

First Annual Assessment Report
U.S. Army Corps of Engineers Permit SAJ-1994-04745 (IP-MEP)

November 2011

First Annual Monitoring Report for Celery Fields Mitigation Site



SUBMITTED TO

Peter Peduzzi, Project Manager
Sarasota County Public Works Department
1001 Sarasota Center Blvd.
Sarasota, FL 23240

SUBMITTED BY



Vanasse Hangen Brustlin, Inc.
8043 Cooper Creek Boulevard
Suite 201
University Park, Florida 34201
941.351.8986

**First Annual Assessment Report
November 2011**

U. S. Army Corps of Engineers Permit SAJ-1994-04745 (IP-MEP)

***First Annual Monitoring Report for
Celery Fields Mitigation Site***

**Sarasota County
Florida**

Prepared for: **Peter Peduzzi, Project Manager**
Sarasota County Government Public Works
1001 Sarasota Center Blvd,
Sarasota, FL 23240

Prepared by: ***Vanasse Hangen Brustlin, Inc.***
8043 Cooper Creek Boulevard, Suite 201
University Park, Florida 34201
(941) 351-8986

Table of Contents

| | |
|---|------------|
| Table of Contents | i |
| List of Figures..... | ii |
| List of Tables | iii |
| Introduction..... | 1 |
| Mitigation Success Criteria | 2 |
| Site Description..... | 2 |
| Summary of Construction, Planting, and Maintenance Activities..... | 6 |
| Restoration Earthwork | 6 |
| Water Flow and Control Structure Operation..... | 6 |
| Planting..... | 8 |
| Exotic/Nuisance Species Maintenance | 12 |
| Wildlife Habitat and Recreational Improvements | 17 |
| Mitigation Monitoring Program | 17 |
| Hydrological Monitoring | 17 |
| Ecological Monitoring..... | 19 |
| Mitigation Monitoring Results | 22 |
| Hydrologic Monitoring | 22 |
| Ecological Monitoring..... | 25 |
| Success Criteria Compliance | 35 |
| Appendix A: Vegetation Monitoring Data for Spring 2011 | |
| Appendix B: Vegetation Monitoring Data for Fall 2011 | |
| Appendix C: First Semi-Annual Mitigation Monitoring Photos | |
| Appendix D: First Annual Mitigation Monitoring Photos | |
| Appendix E: Monthly Bird Surveys | |

List of Figures

| Figure No. | Description | Page |
|------------|--|------|
| 1 | Celery Fields Mitigation Site Location Map | 3 |
| 2 | South Cell and Walker Tract Mitigation Areas Locations within Celery Fields Mitigation Site | 4 |
| 3 | Locations of South Cell Mitigation Area Planting Subzones..... | 5 |
| 4 | Locations of Walker Tract Mitigation Area Planting Subzones | 7 |
| 5 | Wildlife Habitat and Recreational Improvements for Celery Fields Mitigation Site | 18 |
| 6 | Location and Actual Lengths of Vegetation Monitoring Transects for South Cell Mitigation Area..... | 20 |
| 7 | Location and Actual Lengths of Vegetation Monitoring Transects for Walker Tract Mitigation Area | 21 |
| 8 | Celery Fields Mitigation Site Rainfall and Water Levels for the Period April 1, 2011 to October 1, 2011 | 23 |

List of Tables

| Table No. | Description | Page |
|-----------|---|------|
| 1 | Sub-Zone Planting Plan for South Cell Area of Celery Fields Mitigation Site | 9 |
| 2 | Planting Plan for Entire Walker Tract..... | 11 |
| 3 | Sub-Zone Replanting Plan for South Cell Area of Celery Fields Mitigation Site (Approved on January 25, 2011 and Implemented March 2011) | 13 |
| 4 | Replanting Plan for Walker Tract of Celery Fields Mitigation Site (Approved in December 2010 and Implemented in March 2011) | 15 |
| 5 | Replanting Plan Implemented for South Cell and Walker Tract Mitigation Areas from July 2011 through September 2011 | 16 |
| 6 | Water Level Statistics for the Different Planting Zones Throughout the Celery Fields Mitigation Site (April 1, 2011- October 1, 2011) | 24 |
| 7 | Vegetation Transect Data Summary for Celery Fields Mitigation Site from March 2011 Monitoring Event..... | 26 |
| 8 | Vegetation Transect Data Summary for Celery Fields Mitigation Site from September 2011 Monitoring Event | 27 |
| 9 | Qualitative Vegetation Data for the Different Vegetative Strata for the Tree Preserve Islands | 30 |
| 10 | Exotic/Nuisance Species Included In Maintenance Program for Celery Fields Mitigation Site | 31 |
| 11 | Bird Counts for Monthly Bird Surveys for Celery Fields Regional Stormwater Facility | 33 |
| 12 | Plant Cover Data Summary Comparisons to the Permit Success Criteria for the March and September 2011 Monitoring Events | 37 |

Introduction

The U.S. Army Corps of Engineers (ACOE) authorized 415.94 acres of permanent impacts to highly altered wetlands for the Celery Fields Regional Stormwater Facility (CFRSF) through ACOE Permit SAJ-1994-04745. This permit and the later revised 2003 permit modification, required the creation of 87.7 acres of open water habitat, 96.82 acres of herbaceous wetland, 5.32 acres of forested wetland, and 12.64 acres of upland buffer habitat. These permits also called for the preservation of 1.09 acres of existing uplands. The permit required implementation of an environmental education program that includes educational signage and passive recreational use through the creation of elevated boardwalks, terminal gazebos, and a hiking trail as well as specific wildlife habitat improvements (osprey platform, wood duck boxes, and tree snags).

In October 2010, Modification-1 for the aforementioned permit was issued to Sarasota County Government to allow for the redesign of the mitigation areas to correct errors that resulted in a loss of 12.44 acres of mitigation. The deficit mitigation acreage was created in the Walker Tract Mitigation Area, part of the CFRSF. The Walker Tract was not previously used for other mitigation purposes. The Walker Tract is directly south of, and contiguous to the South Cell Mitigation Area of the CFRSF.

Earthwork, excavation and planting of the Celery Fields Mitigation Site (both the South Cell and Walker Tract Mitigation Areas) were conducted from September 2009 through December 2010. Warranty replanting, exotic plant maintenance, recreational improvements, and wildlife habitat enhancements were all conducted during 2011. This report is intended to comply with the Annual Monitoring requirement of the permit and includes the results of the Spring and Fall 2011 semi-annual monitoring events.

Mitigation Success Criteria

Semi-annual vegetation monitoring events conducted in March and September of each year are summarized in annual reports due in November of each year. The ACOE Permit SAJ-1994-4745 (IP-MEP) for Phase III of the CFRSF project requires the following success criteria be evaluated:

1. A minimum of 70% total cover of desirable wetland plant species in herbaceous wetland zones in South Cell and Walker Tract Mitigation Areas;
2. A minimum of 50% total cover of the water lily-dominated D-Zones of the South Cell Mitigation Area;
3. A minimum of 30% canopy coverage and 30% herbaceous vegetative cover for the forested wetland zones;
4. Nuisance/exotic plants species must not exceed 10% total cover;
5. Herbaceous wetland zones must be able to be classified as *Palustrine Emergent Wetland* according to the U.S. Fish and Wildlife Service's (USFWS) Classification of Wetlands and Deepwater Habitats of the United States (CWDHUS); and
6. Forested wetland zones must be able to be classified as *Palustrine Scrub-Shrub Wetland* according to the USFWS's CWDHUS.

The Celery Fields Mitigation Site will also be deemed successful when the permittee implements a nuisance/exotic species maintenance program. Sarasota County has already complied with the intent of this condition by instituting a maintenance-control program for nuisance/exotic plant species for the South Cell and Walker Tract Mitigation Areas. The final annual report will be submitted to the ACOE once the mitigation areas have been deemed successful for three consecutive years.

Site Description

The CFRSF is located in Sarasota County (Sections 19, 20, 29, and 30 of Township 36 South, Range 19 East) south of Fruitville Road and east of Interstate 75 (**Figure 1**). The Celery Fields Mitigation Site is located south of Palmer Boulevard, west of Raymond Road, east of Sarasota County Canal Main C, and north of Canal Lateral CA (Figure 1).

The Celery Fields Mitigation Site is comprised of South Cell Mitigation Area, located just south of Palmer Boulevard, and the Walker Tract Mitigation Area, located just south of the South Cell and separated from the South Cell by a berm and Water Control Structure S-15 (**Figure 2**). The South Cell is comprised of 84.40 acres of created marsh, 3.80 acres of created forested wetland, 19.50 acres of open water habitat, 10.84 acres of created upland buffer, and 2.08 acres of upland preservation (**Figure 3**).

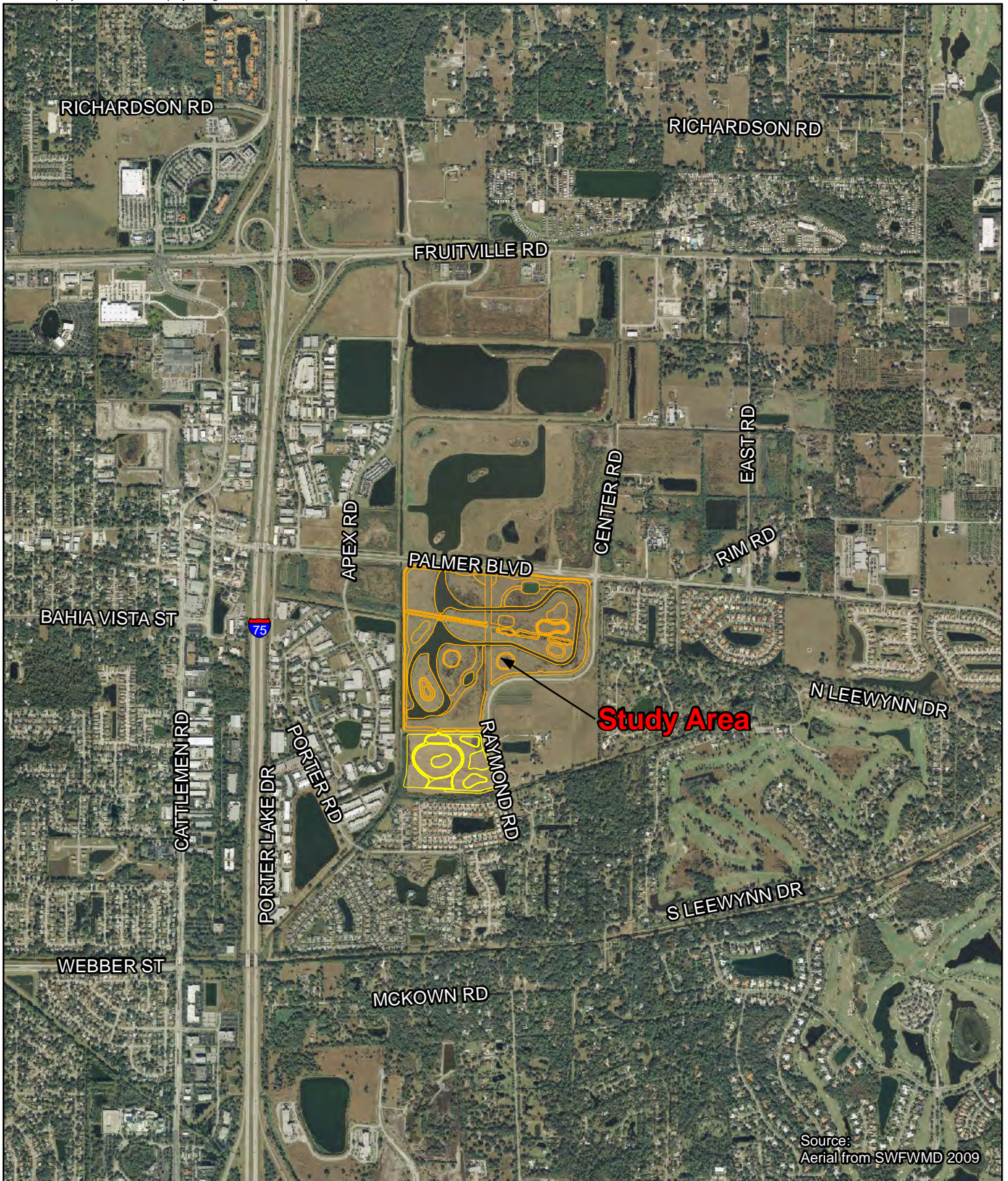
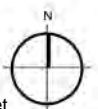


Figure 1

Celery Fields Location Map (11/16/10)



Vanasse Hangen Brustlin, Inc.
8043 Cooper Creek Boulevard, Suite 201
University Park, Florida 34201
941.351.8986



