0.0%	
7.	0	<input type="checkbox"/>	0.0%	
8.	0	<input type="checkbox"/>	0.0%	
9.	0	<input type="checkbox"/>	0.0%	
10.	0	<input type="checkbox"/>	0.0%	
11.	0	<input type="checkbox"/>	0.0%	
12.	0	<input type="checkbox"/>	0.0%	
50% of Total Cover: 5	20% of Total Cover: 2	10	<b>= Total Cover</b>	
Woody Vine Stratum (Plot size: 30 m )	Absolute % Cover	Dominant Species? <input type="checkbox"/>	Rel.Strat. Cover	Indicator Status
1. <i>Smilax laurifolia</i>	1	<input type="checkbox"/>	100.0%	FACW
2.	0	<input type="checkbox"/>	0.0%	
3.	0	<input type="checkbox"/>	0.0%	
4.	0	<input type="checkbox"/>	0.0%	
5.	0	<input type="checkbox"/>	0.0%	
50% of Total Cover: 0.5	20% of Total Cover: 0.2	1	<b>= Total Cover</b>	

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, or FAC: 10 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of: 109 (A) Multiply by: 264 (B)

OBL species: 10 x 1 = 10

FACW species: 43 x 2 = 86

FAC species: 56 x 3 = 168

FACU species: 0 x 4 = 0

UPL species: 0 x 5 = 0

Column Totals: 109 (A) 264 (B)

Prevalence Index = B/A = 2.422

- Hydrophytic Vegetation Indicators:**
- 1 - Rapid Test for Hydrophytic Vegetation
  - 2 - Dominance Test is > 50%
  - 3 - Prevalence Index is ≤ 3.0<sup>1</sup>
  - Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)
- <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

**Hydrophytic Vegetation Present?** Yes  No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: Wet - 47

**Profile Description: (Describe to the depth needed to document the Indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix			Redox Features				Texture	Remarks
	Color (moist)		%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	10YR	3/2	100					Sandy Loam	
6-16	10YR	4/2	95	10YR	6/6	5	C M	Sandy Loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes     No

Remarks:

**WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region**

**Project/Site:** NASA - Stennis; 1,100 Acre Wetland Delineation      **City/County:** Waveland - Hancock      **Sampling Date:** 26-Oct-16  
**Applicant/Owner:** NASA      **State:** MS      **Sampling Point:** Wet - 52  
**Investigator(s):** Lars Larson, Randy Ellis      **Section, Township, Range:** S 21      T 7 s      R 16 W  
**Landform (hillslope, terrace, etc.):** Terrace      **Local relief (concave, convex, none):** none      **Slope:** 0.0 % / 0.0 °  
**Subregion (LRR or MLRA):** LRR T      **Lat.:** 30° 25' 2.553" N      **Long.:** 89° 36' 29.223" W      **Datum:** NAD83  
**Soil Map Unit Name:** H1A, Harleston fine sandy loam, 0 to 2 percent slopes      **NWI classification:** N/A

**Are climatic/hydrologic conditions on the site typical for this time of year?**      Yes  No       (If no, explain in Remarks.)  
**Are Vegetation**  , **Soil**  , **or Hydrology**  **significantly disturbed?**      **Are "Normal Circumstances" present?**      Yes  No   
**Are Vegetation**  , **Soil**  , **or Hydrology**  **naturally problematic?**      (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present?      Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area</b> <b>within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
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**Remarks:**  
 Area is approximately 250 feet east of Up - 52.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> Primary Indicators (minimum of one required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	Secondary Indicators (minimum of 2 required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
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<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

**Remarks:**  
 Barely have hydrology.... Slight evidence of oxidized rhizospheres.

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: Wet - 52

Tree Stratum (Plot size: 30 m )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. <i>Pinus elliotii</i>	15	<input checked="" type="checkbox"/> 42.9%	FACW
2. <i>Magnolia virginiana</i>	10	<input checked="" type="checkbox"/> 28.6%	FACW
3. <i>Nyssa sylvatica</i>	10	<input checked="" type="checkbox"/> 28.6%	FAC
4.	0	<input type="checkbox"/> 0.0%	
5.	0	<input type="checkbox"/> 0.0%	
6.	0	<input type="checkbox"/> 0.0%	
7.	0	<input type="checkbox"/> 0.0%	
8.	0	<input type="checkbox"/> 0.0%	

50% of Total Cover: 17.5 20% of Total Cover: 7 35 = Total Cover

Sapling or Sapling/Shrub Stratum (Plot size: 30 m )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. <i>Pinus elliotii</i>	5	<input type="checkbox"/> 15.6%	FACW
2. <i>Nyssa sylvatica</i>	10	<input checked="" type="checkbox"/> 31.3%	FAC
3. <i>Magnolia virginiana</i>	15	<input checked="" type="checkbox"/> 46.9%	FACW
4. <i>Acer rubrum</i>	2	<input type="checkbox"/> 6.3%	FAC
5.	0	<input type="checkbox"/> 0.0%	
6.	0	<input type="checkbox"/> 0.0%	
7.	0	<input type="checkbox"/> 0.0%	
8.	0	<input type="checkbox"/> 0.0%	

