

MYSTIC SPRINGS MITIGATION SITE

2021 Annual Monitoring Report

USACE Permit No.: SAJ-2015-03537 (SP-MAO), issued 6/30/2016

Permittee: Florida Department of Transportation, District 3
C/o Colby Cleveland
1074 Highway 90
Chipley, FL 32428

Responsible Party for Monitoring: Northwest Florida Water Management District
81 Water Management Drive
Havana, FL 32333

Dates of Inspection: 9/24/2021

Synopsis:

Survivorship and density of hydrophytic trees planted at Mystic Springs exceeds the required performance standard of 400 trees per acre averaged across the mitigation area. Planted cypress are generally healthy and adapted to the periodic flooding characteristic of this site, although stress from extended flooding in 2019 caused some mortality among planted trees, especially for red maple, river birch, and Carolina ash. Percent coverage of exotic and invasive species is within permit condition.

A visual site inspection in 2020 noted tree mortality within portions of the mitigation area and indicated tree densities appeared below required performance standards. However, quantitative sampling in 2021 demonstrated that densities averaged across the site remain above required standards. Tree survivorship and density was measured on 9/24/2021 via 13 randomly placed radial plots (each plot was 24 FT in diameter with an area of 452 FT²). Results varied from 0-13 trees per plot (average of 5.38 trees per plot). Average tree density for the mitigation area is 518 trees per acre (well above the minimum 400 trees per acre performance standard).

Background:

The purpose of this project (Mystic Springs Mitigation Site) is to provide offsetting mitigation for 1.88 acres of impact (1.21 acres direct/permanent; 0.67 acres secondary) to freshwater palustrine wetlands (0.82 UMAM functional loss) associated with FDOT replacement and realignment of the CR 99 Pine Barren Creek Bridge in Escambia County, Florida. As required by Special Condition No. 8 of the USACE permit, mitigation has been implemented at the Mystic Springs site on NFWMD lands along the Escambia River floodplain via planting forested wetland species on approximately 5.52 acres.

Mystic Springs Mitigation Site (30.8563° North, 87.3129° West), a sand pit excavated in the 1940s or early 1950s, is located adjacent to the public boat ramp (Mystic Springs Road) on the Escambia River approximately one mile east of US 29 and 1.5 miles southeast of McDavid, Florida. Foot access is possible at any time without prior notice.

In accordance with the restoration plan, 2,396 trees (447 red maple, 447 river birch, 224 Carolina ash, 1,278 bald cypress; each tree 4-5 FT tall) were planted at the mitigation area from April 25 – 28, 2017. Trees were planted in the plantable areas on 8 FT centers at a rate of 681 trees per acre.

Performance Standards:

- 400 hydrophytic trees per acre in a healthy and thriving condition. [Met]
- Nuisance vegetation $\leq 5\%$ cover per acre. [Met]
- Exotic vegetation $\leq 1\%$ cover per acre. [Met]