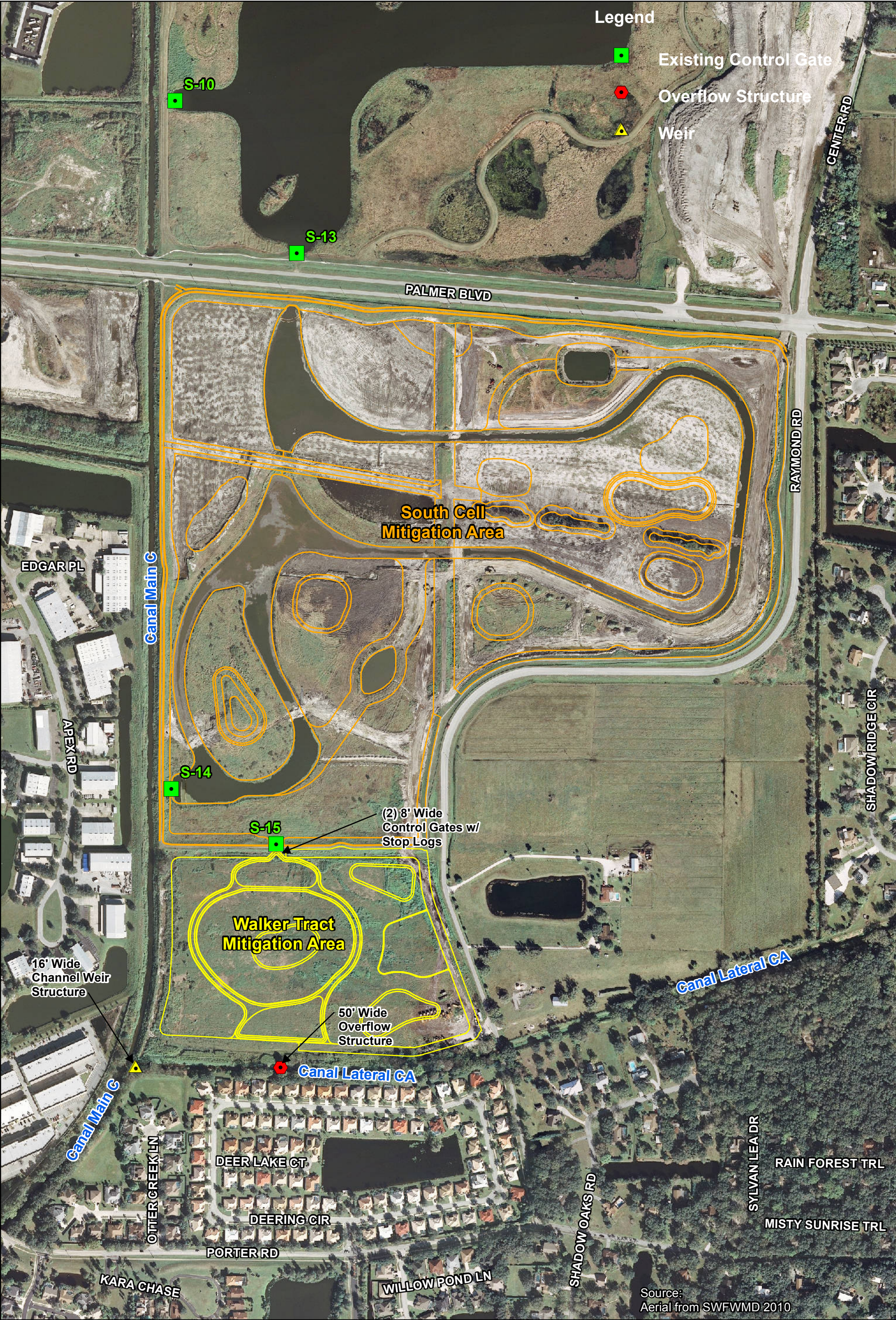


Figure 2
South Cell and Walker Tract Mitigation Areas Locations within
Celery Fields Mitigation Site

VHB Vanasse Hangen Brustlin, Inc.
8043 Cooper Creek Boulevard, Suite 201
University Park, Florida 34201
941.351.8986





Figure 3
South Cell Mitigation Area Planting Subzones (11/16/10)

The Walker Tract Mitigation Area for the ACOE permit modification is comprised of a total of 11.43 acres of created herbaceous wetland, 1.57 acres of created forested wetland, 1.67 acres of open water habitat, and 1.80 acres of upland buffer (**Figure 4**). It is important to note that approximately 9.20 acres of wetland, open water habitat, and upland buffer exist on the west side of the Walker Tract adjacent to Main Canal C are not currently being used for wetland mitigation for any local, State, or federal agency permit requirements.

Summary of Construction, Planting, and Maintenance Activities

Restoration Earthwork

Earthmoving operations for the South Cell and Walker Tract Mitigation Areas commenced in September 2009 and final grades in the mitigation areas were substantially completed by December 2010. The mitigation design called for grading down to various target elevations in numerous planting subzones to create a diversity of habitats with varied hydroperiods. In the South Cell, eight different planting zones of varying depth ranges were created. In the Walker Tract, a total of ten planting zones were created. All finished grades in the South Cell and Walker Tracts included a layer of organic soil greater than six inches. Donor soil locations were inspected for organic content and minimal exotic/nuisance plant species presence and approved by a Professional Wetland Scientist. After parts of the site were dewatered to allow for final grading and organic soil placement, the site was subsequently flooded to promote survival and active growth of planted wetland species and other desirable wetland plant species. Eroded banks were periodically repaired during the construction phase of the project.

Water Flow and Control Structure Operation

Water level in the southern portion Celery Fields Mitigation Site is intended to reach the control elevation of 14.5 ft NGVD when the wetlands are close to normal full pool. Water enters the site through Water Control Structure S-13 (Figure 2) and flows through the South Cell in a sinuous fashion to increase water-holding residence time before it is discharged at 14.5 ft NGVD into the Walker Tract through Water Control Structure S-15. Water Control Structure S-14 allows water to flow directly into the Canal Main C during periods of extreme high water events. In the Walker Tract, water then flows in a circular fashion to the south where it discharges at the approximate 14.5 ft NGVD control elevation of the fabri-form outflow weir located at the south end of the Walker Tract, where water flows into Canal Lateral CA. Water from Canal Lateral CA eventually



Figure 4
Location of Walker Tract Mitigation Area Planting Subzones

VHB Vanasse Hangen Brustlin, Inc.
8043 Cooper Creek Boulevard, Suite 201
University Park, Florida 34201
941.351.8986

0 75 150 300 Feet

Lateral CA eventually flows through some rip rap and a 16-ft wide channel weir control structure to the Canal Main C at elevation 10.0 ft NGVD.

The overflow weir and the rest of the water control structures were completed by September 2010 and have been in operation since that date. As part of the standard operating procedures and management of the CFRSF, the control structures are adjusted for maintenance, water level manipulations to maintain natural hydroperiods for compartmentalized cells, and to increase the water holding capacity of the site in anticipation of a large storm event. In August 2011, significant leakage was documented through the control structure at Palmer Boulevard. At Structure S-13 (just north of Palmer Boulevard) soil was documented to have eroded under the entire length of the control structure footer and one of the wing walls thereby allowing water to flow under the control structure. As a result, the stop logs at S-13 were removed on September 22, 2011 to prevent further erosion and to allow for repair of the undermined footer wing wall on the north side of the structure. Control structures S-6 (at the entrance to the CRFSF) and S-10 (in the Cell) were opened for a few days to allow water to flow from the site in anticipation of the significant storm event associated with Hurricane Irene in late August of 2011.

Planting

The South Cell and Walker Tract were separated into different planting zones based on the range of water depths that would be experienced when the Celery Fields Mitigation Site water level is at the control elevation. Initially, a total of 24 wetland and upland species were planted in a total of 37 planting subzone areas in the South Cell (**Table 1**). A total of 22 wetland and upland species were planted in 16 planting subzone areas in the Walker Tract (**Table 2**). All herbaceous wetland plants were installed on 3-ft centers, with the exception of water lilies (*Nymphaea odorata*) which were planted on 5-ft centers in the South Cell. All herbaceous plant materials were installed at the quart-equivalent or comparable size. All upland shrub and tree species were nursery-grown in 1 gallon pots, and all wetland shrub and tree species were 3-gallon nursery-grown stock. In addition to the trees and shrubs planted in Upland Buffer Zone (South Cell and part of Walker Tract), 61,178 (2-inch container grown) sand cordgrass (*Spartina bakeri*) were planted on 3-ft centers to provide an understory and some erosion control on the banks of these upland areas. A total of 2,000 sand cordgrass, 1,500 muhlygrass (*Muhlenbergia capillaris*), and 1,776 broomsedge (*Andropogon* spp.) were planted in the Tree Preserve Islands of the South Cell to provide understory cover and some erosion control in areas that were previously dominated by exotic/nuisance plant species.

All plants installed at the Celery Fields Mitigation Site were inspected for quality and size requirements before installation. Planting commenced in the South Cell in September 2010 and was substantially completed by November

Table 1. Sub-Zone Planting Plan for South Cell Area of Celery Fields Mitigation Site.

| | | | | | | A-1 | A-2 | A-3 | A-4 | A-5 |
|--------------------------------|----------------------|-------------|------|-------------------------|-----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Zone A Planting | <i>Total Acreage</i> | <i>1.80</i> | | <i>Sub-Zone Acreage</i> | | <i>0.512</i> | <i>0.333</i> | <i>0.422</i> | <i>0.211</i> | <i>0.289</i> |
| Scientific Name | Common Name | Zn | Size | centers (ft) | Total Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities |
| <i>Polygonum punctatum</i> | smartweed | A | qt | 3 | 1,302 | 370 | 240 | 305 | 152 | 235 |
| <i>Cladium jamacense</i> | sawgrass | A | qt | 3 | 2,604 | 741 | 481 | 610 | 305 | 467 |
| <i>Spartina bakeri</i> | sand cordgrass | A | qt | 3 | 2,170 | 617 | 401 | 508 | 254 | 390 |
| <i>Panicum hemitomon</i> | maidencane | A | qt | 3 | 435 | 123 | 80 | 101 | 50 | 81 |
| <i>Coreopsis leavenworthii</i> | tickseed | A | qt | 3 | 2,170 | 617 | 401 | 508 | 254 | 390 |

| | | | | | | B-1 | B-2 | B-3 | B-4 | B-5 | B-6 | B-7 | B-8 | B-9 | B-10 | B-11 | B-12 | B-13 |
|--------------------------------|----------------------|--------------|------|-------------------------|-----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Zone B Planting | <i>Total Acreage</i> | <i>71.90</i> | | <i>Sub-Zone Acreage</i> | | <i>6.530</i> | <i>5.543</i> | <i>14.861</i> | <i>3.673</i> | <i>2.056</i> | <i>3.443</i> | <i>13.155</i> | <i>0.622</i> | <i>5.145</i> | <i>6.052</i> | <i>0.418</i> | <i>0.592</i> | <i>9.795</i> |
| Scientific Name | Common Name | Zn | Size | centers (ft) | Total Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities |
| <i>Pontederia cordata</i> | pickerelweed | B | qt | 3 | 104,394 | 9,481 | 8,047 | 21,577 | 5,333 | 2,985 | 4,999 | 19,099 | 903 | 7,470 | 8,786 | 607 | 859 | 14,248 |
| <i>Sagittaria lancifolia</i> | lance-leaf arrowhead | B | qt | 3 | 104,394 | 9,481 | 8,047 | 21,577 | 5,333 | 2,985 | 4,999 | 19,099 | 903 | 7,470 | 8,786 | 607 | 859 | 14,248 |
| <i>Cladium jamaicense</i> | sawgrass | B | qt | 3 | 34,800 | 3,160 | 2,682 | 7,192 | 1,777 | 995 | 1,666 | 6,366 | 301 | 2,490 | 2,929 | 202 | 286 | 4,754 |
| <i>Eleocharis interstincta</i> | knotted spikerush | B | qt | 3 | 104,394 | 9,481 | 8,047 | 21,577 | 5,333 | 2,985 | 4,999 | 19,099 | 903 | 7,470 | 8,786 | 607 | 859 | 14,248 |

| | | | | | | C-1 | C-2 | C-3 | C-4 | C-5 | C-6 |
|--------------------------|----------------------|-------------|------|-------------------------|-----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Zone C Planting | <i>Total Acreage</i> | <i>6.00</i> | | <i>Sub-Zone Acreage</i> | | <i>0.560</i> | <i>0.347</i> | <i>1.201</i> | <i>0.942</i> | <i>2.687</i> | <i>0.235</i> |
| Scientific Name | Common Name | Zn | Size | centers (ft) | Total Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities |
| <i>Thalia geniculata</i> | alligator flag | C | qt | 3 | 14,520 | 1,355 | 839 | 2,907 | 2,280 | 6,503 | 636 |
| <i>Scirpus validus</i> | softstem bulrush | C | qt | 3 | 14,520 | 1,355 | 839 | 2,907 | 2,280 | 6,503 | 636 |

| | | | | | | D-1 | D-2 | D-3 |
|-------------------------|----------------------|-------------|------|-------------------------|-----------------------|---------------------|---------------------|---------------------|
| Zone D Planting | <i>Total Acreage</i> | <i>4.70</i> | | <i>Sub-Zone Acreage</i> | | <i>2.850</i> | <i>0.830</i> | <i>1.000</i> |
| Scientific Name | Common Name | Zn | Size | centers (ft) | Total Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities |
| <i>Nymphaea odorata</i> | fragrant water lily | D | qt | 5 | 8,189 | 4,966 | 1,446 | 1,777 |

Table 1. (continued) Sub-Zone Planting Plan for South Cell Area of Celery Fields Mitigation Site.

| | | | | | | E-1 | E-2 | E-3 | E-4 | E-5 | E-6 |
|----------------------------------|----------------------|------|------|-------------------------|-----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Zone E Planting | <i>Total Acreage</i> | 3.80 | | <i>Sub-Zone Acreage</i> | | 0.435 | 0.218 | 1.364 | 1.070 | 0.530 | 0.221 |
| Scientific Name | Common Name | Zn | Size | centers (ft) | Total Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities |
| <i>Fraxinus caroliniana</i> | Carolina ash | E | 3g | 5 | 3,310 | 379 | 190 | 1,188 | 931 | 461 | 161 |
| <i>Cephalanthus occidentalis</i> | buttonbush | E | 3g | 5 | 3,310 | 379 | 190 | 1,188 | 931 | 461 | 161 |
| <i>Panicum hemitomom</i> | maidencane | E | qt | 3 | 18,392 | 2,107 | 1,057 | 6,601 | 5,177 | 2,565 | 885 |

| | | | | | | F-1 | Berm Toe of Slope |
|----------------------------|----------------------|-------|------|-------------------------|-----------------------|---------------------|-------------------------|
| Zone F Planting | <i>Total Acreage</i> | 12.64 | | <i>Sub-Zone Acreage</i> | | 12.640 | |
| Scientific Name | Common Name | Zn | Size | centers (ft) | Total Zone Quantities | Sub-Zone Quantities | |
| <i>Sabal palmetto</i> | cabbage palm | F | 1g | scattered | 300 | 300 | |
| <i>Pinus ellottii</i> | slash pine | F | 1g | scattered | 700 | 700 | |
| <i>Quercus virginiana</i> | live oak | F | 1g | scattered | 500 | 500 | |
| <i>Magnolia virginiana</i> | sweetbay | F | 1g | scattered | 500 | 500 | |
| <i>Myrica cerifera</i> | wax myrtle | F | 1g | scattered | 200 | 200 | |
| <i>Celtis laevigata</i> | sugarberry | F | 1g | scattered | 500 | 500 | |
| <i>Viburnum obovatum</i> | Walter's viburnum | F | 1g | scattered | 300 | 300 | |
| <i>Serenoa repens</i> | saw palmetto | F | 1g | scattered | 500 | 500 | |
| <i>Ilex glabra</i> | gallberry | F | 1g | scattered | 1,000 | 1,000 | |
| <i>Spartina bakeri</i> | sand cordgrass | F | qt | scattered | 61,178 | 61,178 | 3,760 |

| | | | | | | PET-1 | PET-2 | PET-3 |
|-------------------------------|----------------------|------|------|-------------------------|-----------------------|---------------------|---------------------|---------------------|
| Tree Islands | <i>Total Acreage</i> | 2.08 | | <i>Sub-Zone Acreage</i> | | 0.568 | 0.797 | 0.715 |
| Scientific Name | Common Name | Zn | Size | centers (ft) | Total Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities |
| <i>Spartina bakeri</i> | sand cordgrass | PET | qt | 3 | 2,000 | 546 | 766 | 688 |
| <i>Muhlenbergia capilaris</i> | muhly grass | PET | qt | 3 | 1,500 | 410 | 575 | 516 |
| <i>Andropogon</i> spp. | broomsedge | PET | qt | 3 | 1,776 | 485 | 681 | 611 |