50% of Total Cover: 16 20% of Total Cover: 6.4 32 = Total Cover

Shrub Stratum (Plot size: 30 m )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. <i>Ilex coriacea</i>	50	<input checked="" type="checkbox"/> 94.3%	FACW
2. <i>Cyrilla racemiflora</i>	3	<input type="checkbox"/> 5.7%	FACW
3.	0	<input type="checkbox"/> 0.0%	
4.	0	<input type="checkbox"/> 0.0%	
5.	0	<input type="checkbox"/> 0.0%	
6.	0	<input type="checkbox"/> 0.0%	

50% of Total Cover: 26.5 20% of Total Cover: 10.6 53 = Total Cover

Herb Stratum (Plot size: 30 m )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. <i>Ilex coriacea</i>	5	<input checked="" type="checkbox"/> 100.0%	FACW
2.	0	<input type="checkbox"/> 0.0%	
3.	0	<input type="checkbox"/> 0.0%	
4.	0	<input type="checkbox"/> 0.0%	
5.	0	<input type="checkbox"/> 0.0%	
6.	0	<input type="checkbox"/> 0.0%	
7.	0	<input type="checkbox"/> 0.0%	
8.	0	<input type="checkbox"/> 0.0%	
9.	0	<input type="checkbox"/> 0.0%	
10.	0	<input type="checkbox"/> 0.0%	
11.	0	<input type="checkbox"/> 0.0%	
12.	0	<input type="checkbox"/> 0.0%	

50% of Total Cover: 2.5 20% of Total Cover: 1 5 = Total Cover

Woody Vine Stratum (Plot size: 30 m )	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. <i>Smilax laurifolia</i>	1	<input type="checkbox"/> 100.0%	FACW
2.	0	<input type="checkbox"/> 0.0%	
3.	0	<input type="checkbox"/> 0.0%	
4.	0	<input type="checkbox"/> 0.0%	
5.	0	<input type="checkbox"/> 0.0%	

50% of Total Cover: 0.5 20% of Total Cover: 0.2 1 = Total Cover

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, or FAC:	<u>7</u>	(A)
Total Number of Dominant Species Across All Strata:	<u>7</u>	(B)
Percent of dominant Species That Are OBL, FACW, or FAC:	<u>100.0%</u>	(A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:	
OBL species	0	x 1 = 0
FACW species	104	x 2 = 208
FAC species	22	x 3 = 66
FACU species	0	x 4 = 0
UPL species	0	x 5 = 0
Column Totals:	<u>126</u> (A)	<u>274</u> (B)
Prevalence Index = B/A =		<u>2.175</u>

- Hydrophytic Vegetation Indicators:**
- 1 - Rapid Test for Hydrophytic Vegetation
  - 2 - Dominance Test is > 50%
  - 3 - Prevalence Index is ≤ 3.0<sup>1</sup>
  - Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)
- <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

**Hydrophytic Vegetation Present?** Yes  No

**SOIL**

Sampling Point: Wet - 52

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR	3/2	100						Loamy Sand	
4-12	10YR	4/2	97	10YR	6/6	3	D	M	Loamy Sand	
12-24	10YR	5/2	97	10YR	6/6	3	D	M	Loamy Sand	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining, M=Matrix

**Hydric Soil Indicators:**

- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes     No

Remarks:

**WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region**

**Project/Site:** NASA - Stennis; 1,100 Acre Wetland Delineation      **City/County:** Waveland - Hancock      **Sampling Date:** 31-Oct-16  
**Applicant/Owner:** NASA      **State:** MS      **Sampling Point:** Wet - 53  
**Investigator(s):** Lars Larson, Randy Ellis      **Section, Township, Range:** S 21      T 7 s      R 16 W  
**Landform (hillslope, terrace, etc.):** Terrace      **Local relief (concave, convex, none):** none      **Slope:** 0.0 % / 0.0 °  
**Subregion (LRR or MLRA):** LRR T      **Lat.:** 30° 25' 2.254" N      **Long.:** 89° 36' 14.733" W      **Datum:** NAD83  
**Soil Map Unit Name:** At, Atmore silt loam, 0 to 2 percent slopes      **NWI classification:** N/A

**Are climatic/hydrologic conditions on the site typical for this time of year?**      Yes  No       (If no, explain in Remarks.)  
**Are Vegetation**  , **Soil**  , **or Hydrology**  **significantly disturbed?**      **Are "Normal Circumstances" present?**      Yes  No   
**Are Vegetation**  , **Soil**  , **or Hydrology**  **naturally problematic?**      (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present?      Yes <input checked="" type="radio"/> No <input type="radio"/>	<b>Is the Sampled Area</b> <b>within a Wetland?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
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**Remarks:**  
 Plot is approximately 200 feet south of the main property boundary and fence... small wet area approximately 500 feet north of the toe of the landfill area.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <b>Primary Indicators (minimum of one required; check all that apply)</b> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<b>Secondary Indicators (minimum of 2 required)</b> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input checked="" type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
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<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (Inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