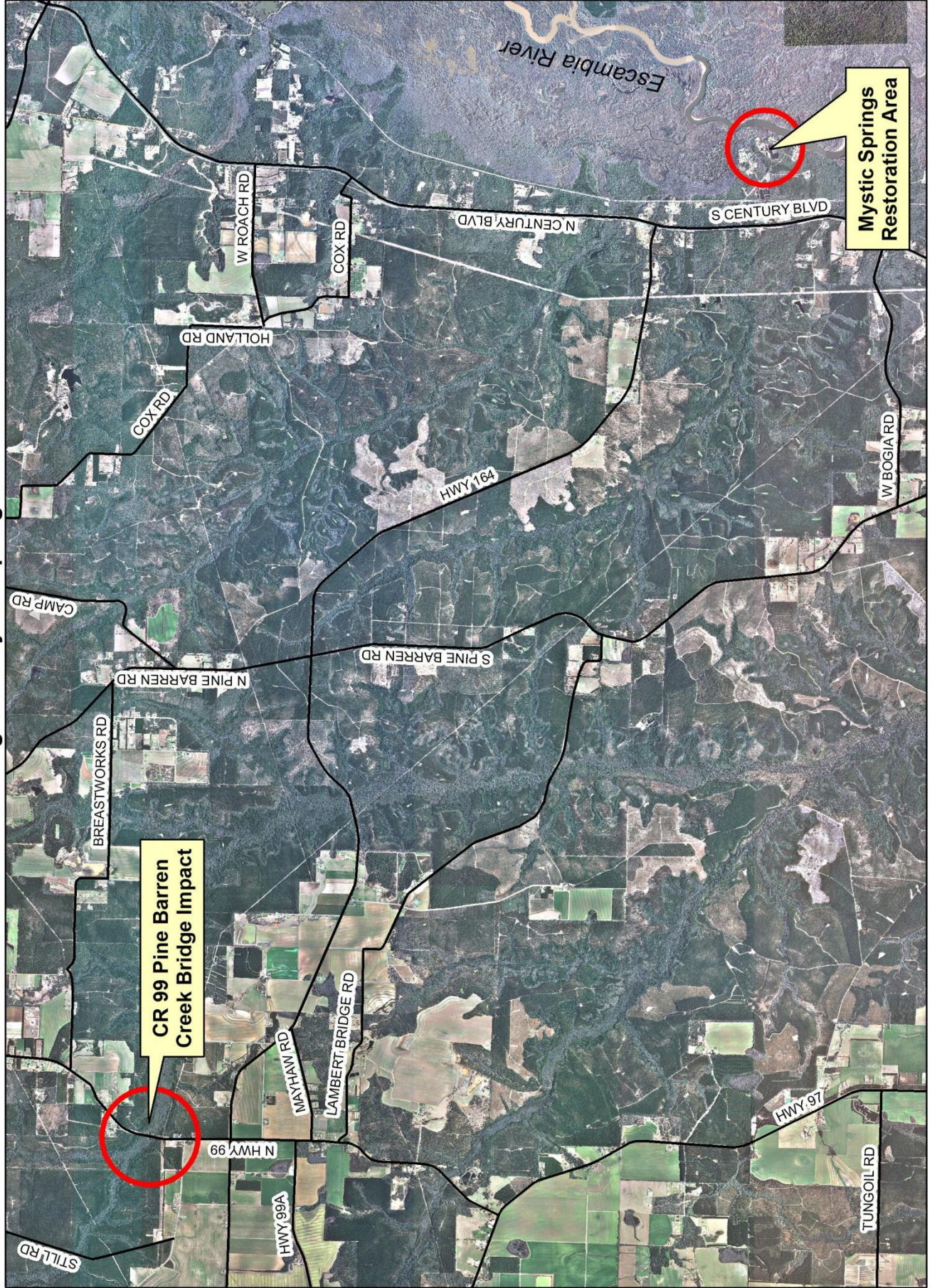
Monitoring Requirements:

- Inspection and photo-documentation of site.
- Frequency
 - “Time-Zero” monitoring (Spring, 2017).
 - Semi-annual monitoring (Fall, 2017; Spring and Fall, 2018).
 - Annual monitoring (Fall, 2019 – 2022).
- “Time-Zero” monitoring report to be submitted within 60 days of implementation of mitigation.
- Annual reports submitted to the USACE for duration of monitoring (2017 – 2022; semi-annual reports are to be combined into one annual report for submission). Reports will be posted at the NFWFMD website.

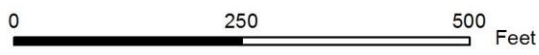
Conclusions:

The successful establishment of hydrophytic trees (518 trees per acre) at Mystics Springs exceeds the minimum performance standard of 400 trees per acre. Exotic and invasive vegetation coverage is within permit conditions. Unless otherwise directed by the USACE, monitoring will continue through 2022, with annual reports posted at the NFWFMD website. The site will be maintained in a natural state in perpetuity as part of NFWFMD conservation lands.

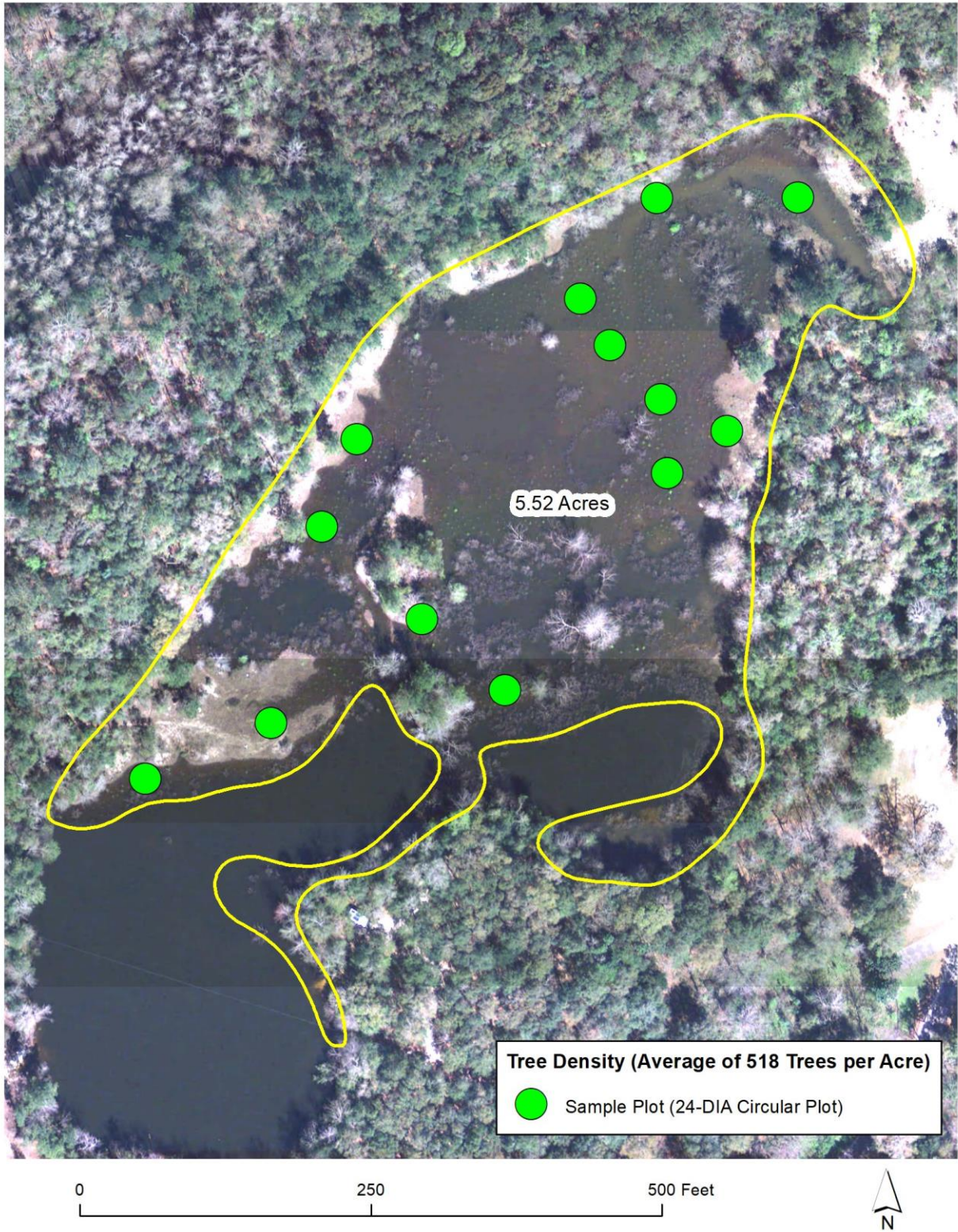
CR 99 Pine Barren Creek Bridge and Mystic Springs Restoration Area - 2013 DOQ



Mystic Springs Restoration Area - 2013 DOQ



Mystic Springs Restoration Area - 2019 DOQ





Mystic Springs (9/24/2021)



Mystic Springs (9/24/2021)



Mystic Springs (9/24/2021)



Mystic Springs (9/24/2021)

Mystic Springs - September 24, 2021		
(Survivorship of Trees Planted April 2017)		
Plot*	No. of Trees	Area of Plot (SQ FT)
1	1	452
2	4	452
3	8	452
4	0	452
5	11	452
6	0	452
7	12	452
8	0	452
9	6	452
10	2	452
11	13	452
12	12	452
13	1	452
Average:	5.38	
Average No. of Trees Per Acre: 518		

*Radial Plot; 12 FT Radius