Table 2. Planting Plan for Entire Walker Tract.

| | | | | Subzone Areas | | A-1 | A-2 | A-3 | A-4 | B-1 | B-2 | C-1 | D-1 | E-1 | F-1 | F-2 | G-1 | G-2 | H-1 | H-2 |
|----------------------------------|----------------|----------|--------------|-----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | | | | Acreage | | 0.01 | 3.82 | 5.53 | 5.70 | 0.09 | 0.14 | 0.18 | 0.93 | 0.20 | 0.91 | 0.65 | 0.37 | 0.50 | 1.52 | 0.05 |
| | | | | Number of plants | | 49 | 18,489 | 26,766 | 27,588 | 436 | 678 | 872 | 4,502 | 968 | 4,405 | 3,146 | 1,791 | 2,420 | 8,020 | 242 |
| Scientific Name | Common Name | Size | centers (ft) | Total Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities |
| <i>Acer rubrum</i> | red maple | 3-gallon | 10 | 221 | | | | | | | | | | | | | | | 221 | |
| <i>Bacopa monierri</i> | bacopa | qt-equiv | 3 | 4,800 | | 800 | 2,000 | 2,000 | | | | | | | | | | | | |
| <i>Cephalanthus occidentalis</i> | buttonbush | 3-gallon | 10 | 663 | | | | | | | | | | | | | | | 663 | |
| <i>Eleocharis interstincta</i> | spikerush | qt-equiv | 3 | 15,309 | | 3,189 | 5,000 | 3,000 | | | | 700 | 100 | 500 | 500 | | 320 | 2,000 | | |
| <i>Fraxinus caroliniana</i> | popash | 3-gallon | 10 | 221 | | | | | | | | | | | | | | | 221 | |
| <i>Nymphaea odorata</i> | water lily | qt-equiv | 3 | 6,200 | | | | | | | 100 | 500 | 200 | 2,000 | 1,000 | 1,000 | 1,000 | | | |
| <i>Nyssa sylvatica</i> | swamp tupelo | 3-gallon | 10 | 221 | | | | | | | | | | | | | | | 221 | |
| <i>Panicum hemitomon</i> | maidencane | qt-equiv | 3 | 17,921 | 20 | 4,000 | 5,000 | 4,000 | 236 | | 272 | 1,500 | | 405 | 246 | | | | 2,000 | 242 |
| <i>Polygonum punctatum</i> | smartweed | qt-equiv | 3 | 15,671 | | 4,000 | 6,000 | 4,000 | | 278 | 100 | 502 | 368 | | | | | | | |
| <i>Pontederia cordata</i> | pickerelweed | qt-equiv | 3 | 14,576 | 19 | 1,500 | 4,000 | 5,000 | 200 | | 200 | 500 | 200 | 500 | 500 | 200 | 400 | 1,357 | | |
| <i>Sagittaria lancifolia</i> | arrowhead | qt-equiv | 3 | 12,091 | | 1,500 | 3,000 | 5,000 | | 200 | | 500 | 100 | 500 | 500 | 391 | 400 | | | |
| <i>Scirpus californicus</i> | bullrush | qt-equiv | 3 | 5,600 | | 500 | 1,000 | 2,000 | | 200 | 200 | 300 | | 500 | 400 | 200 | 300 | | | |
| <i>Spartina bakeri</i> | sand cordgrass | qt-equiv | 3 | 8,364 | 10 | 3,000 | 766 | 2,588 | | | | | | | | | | | 2,000 | |

2010. In the Walker Tract, the planting started in October 2010 and was substantially completed by November 2010. The planting contractor has an 85% plant survival guarantee for one year for all woody species and a 100% survival guarantee for all herbaceous species. In December 2010, Vanasse Hangen Brustlin, Inc. (VHB) conducted a final plant inspection to verify survival of all species and proper subzone placement. To comply with the plant survival warranty, replanting plans for the Walker Tract and the South Cells were approved (**Tables 3 and 4** respectively). On December 17, 2010, the Walker Tract replanting was implemented. The South Cell replanting was conducted from March 11-15, 2011.

Mortality of plants in the herbaceous and forested wetlands was again assessed in April 2011 and a replanting was conducted from July 18-25, 2011 (**Table 5**). In the forested wetland in the Walker Tract, a plant substitution of cypress (*Taxodium distichum*) was allowed. Because sawgrass (*Cladium jamaicense*) was not available and had to be grown to the appropriate sized nursery grown plants, 7,000 sawgrass were installed at a later date on September 13, 2011.

In August 2011, the upland buffers had been inspected for warranty survival of trees, shrubs and sand cordgrass. As a result of a mutually agreed upon compromise between the planting contractor and Sarasota County, a total of 3,440 grasses, 200 shrubs, and 45 trees was installed in the upland buffer on September 28, 2011 (Table 5). As part of the replanting plan the upland buffer plant diversity was increased by adding Fakahatchee grass (*Tripsacum dactyloides*), muhly grass (*Muhlenbergia capillaris*), bushybeard bluestem (*Andropogon glomeratus*), Florida privet (*Forestiera segregata*), and American elm (*Ulmus americana*).

Exotic/Nuisance Species Maintenance

The South Cell and Walker Tract Mitigation Areas have been regularly maintained for exotic/nuisance plant species since February 2010. All sites were carefully evaluated by VHB environmental scientists before and after the initial plantings and communicated to the maintenance contractor with detailed maps of nuisance species presence. All sites are currently under contracted maintenance until January 2012. After that date, the County will contract out maintenance and implement a long-term maintenance program with the rest of the CFRSF. Exotic/nuisance plant species coverage is currently at less than 10% for the entire Celery Fields Mitigation Site.

Exotic/nuisance species that are targeted for active maintenance on the Celery Fields Mitigation Site include all Category (CAT) 1 and CAT 2 Invasive Exotics listed on the most recent Florida *Exotic Pest Plant Council's List of Invasive Plant Species* and other aggressive nuisance species that can affect the targeted restoration habitat. CAT 1 species are defined as all exotic invasive species that can alter native plant communities by displacing native species and can change community structures or ecological functions, or can hybridize with natives. CAT 2 species are all invasive exotics that have increased in abundance or frequency but have not yet altered Florida plant communities to the extent shown by Category 1 species.

Table 3. Sub-Zone Replanting Plan for South Cell Area of Celery Fields Mitigation Site.

| | | | | | | A-1 | A-2 | A-3 | A-4 | A-5 |
|--------------------------------|----------------------|-------------|------|-------------------------|-----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Zone A Planting | <i>Total Acreage</i> | <i>1.80</i> | | <i>Sub-Zone Acreage</i> | | <i>0.512</i> | <i>0.333</i> | <i>0.422</i> | <i>0.211</i> | <i>0.289</i> |
| Scientific Name | Common Name | Zn | Size | centers (ft) | Total Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities |
| <i>Polygonum punctatum</i> | smartweed | A | qt | 3 | 1,302 | 30 | | 200 | | |
| <i>Cladium jamacense</i> | sawgrass | A | qt | 3 | 2,604 | 70 | 300 | 610 | | 100 |
| <i>Spartina bakeri</i> | sand cordgrass | A | qt | 3 | 2,170 | 60 | 100 | 200 | 100 | |
| <i>Panicum hemitomon</i> | maidencane | A | qt | 3 | 435 | 20 | 40 | 100 | 50 | |
| <i>Coreopsis leavenworthii</i> | tickseed | A | qt | 3 | 2,170 | 600 | 401 | 500 | 250 | 390 |

| | | | | | | B-1 | B-2 | B-3 | B-4 | B-5 | B-6 | B-7 | B-8 | B-9 | B-10 | B-11 | B-12 | B-13 |
|--------------------------------|----------------------|--------------|------|-------------------------|-----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Zone B Planting | <i>Total Acreage</i> | <i>71.90</i> | | <i>Sub-Zone Acreage</i> | | <i>6.530</i> | <i>5.543</i> | <i>14.861</i> | <i>3.673</i> | <i>2.056</i> | <i>3.443</i> | <i>13.155</i> | <i>0.622</i> | <i>5.145</i> | <i>6.052</i> | <i>0.418</i> | <i>0.592</i> | <i>9.795</i> |
| Scientific Name | Common Name | Zn | Size | centers (ft) | Total Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities |
| <i>Pontederia cordata</i> | pickerelweed | B | qt | 3 | 104,394 | 3,000 | 400 | 1,500 | 500 | 600 | 1,000 | 2,000 | 90 | 500 | 1,600 | 100 | 80 | 700 |
| <i>Sagittaria lancifolia</i> | lance-leaf arrowhead | B | qt | 3 | 104,394 | 1,000 | 400 | 1,500 | 500 | 600 | 1,000 | 2,000 | 90 | 1,000 | 1,600 | | 80 | 700 |
| <i>Cladium jamaicense</i> | sawgrass | B | qt | 3 | 34,800 | 1,000 | 200 | 1,000 | 800 | 800 | 500 | 600 | 30 | 500 | 600 | 100 | 100 | 500 |
| <i>Eleocharis interstincta</i> | knotted spikerush | B | qt | 3 | 104,394 | | 400 | 1,000 | | | | | 90 | 1,400 | 400 | 100 | | |

| | | | | | | C-1 | C-2 | C-3 | C-4 | C-5 | C-6 |
|--------------------------|----------------------|-------------|------|-------------------------|-----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Zone C Planting | <i>Total Acreage</i> | <i>6.00</i> | | <i>Sub-Zone Acreage</i> | | <i>0.560</i> | <i>0.347</i> | <i>1.201</i> | <i>0.942</i> | <i>2.687</i> | <i>0.235</i> |
| Scientific Name | Common Name | Zn | Size | centers (ft) | Total Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities |
| <i>Thalia geniculata</i> | alligator flag | C | qt | 3 | 14,520 | 100 | 80 | | | 650 | 40 |
| <i>Scirpus validus</i> | softstem bulrush | C | qt | 3 | 14,520 | 100 | 80 | | | 650 | 40 |

| | | | | | | D-1 | D-2 | D-3 |
|-------------------------|----------------------|-------------|------|-------------------------|-----------------------|---------------------|---------------------|---------------------|
| Zone D Planting | <i>Total Acreage</i> | <i>4.70</i> | | <i>Sub-Zone Acreage</i> | | <i>2.850</i> | <i>0.830</i> | <i>1.000</i> |
| Scientific Name | Common Name | Zn | Size | centers (ft) | Total Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities |
| <i>Nymphaea odorata</i> | fragrant water lily | D | qt | 5 | 8,189 | 993 | 289 | 0 |

Sub-Zone Replanting Plan for South Cell was approved on January 2011 and implemented in March 2011.

Table 3. Sub-Zone Replanting Plan for South Cell....(Continued).

| | | | | | | E-1 | E-2 | E-3 | E-4 | E-5 | E-6 |
|-----------------------------|---------------|------|------|------------------|-----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Zone E Planting | Total Acreage | 3.80 | | Sub-Zone Acreage | | 0.435 | 0.218 | 1.364 | 1.070 | 0.530 | 0.221 |
| Scientific Name | Common Name | Zn | Size | centers (ft) | Total Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities |
| <i>Fraxinus caroliniana</i> | Carolina ash | E | 3g | 5 | 3,310 | | | | | restake | |
| <i>Panicum hemitomon</i> | maidencane | E | qt | 3 | 18,392 | | 200 | | | 2,000 | |

| | | | | | | F-1 |
|------------------------|----------------|-------|------|------------------|-----------------------|---------------------|
| Zone F Planting | Total Acreage | 12.64 | | Sub-Zone Acreage | | 12.640 |
| Scientific Name | Common Name | Zn | Size | centers (ft) | Total Zone Quantities | Sub-Zone Quantities |
| <i>Spartina bakeri</i> | sand cordgrass | F | qt | scattered | 61,178 | 6,178 |

| | | | | | | PET-1 | PET-2 | PET-3 |
|------------------------|----------------|------|------|------------------|-----------------------|---------------------|---------------------|---------------------|
| Tree Islands | Total Acreage | 2.08 | | Sub-Zone Acreage | | 0.568 | 0.797 | 0.715 |
| Scientific Name | Common Name | Zn | Size | centers (ft) | Total Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities | Sub-Zone Quantities |
| <i>Spartina bakeri</i> | sand cordgrass | PET | qt | 3 | 2,000 | 300 | 400 | 400 |

Sub-Zone Replanting Plan for South Cell was approved on January 2011 and implemented in March 2011.