**Remarks:**  
 No strong redoximorphic indicators in soil.



**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

**Dominant Species?**

**Sampling Point: Wet - 53**

Tree Stratum (Plot size: 30 m )		Absolute % Cover	Rel.Strat. Cover	Indicator Status
1.	<i>Pinus elliotii</i>	10	<input checked="" type="checkbox"/> 27.8%	FACW
2.	<i>Nyssa sylvatica</i>	15	<input checked="" type="checkbox"/> 41.7%	FAC
3.	<i>Magnolia virginiana</i>	10	<input checked="" type="checkbox"/> 27.8%	FACW
4.	<i>Taxodium ascendens</i>	1	<input type="checkbox"/> 2.8%	OBL
5.		0	<input type="checkbox"/> 0.0%	
6.		0	<input type="checkbox"/> 0.0%	
7.		0	<input type="checkbox"/> 0.0%	
8.		0	<input type="checkbox"/> 0.0%	

50% of Total Cover: 18    20% of Total Cover: 7.2    36 = Total Cover

Sapling or Sapling/Shrub Stratum (Plot size: 30 m )		Absolute % Cover	Rel.Strat. Cover	Indicator Status
1.	<i>Pinus elliotii</i>	1	<input type="checkbox"/> 6.3%	FACW
2.	<i>Nyssa sylvatica</i>	10	<input checked="" type="checkbox"/> 62.5%	FAC
3.	<i>Magnolia virginiana</i>	5	<input checked="" type="checkbox"/> 31.3%	FACW
4.		0	<input type="checkbox"/> 0.0%	
5.		0	<input type="checkbox"/> 0.0%	
6.		0	<input type="checkbox"/> 0.0%	
7.		0	<input type="checkbox"/> 0.0%	
8.		0	<input type="checkbox"/> 0.0%	

50% of Total Cover: 8    20% of Total Cover: 3.2    16 = Total Cover

Shrub Stratum (Plot size: 30 m )		Absolute % Cover	Rel.Strat. Cover	Indicator Status
1.	<i>Ilex coriacea</i>	30	<input checked="" type="checkbox"/> 75.0%	FACW
2.	<i>Cyrilla racemiflora</i>	10	<input checked="" type="checkbox"/> 25.0%	FACW
3.		0	<input type="checkbox"/> 0.0%	
4.		0	<input type="checkbox"/> 0.0%	
5.		0	<input type="checkbox"/> 0.0%	
6.		0	<input type="checkbox"/> 0.0%	

50% of Total Cover: 20    20% of Total Cover: 8    40 = Total Cover

Herb Stratum (Plot size: 30 m )		Absolute % Cover	Rel.Strat. Cover	Indicator Status
1.	<i>Juncus polycephalus</i>	1	<input type="checkbox"/> 33.3%	OBL
2.	<i>Sarracenia alabamensis</i>	1	<input type="checkbox"/> 33.3%	OBL
3.	<i>Eriocaulon decangulare</i>	1	<input type="checkbox"/> 33.3%	OBL
4.		0	<input type="checkbox"/> 0.0%	
5.		0	<input type="checkbox"/> 0.0%	
6.		0	<input type="checkbox"/> 0.0%	
7.		0	<input type="checkbox"/> 0.0%	
8.		0	<input type="checkbox"/> 0.0%	
9.		0	<input type="checkbox"/> 0.0%	
10.		0	<input type="checkbox"/> 0.0%	
11.		0	<input type="checkbox"/> 0.0%	
12.		0	<input type="checkbox"/> 0.0%	

50% of Total Cover: 1.5    20% of Total Cover: 0.6    3 = Total Cover

Woody Vine Stratum (Plot size: 30 m )		Absolute % Cover	Rel.Strat. Cover	Indicator Status
1.	<i>Smilax laurifolia</i>	1	<input type="checkbox"/> 100.0%	FACW
2.		0	<input type="checkbox"/> 0.0%	
3.		0	<input type="checkbox"/> 0.0%	
4.		0	<input type="checkbox"/> 0.0%	
5.		0	<input type="checkbox"/> 0.0%	

50% of Total Cover: 0.5    20% of Total Cover: 0.2    1 = Total Cover

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>4</u>	x 1 = <u>4</u>
FACW species <u>67</u>	x 2 = <u>134</u>
FAC species <u>25</u>	x 3 = <u>75</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
<b>Column Totals:</b> <u>96</u> (A)	<u>213</u> (B)
Prevalence Index = B/A = <u>2.219</u>	

- Hydrophytic Vegetation Indicators:**
- 1 - Rapid Test for Hydrophytic Vegetation
  - 2 - Dominance Test is > 50%
  - 3 - Prevalence Index is ≤ 3.0 <sup>1</sup>
  - Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
- <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

**Hydrophytic Vegetation Present?**    Yes     No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: Wet - 53

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (Inches)	Matrix			Redox Features				Texture	Remarks
	Color (moist)		%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR	3/1	98	10YR	6/2	2	D	M	Sandy Loam
4-16	10YR	4/2	98	10YR	6/2	20	D	M	Sandy Loam

<sup>1</sup>Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Location: PL=Pore Lining. M=Matrix

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes     No

Remarks: