

**Emeralda Marsh Conservation Area (EMCA) Hardwood
Restoration Project
Lake County, FL**

**Project Report to The Florida Native Plant Society
2013**

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ABSTRACT: The St. Johns River Water Management District (SJRWMD, District), in partnership with The Florida Native Plant Society conducted a wetland restoration project on the Emerald Marsh Conservation Area in Lake County, Florida. Site preparation and planting activities were conducted on the 11-acre project area. District staff conducted all work.

INTRODUCTION

In February 2011, District Division of Land Management staff submitted an application for a conservation grant award to the Florida Native Plant Society (FNPS). The District project was selected to receive funding (\$1,500.00) and the award was announced at the annual FNPS conference on May 21, 2011.

The restoration project area encompasses approximately 11 acres and is located in Lake County, Florida, within the Emerald Marsh Conservation Area (Figure 1), which is owned and managed by the District.

The historic natural community coverage within the project area was floodplain swamp and as such, was likely dominated by hardwoods. Disturbances prior to public ownership included the broad-scale clearing of native vegetation. While specific purposes and historic use(s) of the site are unknown, the District speculates that the area was used primarily for agricultural purposes. In advance of the grant application, District staff conducted site preparation activities that included mowing and herbicide applications to control encroaching shrubs such as Carolina willow (*Salix caroliniana*), wax myrtle (*Myrica serifera*), and primrose willow (*Ludwigia peruviana*).

The District objectives for the project work were:

1. Procure 5,000 native wetland hardwood trees/bare-root seedlings.
2. Conduct additional site preparation activities as needed.
3. Plant bare-root seedlings at a rate of 681 trees/acre or on an 8x8 spacing.
4. Conduct survival monitoring 1-year post planting.

Project Accomplishments

Site Preparation

In addition to site preparation activities conducted prior to the grant application, District staff conducted additional mowing and herbicide work to ready the project area for planting. See Table 3 at the end of the document for details regarding the site preparation method used and associated equipment and labor costs.

Procurement

On January 30, 2012, the District received 6,000 hardwood seedlings from a local nursery grower. Table 1 details the quantity of each species received.

Table 1 – Bare-root Seedling Purchase Summary

Species	Quantity
Bald cypress (<i>Taxodium distichum</i>)	3,000
Pop ash (<i>Fraxinus caroliniana</i>)	1,000
Water tupelo (<i>Nyssa aquatica</i>)	2,000
Total	6,000

Planting

Between January 30 and February 1, 2012, District staff planted all seedlings purchased for this project. The site was not conducive to machine planting and as such, hand planting was conducted. Planting was accomplished using dibbles. In deciding to plant bare-root seedlings, the District notes traditional planting methods using 3-gallon potted plants have largely failed in similar environments within the EMCA. With the understanding that bare-root plants are quick to establish, have no risk of being root or pot bound, and have not adapted to potting soil or nursery environments, District staff anticipated a higher success rate using bare-root versus potted plants.

Monitoring Transects & Photo Points

Immediately post planting, District staff established a linear monitoring transect within the planting area and installed aluminum tags on 300 of the newly planted seedlings. This allowed

for a 10% survey to measure survival. On January 23, 2013, the one-year survival monitoring was conducted. The results of this monitoring are indicated in Table 2.

Table 2 – Planting and Monitoring

Tree Type	Number Tagged (2012)	Percent Observed Alive (2013)
Hardwood	181	32%
Cypress	119	42%

It is important to note, that mortality of planted seedlings cannot be assumed based on the given data. During the 1-year monitoring event, District staff noted that many of the aluminum tags had either degraded or fallen from the trees. For this reason, values for dead and missing trees were combined. The survival value indicated above includes only those tagged trees that were observed alive. Many of the trees observed alive were doing quite well with some reaching heights in excess of 6 feet. Future plantings should incorporate the use of more durable tree tags.

Grant Costs

Direct costs paid by the District from the conservation grant funding included the purchase of the planting material. The District paid \$1,320.00 to a local nursery grower for the purchase of 6,000 bare-root seedlings. Other costs applied to the grant project include site preparation, herbicide costs, vehicle mileage, equipment usage, and staff time. All costs associated with this project are detailed in Table 3.

Table 3 – Grant Cost Schedule

Activity	Staff Hours	Vehicle Mileage	Tractor with Brown's Tree Cutter hours	Herbicide Costs	Seedling Costs	Total Project Costs
Mowing	14		14			
Herbicide Application	14			Garlon 3A \$457.50 Sil-Energy \$45.70 Renovate 3 \$693.30		
Planting	100	969			Bald Cypress \$570.00 Pop Ash \$250.00 Water Tupelo \$500.00	
Vegetation Monitoring	6	28				
Totals	134	997	14	\$1196.50	\$1,320.00	-----
Rate	\$22.44/hour	.45/mile	\$41.25/hour	Varies by Product	See Invoice (attached)	-----
Total Costs	\$3006.96	\$448.65	\$577.50	\$1196.50	\$1,320.00	\$6549.61

CUSTOMER ORDER

Central FL Lands & Timber Nursery, LLC
 3087 N. County Road 53
 Mayo, FL 32066

DATE	1/30/2012
FILE #	141-11

CUSTOMER NAME & ADDRESS				Ship To	
St. Johns Water Management District P. O. Box 1429 Palatka, FL 32178				Customer Pickup	
Customer Contact	Customer Phone	Customer Fax	Customer Alt. Phone	P.O. No.	
R. H. Davis	1-352-821-2066	1-352-821-0353			

ITEM	DESCRIPTION	QUANTITY	COST	TOTAL
	PICKUP DATE: Monday, Jan. 30, 2012			
Cypress, Bald	Bald Cypress	3,000	0.19	570.00
Ash, Pop	Pop Ash	1,000	0.25	250.00
Gum, Water T	Water Tupelo Gum	2,000	0.25	500.00
<p><i>Paid 01-30-12</i> <i>Via C.C.</i> <i>\$1320.00</i> <i>- 0 -</i></p>				

RECEIVED BY: <i>[Signature]</i>			Subtotal	\$1,320.00
Phone #	Fax #	E-mail	Sales Tax (0.0%)	\$0.00
1-386-294-1211	1-386-294-3416	cflat@windstream.net	TOTAL	\$1,320.00

Trans For FL Native Plant Society Grant. Window Restoration at Emerald De March