Table 4. Replanting Plan for Walker Tract (Approved in December 2010 and Implemented in January 2011).

| | | Number Planted Per Plans | Total Number Replanted by Species | | | | | | | | | | | | |
|--|--|--------------------------------|-----------------------------------|-------------------------------|----------------------------------|------------------------------------|--------------------------------|----------------------------|------------------------------|------------------------|-----------------------------|--------------------|---------------------------------|------------------------|--------------------------------------|
| | | | <i>Scirpus californicus</i> | <i>Pontederia cordata</i> | <i>Sagittaria lancifolia</i> | <i>Eleocharis interstincta</i> | <i>Polygonum punctatum</i> | <i>Bacopa monierri</i> | <i>Panicum hemitomon</i> | <i>Spartina bakeri</i> | <i>Nymphaea odorata</i> | <i>Acer rubrum</i> | <i>Fraxinus caroliniana</i> | <i>Nyssa sylvatica</i> | <i>Cephalanthus occidentalis</i> |
| | | | bullrush | pickerelweed | arrowhead | spikerush | smartweed | water hyssop | maidencane | sand cordgrass | water lily | red maple | popash | swamp tupelo | buttonbush |
| | | 49 | | | | | | | | | | | | | |
| | | 18,489 | 100 | 200 | 200 | 300 | | | 200 | | | | | | |
| | | 26,766 | | 400 | 300 | 300 | | | 200 | | | | | | |
| | | 27,588 | | 300 | 250 | 150 | | | 200 | | | | | | |
| | | 436 | | | | | | | | | | | | | |
| | | 678 | | | | | | | | | | | | | |
| | | 872 | | | | | | | | | | | | | |
| | | 4,502 | 30 | 100 | | 100 | | | 300 | | 200 | | | | |
| | | 968 | | | | | | | | | | | | | |
| | | 4,405 | 50 | 50 | 50 | | | | | | 100 | | | | |
| | | 3,146 | 200 | 250 | 250 | 200 | | | 200 | | 500 | | | | |
| | | 823 | | | | | | | | | | | | | |
| | | 1,791 | | | | | | | | | | | | | |
| | | 2,420 | | | | | | | | | | | | | |
| | | 8,020 | | | | | | | | | | | | | 663 |
| | | 242 | | | | | | | | | | | | | |
| | | 6,343 | 380 | 1,300 | 1,050 | 1,050 | 0 | 0 | 1,100 | 0 | 800 | 0 | 0 | 0 | 663 |
| | | 101,195 | 5,600 | 14,576 | 12,091 | 15,309 | 15,671 | 4,800 | 17,921 | 8,364 | 6,200 | 221 | 221 | 221 | 663 |

Sub-Zone Replanting Plan for Walker Tract was approved in December 2010 and implemented in January 2011.

Table 5. Replanting Plan Implemented for South Cell and Walker Tract Mitigation Areas from July 2011 through September 2011.

| | | Site | | | Total | Date Replanted |
|---------------------|----------------------------------|---------------|---------------|---------------|---------------|----------------------|
| | | South Cell | Walker Tract | Upland Buffer | | |
| sawgrass | <i>Cladium jamaicense</i> | 6,300 | 700 | | 7,000 | 9/13/2011 |
| maidencane | <i>Panicum hemitomom</i> | 4,000 | 3,000 | | 7,000 | 7/25/2011 |
| pickerelweed | <i>Pontederia cordata</i> | 7,987 | 6,013 | | 14,000 | 7/18-19/2011 |
| arrowhead | <i>Sagittaria lancifolia</i> | 7,888 | 6,112 | | 14,000 | 7/19-20/2011 |
| bullrush | <i>Scirpus californicus</i> | 11,475 | 2,525 | | 14,000 | 7/20-25/2011 |
| alligator flag | <i>Thalia geniculata</i> | 11,487 | 2,513 | | 14,000 | 7/22/2011 |
| sand cordgrass | <i>Spartina bakeri</i> | 1,000 | 4,000 | 1,180 | 6,180 | 7/25/2011, 9/28/2011 |
| buttonbush | <i>Cephalanthus occidentalis</i> | | 200 | | 200 | 7/20/2011 |
| swamp tupelo | <i>Nyssa sylvatica</i> | | 70 | | 70 | 7/20/2011 |
| popash | <i>Fraxinus carolinana</i> | | 80 | | 80 | 7/20/2011 |
| cypress | <i>Taxodium distichum</i> | | 221 | | 221 | 7/20/2011 |
| Florida privet | <i>Forestiera segregata</i> | | | 100 | 100 | 9/28/2011 |
| American elm | <i>Ulmus americana</i> | | | 45 | 45 | 9/28/2011 |
| Walter's viburnum | <i>Viburnum obovatum</i> | | | 100 | 100 | 9/28/2011 |
| Fakahatchee grass | <i>Tripsacum dactyloides</i> | | | 504 | 504 | 9/28/2011 |
| muhly grass | <i>Muhlenbergia capillaris</i> | | | 1,180 | 1,180 | 9/28/2011 |
| bushybeard bluestem | <i>Andropogon glomeratus</i> | | | 576 | 576 | 9/28/2011 |
| Totals | | 50,137 | 25,434 | 3,685 | 79,256 | |

Wildlife Habitat and Recreational Improvements

Wildlife habitat improvements and recreation facilities are located throughout the site (Figure 5). An osprey nesting platform was installed in Planting Subzone D-3 of the South Cell on September 16, 2010. In December 2010, a total of nine cabbage palm (*Sabal palmetto*) trees (greater than 10-ft trunk length) were planted in the South Cell and Walker Tract to provide snags and perches for a variety of wading birds and birds-of-prey. In addition, a total of seven wood duck boxes with predator guards will be mounted on posts at approximately 18.5 ft NGVD, or approximately 4 feet above normal full pool. The wood duck boxes were purchased by Sarasota County in September 2011 and will be installed by County staff by January 2012.

Currently, Sarasota County is working on a trail system for the South Cell and Walker Tract that integrates this phase into other parts of the CFRSF including a landscaped observation mound located in the Central Cell just north of Palmer Boulevard and west of Center Road. A 12-ft crushed-concrete path for bird watchers, hikers, and other recreationists has been installed along the berm on the outside of the facility. A mortise fence along Palmer Boulevard and Raymond Road were also installed to protect the plants and wildlife in mitigation areas from ATV use and other vandalism. Two boardwalks with terminal gazebos (as approximately shown in Figure 5) will also be installed to provide recreational opportunities. At the time of this report, the boardwalk and gazebo along Palmer Boulevard had been completed. The boardwalk and gazebo off Raymond Road will be constructed during the Spring of 2012. All recreational trails, boardwalks, and other recreational amenities associated with the South Cell and Walker Tract Mitigation Areas will be completed by May 2012.

Mitigation Monitoring Program

Hydrological Monitoring

Water levels have been monitored at the Celery Fields Mitigation Site in deep open water zones since April 2011. Two stations, one north of Palmer Boulevard (5-13), one at Structure S-14, one at the South Cell (Structure S-15) and one in the Walker Tract (near Overflow Weir) are both equipped with staff gauges dataloggers and KPSI pressure transducers. Water levels are reported in 15 minute intervals to the nearest 0.01 ft, NGVD. All staff gauges were surveyed by Sarasota County Survey Department. In addition, water depths are recorded at all wetland quadrat locations to determine the variability in water level conditions. To address the hydroperiods of wetlands, rainfall data from Sarasota County's Automated Rainfall Monitoring System (ARMS) are presented for the same period.

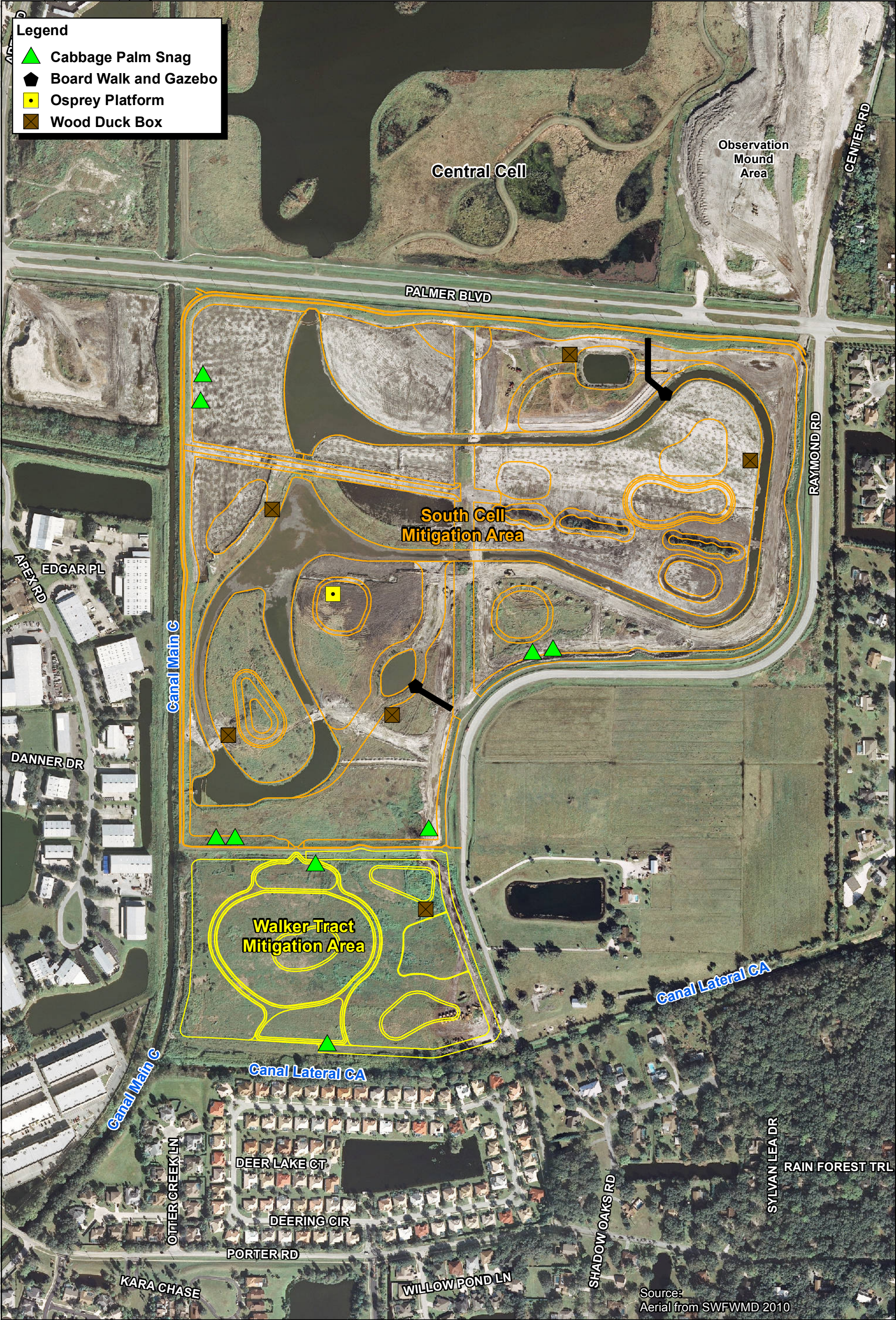


Figure 5
Wildlife Habitat and Recreational Improvements for
Celery Fields Mitigation Site

VHB *Vanasse Hangen Brustlin, Inc.*
8043 Cooper Creek Boulevard, Suite 201
University Park, Florida 34201
941.351.8986



Ecological Monitoring

Quantitative vegetation monitoring is conducted along ten transects (SC-1 through SC-10) in the South Cell Mitigation Area and along four transects (W-1 through W-4) in the Walker Tract Mitigation Area as shown in **Figures 6 and 7** respectively. Vegetation is monitored in ten quadrats uniformly distributed along each of the transects for a total of 140 quadrats. Percent cover by species is recorded for each quadrat. The start and end points of all transects are permanently marked in the field with rebar and 2-inch PVC with a red stripe at the top. Data for each of the monitoring transects for the March 2011 and September 2011 monitoring events are provided as **Attachment A and B**, respectively.

Color photographs are taken from the start points of all herbaceous and forested wetland transects during each monitoring event. Photos for the First Semi-Annual and First Annual Mitigation Monitoring Events are provided as **Appendices C and D**, respectively.

Ecological Monitoring will include qualitative evaluations of the upland buffers and Tree Preserve Islands. Qualitative evaluations include survival of planted species, general health and growth of trees, shrubs and understory species, coverage of exotic/nuisance plant species, condition of soils, and any observations of soil erosion.

Exotic and nuisance species are monitored in all wetlands and uplands in the Celery Fields Mitigation Site. Maintenance activities for the year will also be summarized for the preceding October through September period.

Wildlife use (mainly avian wildlife) has been documented monthly since April 2011. During monthly bird surveys of the entire CFRSF (including the North Cell, Central Cell, South Cell and Walker Tract), numbers of all species are recorded during an approximately 5-hour survey conducted typically in the morning near the end of each month. Mammals, reptiles, amphibians, fish and other wildlife species will be documented as incidental observations. Wildlife habitat benefits, especially to listed species, are summarized for the mitigation site.

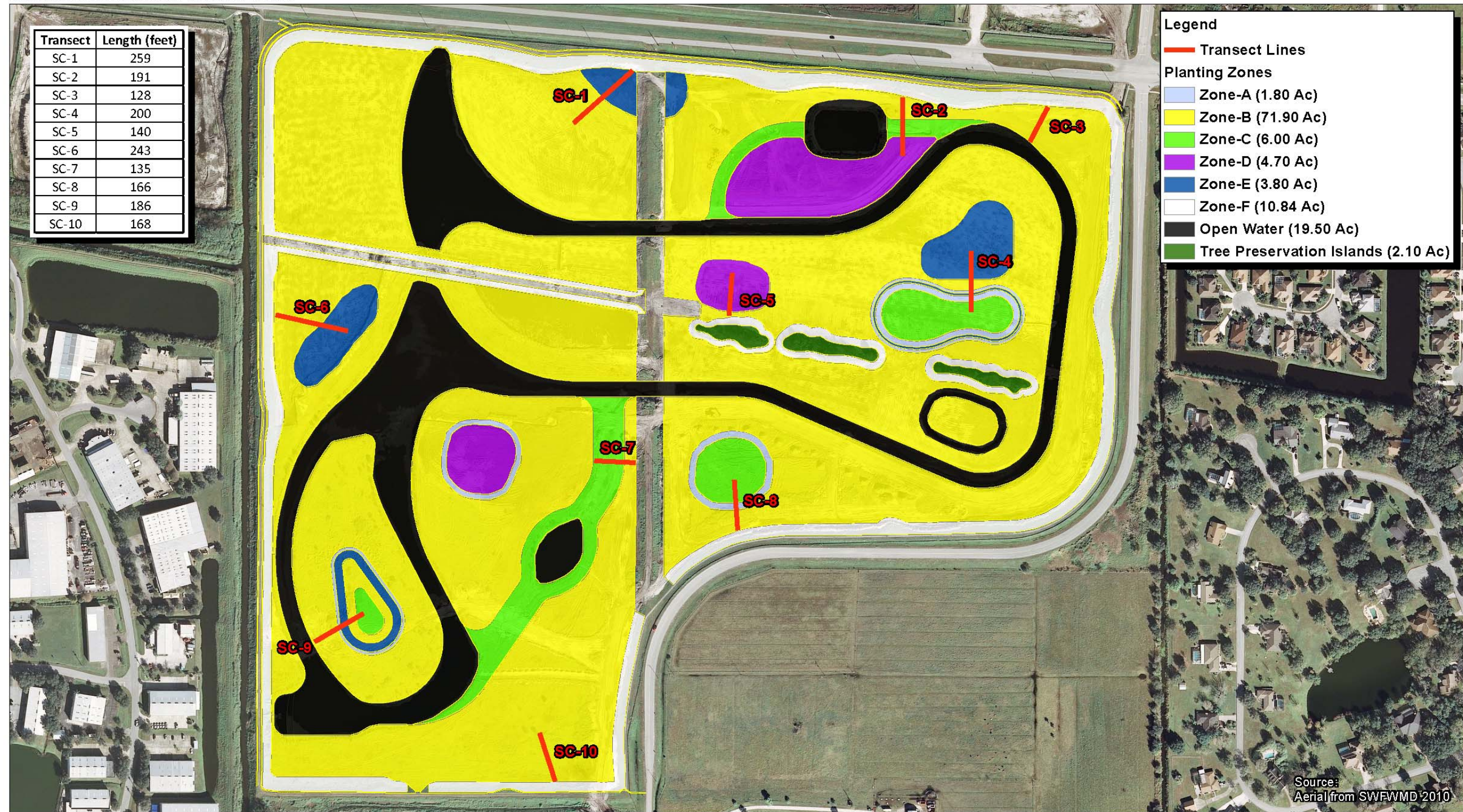
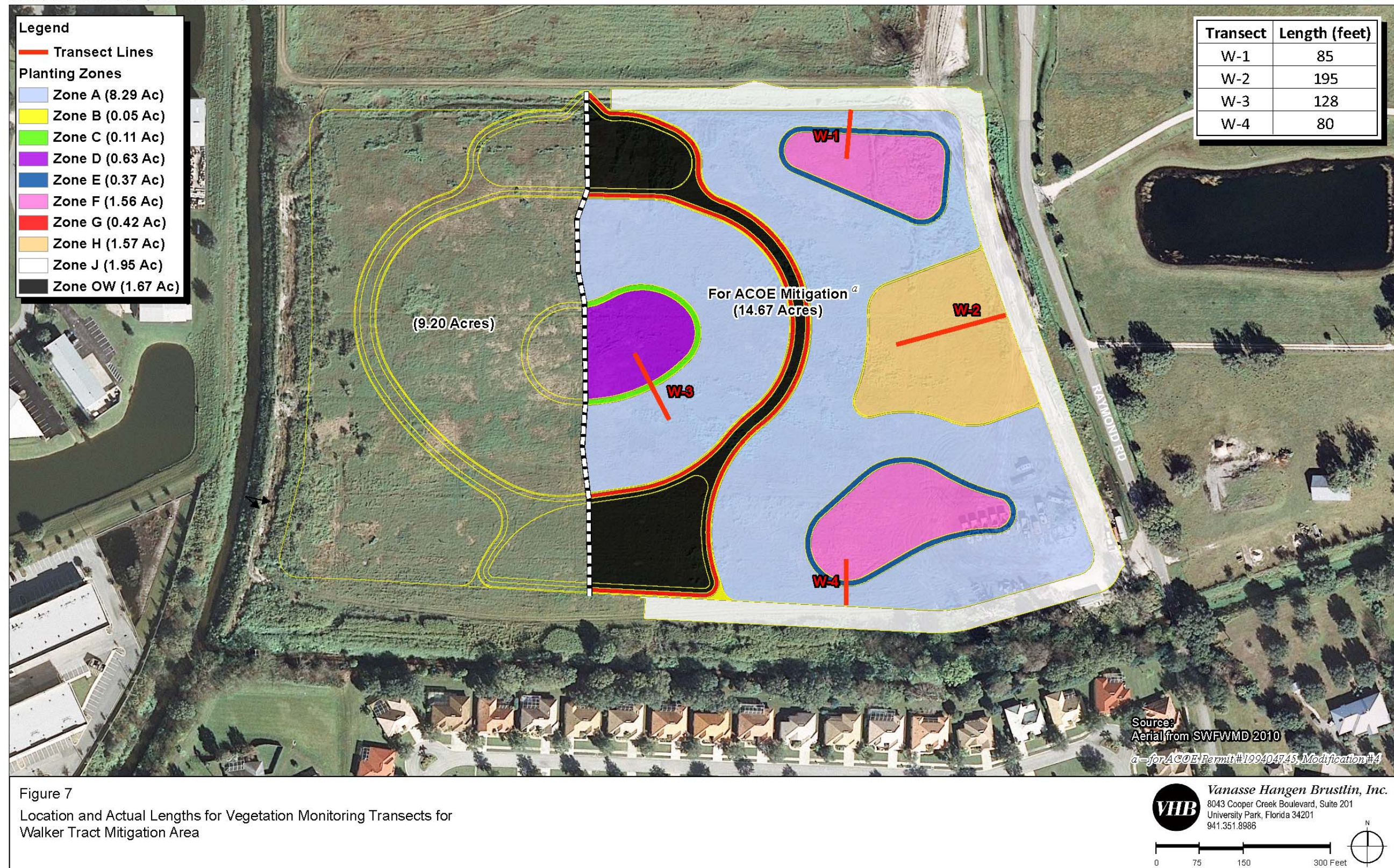


Figure 6
Location and Actual Lengths of Vegetation Monitoring Transects for
South Cell Mitigation Area



Mitigation Monitoring Results

Hydrologic Monitoring

Water levels at the Celery Fields Mitigation Site ranged approximately 2 feet from a low in late June 2011 to a high in early April 2011 (**Figure 8**). Water levels rose above the control elevation of 14.50 ft, NGVD during most days for the period of record. Noticeable increases in water levels at both the South Cell and Walker Tract areas usually followed daily rainfall events greater than 0.5 inch. The South Cell water level was significantly higher than the water level in the Walker Tract in April 2011 because water was diverted away from the Walker Tract prior to this period to allow for establishment of final grades and planting of the Walker Tract.

The average water depth for each of the herbaceous planting zones in the South Cell Mitigation Area ranged from 0.62 ft in Zone A to 1.87 ft in Zone D (water lily zone) (**Table 6**). The average water depths for the herbaceous wetland zones in the Walker Tract Mitigation Area ranged from 0.63 feet to 2.13 feet in Zones F and G, respectively. The average water depths for the forested wetland zones were 0.62 ft and 0.38 ft for the South Cell and Walker Tract, respectively. The average water depths for the dry season (April through May) were not much different than for the wet season (June through September). During subsequent years as more data are collected, that water levels during the dry season are expected to significantly less than wet seasons during most years.

All of the herbaceous wetland zones in both the South Cell and Walker Tract were inundated since April 2011. The forested wetland Zone E in South Cell was dry for a period of 23 days (June 19, 2011 through June 27, 2011). Similarly, the forested wetland Zone H in Walker Tract dried out for a relatively shorter period (9 days). Drying out of wetlands seasonally is important to sustaining wetland plant communities. Sarasota County will evaluate this routinely to keep the various species healthy, flourishing, and propagating.

The hydrologic conditions described above provide variable conditions for a variety of wetland and aquatic plant species throughout the mitigation site and have provided suitable conditions for an increase in plant cover since the initial planting in late 2010. These hydrologic conditions are also within the range of natural herbaceous and forested wetlands in Southwest Florida.

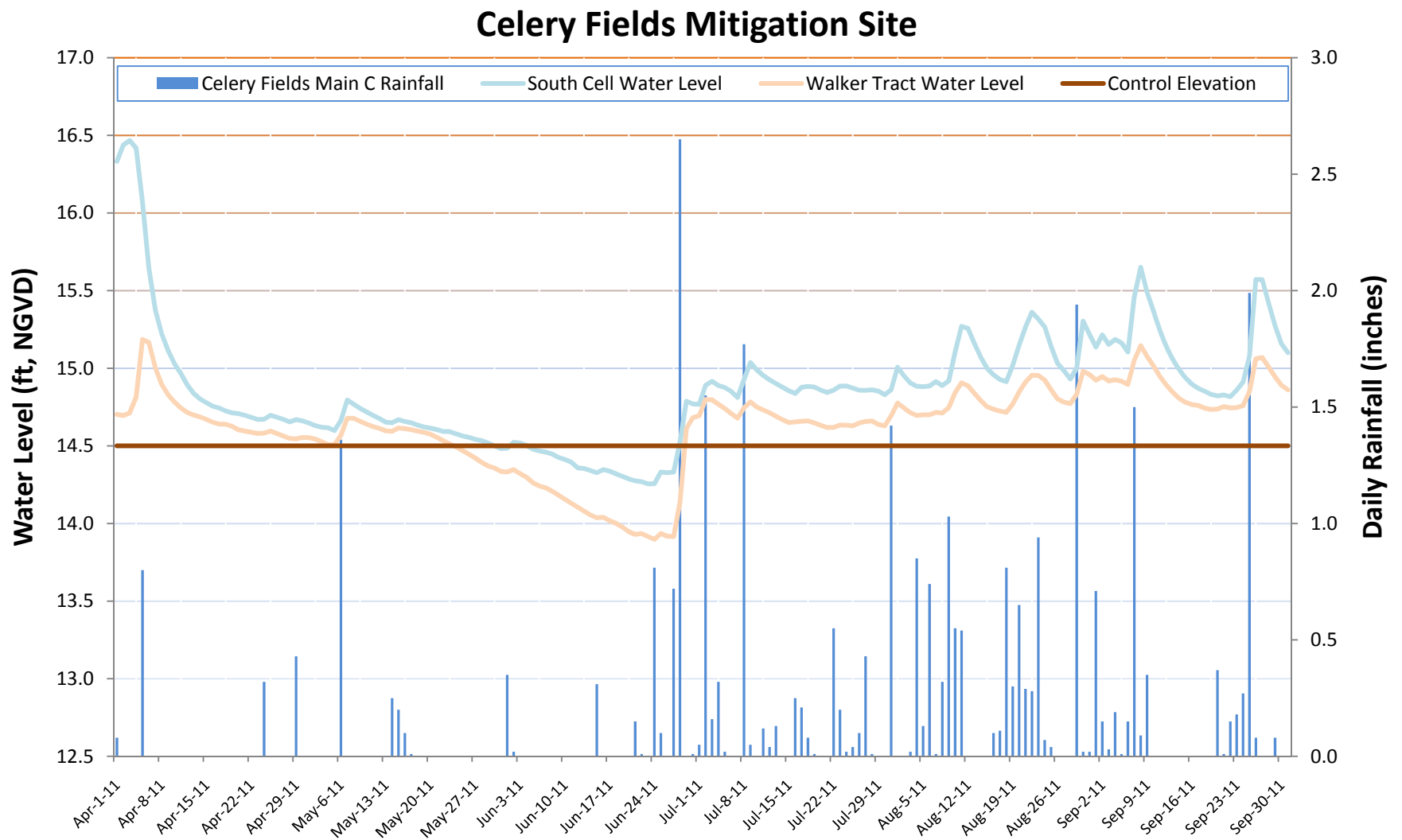


Figure 8. Celery Fields Mitigation Site Rainfall and Water Levels for the Period April 1, 2011 to October 1, 2011

Table 6. Water Level Statistics for the Different Planting Zones for the period April 1, 2011 through October 1, 2011.

| | South Cell Zones | | | | | Walker Tract Zones | | | | | | | |
|-------------------------------------|-------------------|-------------------|-------------------|-------------------|-----------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-----------------|
| | Herbaceous Zone A | Herbaceous Zone B | Herbaceous Zone C | Herbaceous Zone D | Forested Zone E | Herbaceous Zone A | Herbaceous Zone B | Herbaceous Zone C | Herbaceous Zone D | Herbaceous Zone E | Herbaceous Zone F | Herbaceous Zone G | Forested Zone H |
| Total Size (acres) | 1.80 | 71.90 | 6.00 | 4.70 | 3.80 | 15.06 | 0.23 | 0.18 | 0.93 | 0.37 | 0.65 | 0.87 | 1.57 |
| Highest Elevation (ft, NGVD) | 14.50 | 14.00 | 13.50 | 13.00 | 14.25 | 14.00 | 14.00 | 14.00 | 13.00 | 13.50 | 12.50 | 13.50 | 14.25 |
| Lowest Elevation (ft, NGVD) | 14.00 | 14.00 | 13.50 | 13.00 | 14.25 | 14.00 | 13.50 | 13.00 | 13.00 | 12.50 | 12.50 | 11.50 | 14.25 |
| Average Elevation (ft, NGVD) | 14.25 | 14.00 | 13.50 | 13.00 | 14.25 | 14.00 | 13.75 | 13.50 | 13.00 | 13.00 | 12.50 | 12.50 | 14.25 |
| Average Water Depth (ft) | 0.62 | 0.87 | 1.37 | 1.87 | 0.62 | 0.63 | 0.88 | 1.13 | 1.63 | 1.63 | 2.13 | 2.13 | 0.38 |
| Average Wet Season Water Depth (ft) | 0.62 | 0.87 | 1.37 | 1.87 | 0.62 | 0.63 | 0.88 | 1.13 | 1.63 | 1.63 | 2.13 | 2.13 | 0.38 |
| Average Dry Season Water Depth (ft) | 0.61 | 0.86 | 1.36 | 1.86 | 0.61 | 0.62 | 0.87 | 1.12 | 1.62 | 1.62 | 2.12 | 2.12 | 0.37 |
| Total Days Not Inundated | 0 | 0 | 0 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Total Days Inundated | 183 | 183 | 183 | 183 | 160 | 183 | 183 | 183 | 183 | 183 | 183 | 183 | 174 |
| Percent of Time Inundated | 100% | 100% | 100% | 100% | 87% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 95% |

Ecological Monitoring

Herbaceous Wetland Areas

Total cover of desirable wetland plant species for the South Cell for the ten transects ranged from 5.5% to 67.5% and averaged 21.4% during the March 2011 monitoring event (**Table 7**). Total desirable cover for the four transects in the Walker Tract ranged from 4.0% to 7.8% and averaged 5.4%. Total plant cover by desirable wetland plant species improved during the September 2011 monitoring event. In September 2011, total desirable cover for the South Cell ranged from 39.2% to 81.5% and averaged 59.8% (**Table 8**). The desirable plant cover for the Walker Tract for September 2011 monitoring ranged from 24.0% to 60.8% and averaged 44.0%.

Most planted herbaceous wetland species had good survival with good growth since the original plantings and subsequent warranty replantings. In particular, jointed spikerush (*Eleocharis interstincta*), arrowhead (*Sagittaria lancifolia*), pickerelweed (*Pontederia cordata*), alligator flag (*Thalia geniculata*), bulrush (*Scirpus californicus*), and smartweed (*Polygonum punctatum*) had excellent growth and coverage during the first year of monitoring. Sawgrass (*Cladium jamaicense*), maidencane (*Panicum hemitomon*), and water lily (*Nymphaea odorata*) had good survival and excellent growth in select areas.

Zone D (Water Lily Zone)

The water lily zone in the South Cell was monitored in a total of 13 quadrats in two different transects. Average desirable cover for this deep water zone was 7.7% during March 2011 and 23.2% during September 2011. Although coverage of the lily zone increased, the D-Zone monitored as part of Transect SC-2 had no coverage of live water lilies or other macrophytes.

Forested Wetland Areas

Forested wetland zones were monitored in a total of 26 quadrats, 10 from the Walker Tract and 16 from the South Cell. These forested wetland areas are Zone E in South Cell and Zone H in the Walker Tract. The herbaceous cover for the forested wetlands averaged 6.8% for both areas in March 2011. In September 2011, the herbaceous understory cover increased to an average of 25.1%. The noticeable increases in herbaceous species are a result of good growth from the original plantings and subsequent replantings, particularly in the Walker Tract.

The average tree and shrub cover for the forested areas was 5.0% in March 2011 and 6.7% in September 2011. Although the woody plant cover increased since the March event, most of the increase was a result of the increases observed in the South Cell. The average woody plant cover increased in the South Cell from 5.6% in March to 9.1% in September 2011. The Walker Tract cover decreased slightly from 4.0% to 3.0%. The decrease in the Walker Tract is a result of significant mortality of a number of tree species.

The dominant understory species in the forested wetland areas are maidencane, arrowhead, and smartweed in the South Cell and alligator flag and spikerush in the Walker Tract. The tree/shrub layer of the South Cell is comprised of popash (*Fraxinus caroliniana*) and buttonbush (*Cephalanthus occidentalis*). The tree/shrub layer in the Walker Tract is

Table 7. Vegetation Transect Data Summary for Celery Fields Mitigation Site from March 2011 Monitoring Event.

| | | Total Cover | Total Desirable Cover | Total Undesirable Cover | Total Desirable Herbaceous Cover | Total Tree and Shrub Cover | Total Desirable Zone D Cover |
|------------------------|-------|-------------|-----------------------|-------------------------|----------------------------------|----------------------------|------------------------------|
| South Cell Transects | SC-1 | 11.8 | 11.8 | 0.0 | 9.8 | 2.0 | N/A |
| | SC-2 | 16.9 | 16.9 | 0.0 | 16.9 | N/A | 1.0 |
| | SC-3 | 12.9 | 12.8 | 0.1 | 12.8 | N/A | N/A |
| | SC-4 | 11.7 | 11.7 | 0.0 | 10.2 | 1.5 | N/A |
| | SC-5 | 11.4 | 11.4 | 0.0 | 11.4 | N/A | 9.1 |
| | SC-6 | 37.1 | 37.1 | 0.1 | 32.8 | 4.3 | N/A |
| | SC-7 | 5.5 | 5.5 | 0.0 | 5.5 | N/A | N/A |
| | SC-8 | 76.5 | 67.5 | 9.0 | 67.5 | N/A | N/A |
| | SC-9 | 17.2 | 17.1 | 0.1 | 16.0 | 1.1 | N/A |
| | SC-10 | 22.0 | 22.0 | 0.0 | 22.0 | N/A | N/A |
| Walker Tract Transects | W-1 | 4.6 | 4.0 | 0.6 | 4.0 | N/A | N/A |
| | W-2 | 4.4 | 4.3 | 0.1 | 0.3 | 4.0 | N/A |
| | W-3 | 7.8 | 7.8 | 0.0 | 7.8 | N/A | N/A |
| | W-4 | 5.9 | 5.7 | 0.2 | 5.7 | N/A | N/A |

Table 8. Vegetation Transect Data Summary for Celery Fields Mitigation Site from September 2011 Monitoring Event.

| | | Total Cover | Total Desirable Cover | Total Undesirable Cover | Total Desirable Herbaceous Cover | Total Tree and Shrub Cover | Total Desirable Zone D Cover |
|------------------------|-------|-------------|-----------------------|-------------------------|----------------------------------|----------------------------|------------------------------|
| South Cell Transects | SC-1 | 55.6 | 55.3 | 0.3 | 50.3 | 5.0 | N/A |
| | SC-2 | 51.1 | 50.1 | 1.0 | 50.1 | N/A | 0.0 |
| | SC-3 | 75.8 | 75.7 | 0.1 | 42.6 | N/A | N/A |
| | SC-4 | 44.6 | 44.6 | 0.0 | 40.1 | 4.5 | N/A |
| | SC-5 | 39.2 | 39.2 | 0.0 | 39.2 | N/A | 30.2 |
| | SC-6 | 45.9 | 45.7 | 0.2 | 41.7 | 4.0 | N/A |
| | SC-7 | 66.0 | 66.0 | 0.0 | 66.0 | N/A | N/A |
| | SC-8 | 64.4 | 59.2 | 5.2 | 59.2 | N/A | N/A |
| | SC-9 | 81.7 | 81.5 | 0.2 | 80.5 | 1.0 | N/A |
| | SC-10 | 81.1 | 81.1 | 0.0 | 81.1 | N/A | N/A |
| Walker Tract Transects | W-1 | 60.9 | 60.8 | 0.1 | 60.8 | N/A | N/A |
| | W-2 | 24.0 | 24.0 | 0.0 | 21.0 | 3.0 | N/A |
| | W-3 | 49.5 | 49.0 | 0.5 | 49.0 | N/A | N/A |
| | W-4 | 46.2 | 42.1 | 4.1 | 42.1 | N/A | N/A |

comprised of red maple (*Acer rubrum*), swamp tupelo (*Nyssa sylvatica*), popash, cypress, and buttonbush. Many of these plants have died and replanting is expected in January 2012 as part of the warranty.

Upland Buffers

The upland buffer final grades were established by September 2010. From October 14, 2010 to November 9, 2010, a mixture of 69,108 quart-sized equivalent and 2-inch herbaceous plugs were planted in the buffer and at the toe-of-slope of Zone F of the South Cell and Walker Tract. Some erosion took place in specific buffer areas around the Tree Preserve Islands and in the southeast corner of the Walker Tract. Rainfall since planting of buffers appeared to be adequate to keep the soils conditions appropriate for the herbaceous and woody species planted in the buffer. The County will be repairing this erosion before April 2012 and replanting with native upland species to control further erosion.

A qualitative evaluation of the upland buffers was conducted in March and September 2011. In March 2011, sand cordgrass survival was estimated at 90% and the site was replanted to meet the 100% warranty guarantee. Sand cordgrass provided excellent cover for this tree/shrub zone at both sites. Total understory cover for most areas ranged from between 50 to 75% in September 2011. Several areas with lower coverage of sand cordgrass had high mortality related to nontarget herbicide damage. As a result, these areas had been replanted with 1,180 sand cordgrass and several other species (504 Fakahatchee grass, 1,180 muhly grass, and 576 bushybeard bluestem) to provide some herbaceous plant diversity. Exotic/nuisance species have been a problem in the herbaceous understory of this upland buffer. Littlebell (*Ipomoea triloba*) was observed growing over trees and shrubs in March 2011. In September 2011, this exotic vine has been significantly reduced in total coverage by routine maintenance. Exotic/nuisance species in the upland buffer provided approximately 30% coverage in March 2011 and has been reduced to 5% coverage in September 2011.

The tree/shrub zones had good survival of slash pine (*Pinus elliotti*), sugarberry (*Celtis laevigata*), live oak (*Quercus virginiana*), sweetbay (*Magnolia virginiana*), and Walter's viburnum (*Viburnum obovatum*). Saltbush (*Baccharis* sp.) has also successfully recruited into the buffer area. Total cover of the tree/shrub zone was estimated at 5% for the entire site in September 2011. A replanting of the buffer in September 2011 (after the vegetation monitoring) included 45 American elm (*Ulmus americana*), 100 Walter's viburnum (*Forestiera segregata*), and 100 Florida privet.

Tree Preserve Islands

The Tree Preserve Islands consisted of three areas comprising approximately 2.08 acres. A qualitative evaluation of these preservation areas in the South Cell was conducted in March and September of 2011. The plant species composition has changed little from March to September 2011. In 2010, a number of exotic/nuisance tree and shrub species were treated and retreated when necessary. Upland buffers surround each of the preservation areas. The soils on the Tree Preservation Islands remained fairly stable with little erosion despite a number of larger trees that had fallen when some of these root systems were undermined to grade the surrounding slopes. The soils in these preservation areas maintain good moisture and organic content to sustain desirable upland species.

The overstory was dominated by sugarberry with a subdominance of cabbage palm (**Table 9**). One laurel oak (*Quercus laurifolia*) and several planted American elms were also a minor part of the overstory. Only minor gaps in the canopy were observed. The total tree canopy cover was estimated at 90%. Carrotwood (*Cupaniopsis anacardioides*) and Brazilian pepper (*Schinus terebinthifolius*) were removed before the March 2011 monitoring event.

The midstory was dominated by sugarberry with a total cover of approximately 50%. Most of the shrub-sized sugarberry plants were located along the edges of the Tree Preserve Islands where light can penetrate to the ground level. Many of these shrubs were growing from lateral roots of larger trees.

The understory was shaded in many areas and no understory was evident. The total cover of the understory was approximately 26%. Planted species (sand cordgrass, muhly grass, bushybeard bluestem) were among the most dominant species in the groundcover. Dayflower (*Commelina diffusa*) was a common native recruit of this zone. Exotic species included elephant ear (*Xylastoma sagittata*), poinsettia (*Euphorbia pulcherrima*), guinea grass (*Panicum maximum*), and carrot wood. The preservation areas also have low coverage of highly-invasive exotic vines [littlebell and skunkvine (*Paederia foetida*)] and the native Virginian creeper (*Parthenocissus quinquefolia*). Exotic and nuisance species have mostly been eradicated from these areas with re-treatments being necessary on a monthly basis.

Maintenance Activities

As discussed in the previous section, all of the Celery Fields Mitigation Site areas had been treated for nuisance/exotic plant species before, during, and after construction and planting activities. A total of 28 upland, wetland, and aquatic plant species are included in the maintenance control program for the mitigation site (**Table 10**). The upland buffers and the toe-of-slope areas have been the most challenging to maintain nuisance/exotic plant species. A total of 8 CAT 1 invasive exotic species, 4 CAT 2 invasive exotic species, and 16 aggressive nuisance species have been observed in the Celery Fields Mitigation Site.

Vegetation monitoring conducted during March and September of 2011 revealed that exotic/invasive plants in the herbaceous and forested wetland areas occupied an average of less than 5% total cover. A qualitative estimate of exotic/nuisance species cover in the upland buffer of 20% was estimated in March 2011; whereas an estimate of 10% was determined for the buffer in September 2011. A qualitative estimate of exotic/nuisance species cover in the Tree Preserve Islands was less than 10% for both the March and September of 2011 monitoring events. Nuisance/exotic plant species will continue to be controlled as part of the long-term maintenance control program. The program includes maintenance and routine mowing of adjacent areas and internal berms and recreational facilities not used for mitigation. In addition, wetland areas within the Walker Tract that are not included for mitigation for this ACOE permit will continue to be maintained with the same intensity as permitted areas to minimize seed source production and to maximize wildlife benefit.

Table 9. Qualitative Vegetation Data for the Different Vegetative Strata for the Tree Preserve Islands.

| Overstory | | | | |
|------------------|---------------------------|-----------|---------------|---------------|
| Common name | Scientific Name | Type | Native/Exotic | Percent cover |
| sugarberry | <i>Celtis laevigatus</i> | Preserved | Native | 80 |
| cabbage palm | <i>Sabal palmetto</i> | Preserved | Native | 5 |
| laurel oak | <i>Quercus laurifolia</i> | Preserved | Native | 1 |
| American elm | <i>Ulmus americana</i> | Planted | Native | <1 |

| Midstory | | | | |
|-----------------|--------------------------|-----------|---------------|---------------|
| Common name | Scientific Name | Type | Native/Exotic | Percent cover |
| sugarberry | <i>Celtis laevigatus</i> | Preserved | Native | 50 |

| Understory | | | | |
|----------------------|---------------------------------|---------------------|---------------|---------------|
| Common name | Scientific Name | Type | Native/Exotic | Percent cover |
| sand cordgrass | <i>Spartina bakeri</i> | Planted | Native | 5 |
| elephant ear | <i>Xylastoma sagittata</i> | Naturally Recruited | Exotic | 4 |
| bushy beard bluestem | <i>Andropogon glomeratus</i> | Planted | Native | 3 |
| muhly grass | <i>Muhlenbergia capilaris</i> | Planted | Native | 3 |
| dayflower | <i>Commelina diffusa</i> | Naturally Recruited | Native | 3 |
| poinsettia | <i>Euphorbia pulcherrima</i> | Naturally Recruited | Exotic | 3 |
| guinea grass | <i>Panicum maximum</i> | Naturally Recruited | Exotic | 2 |
| common sowthistle | <i>Sonchus oleracea</i> | Naturally Recruited | Native | 2 |
| sea purslane | <i>Sesuvium portulacastrum</i> | Naturally Recruited | Native | <1 |
| carrotwood | <i>Cupaniosis anacardioides</i> | Naturally Recruited | Exotic | <1 |

| Vines | | | | |
|------------------|------------------------------------|---------------------|---------------|---------------|
| Common name | Scientific Name | Type | Native/Exotic | Percent cover |
| skunkvine | <i>Paederia foetida</i> | Naturally Recruited | Exotic | 3 |
| littlebell | <i>Ipomoea triloba</i> | Naturally Recruited | Exotic | 3 |
| Virginia creeper | <i>Parthenocissus quinquefolia</i> | Naturally Recruited | Native | 1 |

Table 10. Exotic/Nuisance Species Included in Maintenance Program for Celery Fields Mitigation Site.

| Common Name | Scientific Name | Exotic/Nuisance Category | Observation Notes |
|-------------------------|--|-------------------------------|---|
| Carrotwood | <i>Cupaniopsis anacardioides</i> | CAT 1 Exotic Invasive Species | tree preserve islands |
| Water hyacinth | <i>Eichhomia crassipes</i> | CAT 1 Exotic Invasive Species | open water and spikerush zones |
| West Indian Marshgrass | <i>Hymenachne amplexicaulis</i> | CAT 1 Exotic Invasive Species | wet buffer areas and shallower zones |
| Primrose willow | <i>Ludwigia peruviana</i> | CAT 1 Exotic Invasive Species | toe-of-slope |
| Natalgrass | <i>Melinis repens</i> | CAT 1 Exotic Invasive Species | upland buffer |
| Skunkvine | <i>Paederia foetida</i> | CAT 1 Exotic Invasive Species | tree preserve islands |
| Torpedograss | <i>Panicum repens</i> | CAT 1 Exotic Invasive Species | shallow wetland zones and upland buffer |
| Brazilian pepper | <i>Schinus terebinthifolia</i> | CAT 1 Exotic Invasive Species | tree preserve islands |
| Alligatorweed | <i>Alternanthera philoxeroides</i> | CAT 2 Exotic Invasive Species | deeper zones and open areas |
| Crowfootgrass | <i>Dactyloctenium aegyptium</i> | CAT 2 Exotic Invasive Species | upland buffer and toe-of-slope |
| Guineagrass | <i>Panicum maximum</i> | CAT 2 Exotic Invasive Species | tree preserve islands |
| Castorbean | <i>Ricinus communis</i> | CAT 2 Exotic Invasive Species | tree preserve islands |
| Bermudagrass | <i>Cynodon dactylon</i> | Aggressive Nuisance Species | upland buffer and toe-of-slope |
| Barnyardgrass | <i>Echinochloa</i> spp. | Aggressive Nuisance Species | toe-of-slope |
| Littlebell | <i>Ipomoea triloba</i> | Aggressive Nuisance Species | upland buffer and toe-of-slope |
| Sprangletop | <i>Leptochloa fusca</i> var. <i>fascicularis</i> | Aggressive Nuisance Species | toe of slope and shallow wetlands |
| Mexican primrose willow | <i>Ludwigia octovalvis</i> | Aggressive Nuisance Species | toe-of-slope |
| Floating primrose | <i>Ludwigia peploides</i> | Aggressive Nuisance Species | toe-of-slope and deeper wetland zones |
| Cheeseweed | <i>Malva parviflora</i> | Aggressive Nuisance Species | upland buffer |
| Chocolateweed | <i>Melochia corchorifolia</i> | Aggressive Nuisance Species | upland buffer |
| Hempvine | <i>Mikania</i> spp. | Aggressive Nuisance Species | upland buffer |
| Parrotfeather | <i>Myriophyllum aquaticum</i> | Aggressive Nuisance Species | deeper zones and open areas |
| Cuban bulrush | <i>Oxycaryum cubense</i> | Aggressive Nuisance Species | deeper zones and open areas |
| Carolina willow | <i>Salix caroliniana</i> | Aggressive Nuisance Species | sawgrass and popash zones |
| Rattlebox | <i>Sesbania</i> spp. | Aggressive Nuisance Species | toe-of-slope |
| Cattail | <i>Typha</i> spp. | Aggressive Nuisance Species | spikerush and deeper zones |
| Cowpea | <i>Vigna luteola</i> | Aggressive Nuisance Species | upland buffer |
| Stargrass | <i>Cynodon nlemfuensis</i> | Aggressive Nuisance Species | upland buffer |

Wildlife Use

Bird counts by VHB biologists documented between 448 and 1,746 individual birds from 87 different species during monthly 5-hour surveys (**Table 11**). As expected, the number of birds utilizing the mitigation site and rest of the CFRSF approximately tripled during the winter months when migratory birds utilize the site. Common moorhen (*Gallinula chloropus*), sandhill cranes (*Grus canadensis*), black-necked stilts (*Himantopus mexicanus*), and limpkin (*Aramus guarauna*) have been documented nesting in the wetlands and shallow areas throughout the Celery Fields Mitigation Site. Both subadult and adult bald eagles (*Haliaeetus leucocephalus*) and several osprey (*Pandion haliaetus*) and kingfishers (*Ceryle alcyon*) feed daily on the plentiful fish present in the sparsely vegetated deep wetland zones and the open water areas. A resident barn owl (*Tyto alba*) was observed utilizing the mature trees in the Tree Preserve Islands on two separate occasions. In addition, wood storks (*Mycteria americana*) and roseate spoonbills (*Platalea ajaja*) have been observed feeding in the shallow areas where prey items appeared to be concentrated in shallow isolated pools. Black-bellied whistling ducks (*Dendrocygna autumnalis*) and mottled ducks (*Anas fulvigula*) have been present in high numbers year round, and recently large numbers of blue-winged teal are using the South Cell and Walker Tract areas. Between December 2010 and March 2011, groups of white pelicans (*Pelecanus erythrorhynchos*) were sporadically observed herding fish in the open water areas and several thousand migratory American coots (*Fulica americana*) were observed eating the tips of wetland vegetation. The mitigation site also provides excellent habitat for a number of wading birds, including the great egret (*Ardea alba*), great blue heron (*Ardea herodias*), little blue heron (*Egretta caerulea*), tricolored heron (*Egretta tricolor*), snowy egret (*Egretta thula*), white ibis (*Eudocimus albus*) and glossy ibis (*Plegadis falcinellus*). Dozens of snakebirds (*Anhinga anhinga*) can be observed diving and feeding on small fish on any given day.

In addition to the diverse bird life, the site also provides home to numerous mammal, reptile, and amphibian wildlife. Mammals included the bobcat (*Lynx rufus*), red fox (*Vulpes vulpes*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), river otter (*Lutra canadensis*), opossum (*Didelphis virginiana*) and several unidentified rodents. Numerous turtle species have been observed including the Florida box turtle (*Terrapene carolina bauri*), Florida softshell turtle (*Apalone ferox*), and Florida cooter (*Pseudemys floridana*). A pair of Florida snapping turtles (*Chelydra serpentina Osceola*) were also documented breeding in the Walker Tract. The snake list currently includes the Florida water snake (*Nerodia fasciata pictiventris*) and black racer (*Coluber constrictor priapus*), and amphibians include cricket frogs (*Acris gryllus*), green tree frogs (*Hyla cinerea*), Southern leopard frogs (*Lithobates sphenoccephalus*). As the site develops and matures, we expect the wildlife diversity to increase. The goal for the management of the site will be to maintain numerous ecotones and micro-habitats for a number of species to coexist and thrive. Particular attention will be given to creating nesting opportunities for a number of species.

Table 11. Bird Counts for Monthly Bird Surveys for Celery Fields Regional Stormwater Facility.

| | Monthly Bird Surveys | | | | | | | | Total |
|------------------------------|----------------------|--------|--------|--------|--------|--------|--------|--------|-------|
| | Apr-11 | May-11 | Jun-11 | Jul-11 | Aug-11 | Sep-11 | Oct-11 | Nov-11 | |
| American Bittern | | | 2 | | | | | | 2 |
| American Coot | 13 | 1 | 1 | 5 | 12 | 9 | 24 | 59 | 124 |
| American Crow | | 2 | | | | 5 | | 13 | 20 |
| American Kestrel | | | | | | | 1 | 2 | 3 |
| Anhinga | 8 | 15 | 41 | 47 | 25 | 37 | 45 | 57 | 275 |
| Bald Eagle | 2 | | 2 | | 1 | 2 | 3 | 3 | 13 |
| Barn Swallow | 6 | | | 6 | | 30 | 30 | | 72 |
| Belted Kingfisher | | | | 1 | 2 | 6 | 5 | 8 | 22 |
| Black Vulture | 1 | 2 | | 6 | 1 | 3 | 11 | 3 | 27 |
| Black-bellied Whistling Duck | 4 | 22 | 35 | 51 | 83 | 55 | 35 | 12 | 262 |
| Black-crowned Night Heron | | | | 2 | | 1 | | | 3 |
| Black-necked Stilt | 45 | 59 | 49 | 16 | | 4 | | | 173 |
| Blue-winged Teal | 5 | | | | 5 | 29 | 33 | 157 | 229 |
| Boat-tailed Grackle | 39 | 69 | 141 | 34 | 61 | 161 | 322 | 93 | 920 |
| Brown-headed Cowbird | | | | 2 | | | | | 2 |
| Bufflehead | | | | | | | | 2 | 2 |
| Cattle Egret | 8 | 69 | 27 | 53 | 63 | 84 | 34 | 33 | 371 |
| Chimney Swift | | | | 2 | | | | | 2 |
| Chipping Sparrow | | | | | | | | 1 | 1 |
| Common Grackle | | | | | | | | 17 | 17 |
| Common Ground Dove | 5 | 1 | | | | 1 | | | 7 |
| Common Moorhen | 14 | 41 | 84 | 54 | 46 | 38 | 30 | 19 | 326 |
| Common Snipe | | | | | | | 2 | | 2 |
| Common Tern | | | | | | 1 | | | 1 |
| Common Yellowthroat | | | | | | | | 5 | 5 |
| Double-crested Cormorant | 4 | 2 | | 2 | 1 | 2 | 6 | 9 | 26 |
| Eastern Meadowlark | 2 | 1 | 1 | | | | | | 4 |
| European Starling | | 2 | | 1 | | 12 | | 2 | 17 |
| Fish Crow | 2 | 2 | 1 | 1 | | 5 | | | 11 |
| Forster's Tern | | | | | | | 5 | | 5 |
| Glossy Ibis | 14 | 97 | 97 | 10 | 7 | 1 | 54 | 44 | 324 |
| Great Blue Heron | 10 | 6 | 10 | 17 | 12 | 8 | 17 | 21 | 101 |
| Great Egret | 36 | 28 | 36 | 44 | 40 | 45 | 37 | 43 | 309 |
| Greater Yellowlegs | 1 | | | | | | | | 1 |
| Green Heron | | | 3 | 6 | | | 1 | | 10 |
| Green-winged Teal | | | | | | | 1 | 8 | 9 |
| Herring Gull | | 2 | 1 | | | | | | 3 |
| Indigo Bunting | | | | | | | 1 | | 1 |
| Killdeer | 2 | 4 | | 2 | | 2 | | 1 | 11 |
| Laughing Gull | 6 | 2 | 3 | 20 | 1 | 2 | 16 | 104 | 154 |
| Least Bittern | | | 2 | 9 | | | | | 11 |
| Least Sandpiper | | | | | | | 14 | | 14 |
| Least Tern | 1 | 1 | | | | | | | 2 |
| Lesser Yellowlegs | 1 | | | | | | | | 1 |
| Limpkin | 5 | 26 | 15 | 32 | 32 | 46 | 55 | 61 | 272 |

Table 11 (continued). Bird Counts for Monthly Bird Surveys for Celery Fields Regional Stormwater Facility.

| | Monthly Bird Surveys | | | | | | | | Total |
|----------------------------|----------------------|------------|------------|------------|------------|------------|-------------|-------------|-------|
| | Apr-11 | May-11 | Jun-11 | Jul-11 | Aug-11 | Sep-11 | Oct-11 | Nov-11 | |
| Little Blue Heron | 2 | 8 | 11 | 17 | 8 | 9 | 11 | 12 | 78 |
| Loggerhead Shrike | | | | | | | 3 | 1 | 4 |
| Long-billed Dowitcher | 73 | | | | | | | | 73 |
| Mallard Hybrid | 1 | | | 5 | | 6 | | 2 | 14 |
| Marsh Wren | | | | | | | 16 | | 16 |
| Mocking bird | | 1 | | | | | | | 1 |
| Monk Parakeet | | | | 2 | | | | | 2 |
| Mottled Duck | 15 | 33 | 24 | 60 | 77 | 63 | 26 | 66 | 364 |
| Mourning Dove | 7 | 22 | 28 | 61 | 46 | 9 | 16 | 1 | 190 |
| Muscovy | | | | | | | | 4 | 4 |
| Northern Cardinal | | | | 1 | | | | | 1 |
| Northern Harrier | | | | | | 1 | | 5 | 6 |
| Northern Mockingbird | | | | 1 | 1 | | 2 | 1 | 5 |
| Northern Shoveler | | | | | | | | 5 | 5 |
| Osprey | | 2 | 3 | 6 | 8 | 7 | 7 | 7 | 40 |
| Palm Warbler | | | | | | | 46 | 227 | 273 |
| Pied-billed Grebe | | | 4 | 2 | | | 6 | 7 | 19 |
| Purple Gallinule | | | | 3 | 1 | 1 | | | 5 |
| Purple Martin | | 3 | | | | | | | 3 |
| Red-shouldered Hawk | 1 | 2 | 1 | | 3 | 5 | 4 | | 16 |
| Red-tailed Hawk | | | | | | | | 4 | 4 |
| Red-winged Blackbird | 29 | 72 | 108 | 122 | 58 | 154 | 259 | 149 | 951 |
| Roseate Spoonbill | | 11 | 8 | 2 | | | 1 | 4 | 26 |
| Royal Tern | | | | 1 | 1 | | | 1 | 3 |
| Sanderling | 8 | | | | | | | | 8 |
| Sandhill Crane | 3 | 6 | 6 | | | 1 | | 8 | 24 |
| Sandwich Tern | 18 | | | | 6 | | | | 24 |
| Savannah Sparrow | | | | | | | 73 | 205 | 278 |
| Semipalmated Sandpiper | 20 | | | | | | | | 20 |
| Short-billed Dowitcher | | | | | | | | 10 | 10 |
| Snowy Egret | 18 | 24 | 41 | 38 | 13 | 8 | 6 | 5 | 153 |
| Spotted Sandpiper | | | | 1 | | | | | 1 |
| Tree Swallow | 1 | | | | | | 1 | 150 | 152 |
| Tricolored Heron | 2 | 10 | 20 | 27 | 19 | 7 | 8 | 20 | 113 |
| Turkey Vulture | 6 | | | 1 | | 2 | 2 | 1 | 12 |
| White Ibis | 5 | 24 | 29 | 40 | 26 | 26 | 86 | 68 | 304 |
| Willet | 4 | | 1 | | | | | | 5 |
| Wood Duck | | | | 10 | | 1 | | | 11 |
| Wood Stork | 1 | | 6 | 6 | | 2 | 4 | 5 | 24 |
| Yellow-crowned Night Heron | | | 3 | | | | | | 3 |
| Yellow-rumped Warbler | | | | | | | 4 | | 4 |
| Yellow-throated Warbler | | | | | | | | 1 | 1 |
| Grand Total | 448 | 672 | 844 | 829 | 659 | 891 | 1363 | 1746 | |

Success Criteria Compliance

ACOE Permit SAJ-1994-4745 (IP-MEP) for Phase III of the CFRSF project requires the success criteria be met for a total of three consecutive years. A summary of the more quantifiable success criteria are provided for the South Cell and Walker Tract (**Table 12**) and described below. Other qualitative success criteria are also discussed in the subsequent section.

- 1) A minimum of 70% total cover of desirable wetland plant species is required in the herbaceous wetland zones in South Cell and Walker Tract Mitigation Areas.**

In September 2011, the total cover of desirable plant species was 59.8% cover for the South Cell and 44.0% for the Walker Tract. Both of these sites have progressed significantly from the average desirable cover of 12.5% documented for the March 2011 monitoring event. This success criterion is expected to be met next year.

- 2) A minimum of 50% total cover of the water lily-dominated D-Zones of the South Cell Mitigation Area is required.**

In September 2011, the total cover of the D-Zone in South Cell was 23.2% and has improved from the 7.7% total desirable cover reported for March 2011. Although, we expect to meet this criterion is expected next year for some of the D-Zone areas, a replant may be necessary in areas where mortality is high. A lowering of the water level in Spring 2012 may assist with water lily and other plant survival in this deep water zone.

- 3) A minimum of 30% canopy coverage for the forested wetland zones is required.**

The canopy cover in the forested wetland area in the South Cell has increased from 5.6% in March 2011 to 9.1% in September 2011. We expect that the forested wetland areas (Zone E) should meet this success criterion in the next couple of years. The canopy cover in the Walker Tract forested wetland area (Zone H) decreased from 4.0% in March 2011 to 3.0% in September 2011. The trees and shrubs in the Walker Tract have struggled despite a replanting. A warranty replanting should take place in January or February 2012.

- 4) A minimum of 30% herbaceous vegetative cover for the forested wetland zones is required.**

The herbaceous cover in the forested wetland areas in the South Cell and Walker Tract were 27.6% and 21.0% in September 2011. The cover increased more than two-fold from the March 2011 estimates. The increases in the Walker Tract were likely a result of a substantial replanting of groundcover species like alligator flag. This success criterion is expected to be met next year.

5) Nuisance/exotic plants species must not exceed 10% total cover.

The total cover of undesirable plant species for the herbaceous and forested wetlands for both the March and September of 2011 monitoring events was less than 1%. The total undesirable cover of the Tree Preserve Islands and Upland Buffer was less than 10% during the September 2011 monitoring. The low coverage of invasive exotic plants is due to the routine maintenance program implemented since the restoration work began.

6) Herbaceous wetland zones must be able to be classified as *Palustrine Emergent Wetland* according to the U.S. Fish and Wildlife Service's (USFWS) Classification of Wetlands and Deepwater Habitats of the United States (CWDHUS).

Currently, the site meets this general definition of herbaceous wetlands. In future reports, a qualitative description of the soils, hydrology and vegetation will aid in this final determination.

7) Forested wetland zones must be able to be classified as *Palustrine Scrub-Shrub Wetland* according to the USFWS's CWDHUS.

As with the herbaceous wetlands, this generic definition has been met for the forested mitigation areas. In future reports, a qualitative description of the soils, hydrology, and different vegetative strata will aid in this final determination.

8) The Celery Fields Mitigation Site will be deemed successful when the permittee implements a nuisance/exotic species maintenance program.

Sarasota County has already complied with the intent of this condition by instituting a maintenance-control program for nuisance/exotic plant species for the South Cell and Walker Tract Mitigation Areas.

The South Cell and Walker Tract areas of the Celery Fields Mitigation Site are already exceeding expectations with regards to providing wildlife habitat to a diversity of mammal, bird, reptile, amphibian, and fish species. Clearly, this area has been improved for over 100 species of birds as documented with monthly bird surveys. Several wildlife habitat enhancements have been implemented to improve habitat for upland and wetland wildlife. Seven wood duck boxes will be installed by early Spring 2012, and numerous snags and an osprey platform have already been used by predatory birds, wading birds, and other species. In addition, an understory of sand cordgrass and upland grass, shrub, and tree species provide good cover for a number of upland-dependent wildlife species.

Table 12. Plant Cover Data Summaries for the March and September 2011 monitoring events.

| | Success Criteria |
|---|------------------|
| Average Total Cover | N/A |
| Average Total Desirable Cover | > 70 |
| Average Total Undesirable Cover | < 10 |
| Average Tree/Shrub Cover in Forested wetlands | > 30 |
| Average Herbaceous Cover in forested wetlands | > 30 |
| Average D-Zone Cover | > 50 |

| Mar-11 | | |
|--------|------------|--------|
| Total | South Cell | Walker |
| 12.6 | 15.4 | 5.7 |
| 12.5 | 15.3 | 5.4 |
| 0.1 | 0.1 | 0.2 |
| 5.0 | 5.6 | 4.0 |
| 6.8 | 10.9 | 0.3 |
| 7.7 | 7.7 | N/A |

| Sep-11 | | |
|--------|------------|--------|
| Total | South Cell | Walker |
| 56.1 | 60.5 | 45.2 |
| 55.3 | 59.8 | 44.0 |
| 0.8 | 0.7 | 1.2 |
| 6.7 | 9.1 | 3.0 |
| 25.1 | 27.6 | 21.0 |
| 23.2 | 23.2 | N/A |

Vegetation Monitoring Data for Spring 2011

Appendix A-1. Vegetation Monitoring Data for Celery Fields Mitigation Site in March 2011.

South Cell Quantitative Monitoring Data Sheet

Date _____

3/29/2011

Vegetation Monitoring Team

RVF/BU

Transect

SC-1

[illegible]

Appendix A-1. Vegetation Monitoring Data for Celery Fields Mitigation Site in March 2011.

| South Cell Quantitative Monitoring Data Sheet | | | | | | | | | Date | 3/29/2011 | |
|---|------------------|----------|-----|-----|-----|----------|-----|-----|------|-----------|------|
| Vegetation Monitoring Team | | RVF/BU | | | | Transect | | | SC-2 | | |
| Species | Quadrat (-Zone) | Quadrats | | | | | | | | | |
| | | 1-B | 2-B | 3-B | 4-C | 5-C | 6-C | 7-D | 8-D | 9-D | 10-D |
| | Water Depth (ft) | 1.2 | 1.8 | 2.0 | 2.5 | 2.8 | 2.6 | 3.0 | 3.0 | 3.0 | 3.1 |
| Sagittaria lancifolia | | 10 | 5 | 1 | | | | | | | |
| Lemna minor | | 3 | 1 | 1 | 1 | 1 | | | 1 | | |
| Azolla caroliniana | | 3 | 1 | | 1 | 1 | | | | | |
| Thalia geniculata | | | | | | 40 | | | | | |
| Scirpus validus | | | | | | 40 | 50 | | | | |
| Nymphaea odorata | | | | | | | | 3 | 1 | 2 | 3 |
| Total Cover | | 16 | 7 | 2 | 2 | 82 | 50 | 3 | 2 | 2 | 3 |
| Total Desirable Cover | | 16 | 7 | 2 | 2 | 82 | 50 | 3 | 2 | 2 | 3 |
| Total Undesirable Cover | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | |
| Total Desirable Herbaceous Cover | | 16 | 7 | 2 | 2 | 82 | 50 | 3 | 2 | 2 | 3 |
| Total Tree and Shrub Cover | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Desirable Zone D Cover | | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 2 | 3 |

Appendix A-1. Vegetation Monitoring Data for Celery Fields Mitigation Site in March 2011.

[illegible]

Appendix A-1. Vegetation Monitoring Data for Celery Fields Mitigation Site in March 2011.

[illegible]

Appendix A-1. Vegetation Monitoring Data for Celery Fields Mitigation Site in March 2011.

| South Cell Quantitative Monitoring Data Sheet | | | | | | | | Date | 3/29/2011 | | | |
|---|------------------|----------|------|-----|----------|-----|------------|------------|-----------|-----|------|--|
| Vegetation Monitoring Team | | RVF/BU | | | Transect | | | | | | SC-5 | |
| Quadrat (-Zone) | | Quadrats | | | | | | | | | | |
| Species | Water Depth (ft) | 1-B | 2-D | 3-D | 4-D | 5-D | 6-D | 7-D | 8-D | 9-D | 10-D | |
| <i>Spartina bakeri</i> | 7 | | | | | | Open water | Open water | | | | |
| <i>Leptochloa fascicularis</i> | 10 | | | | | | | | | | | |
| <i>Eclipta prostrata</i> | 5 | | | | | | | | | | | |
| <i>Lemna minor</i> | 0.5 | 0.5 | | | 0.5 | | | | | | | |
| <i>Azolla caroliniana</i> | 0.5 | 0.5 | 0.5 | | 0.5 | | | | | | | |
| <i>Eleocharis interstincta</i> | | 50 | | | | | | | | | | |
| <i>Nymphaea odorata</i> | | | 10 | 2 | 15 | | | | 3 | 3 | 5 | |
| Total Cover | 23 | 51 | 10.5 | 2 | 16 | 0 | 0 | 3 | 3 | 5 | | |
| Total Desirable Cover | 23 | 51 | 10.5 | 2 | 16 | 0 | 0 | 3 | 3 | 5 | | |
| Total Undesirable Cover | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | | | | | | | | | | | | |
| Total Desirable Herbaceous Cover | 23 | 51 | 10.5 | 2 | 16 | 0 | 0 | 3 | 3 | 5 | | |
| Total Tree and Shrub Cover | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Total Desirable Zone D Cover | 0 | 51 | 10.5 | 2 | 16 | 0 | 0 | 3 | 3 | 5 | | |

Appendix A-1. Vegetation Monitoring Data for Celery Fields Mitigation Site in March 2011.

[illegible]

Appendix A-1. Vegetation Monitoring Data for Celery Fields Mitigation Site in March 2011.

[illegible]

Appendix A-1. Vegetation Monitoring Data for Celery Fields Mitigation Site in March 2011.

[illegible]

Appendix A-1. Vegetation Monitoring Data for Celery Fields Mitigation Site in March 2011.

[illegible]

Appendix A-1. Vegetation Monitoring Data for Celery Fields Mitigation Site in March 2011.

| South Cell Quantitative Monitoring Data Sheet | | | | | | | | | Date | 3/29/2011 | |
|---|------------------|----------|-----|-----|----------|-----|------------|-------|------|-----------|------------|
| Vegetation Monitoring Team | | RVF/BU | | | Transect | | | SC-10 | | | |
| Quadrat (-Zone) | | Quadrats | | | | | | | | | |
| | | 1-B | 2-B | 3-B | 4-B | 5-B | 6-B | 7-B | 8-B | 9-B | 10-B |
| Species | Water Depth (ft) | 1.1 | 1.8 | 1.8 | 1.9 | 2.0 | 1.8 | 2.0 | 1.8 | 1.9 | 1.9 |
| <i>Scirpus validus</i> | 5 | | | | | | Open water | | | | Open water |
| <i>Eclipta prostrata</i> | 3 | | | | | | | | | | |
| <i>Echinochloa crusgalli</i> | 1 | | | | | | | | | | |
| <i>Leptochloa fascicularis</i> | 5 | | | | | | | | 5 | 2 | |
| <i>Pontederia cordata</i> | 1 | 8 | 2 | 7 | | | | | | | |
| <i>Lemna minor</i> | 1 | | | | | | | | | | |
| <i>Eleocharis interstincta</i> | | | | | | 30 | | | 80 | | |
| Total Cover | | 16 | 8 | 2 | 7 | 30 | 0 | 80 | 5 | 72 | 0 |
| Total Desirable Cover | | 16 | 8 | 2 | 7 | 30 | 0 | 80 | 5 | 72 | 0 |
| Total Undesirable Cover | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | |
| Total Desirable Herbaceous Cover | | 16 | 8 | 2 | 7 | 30 | 0 | 80 | 5 | 72 | 0 |
| Total Tree and Shrub Cover | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Desirable Zone D Cover | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Appendix A-1. Vegetation Monitoring Data for Celery Fields Mitigation Site in March 2011.

[illegible]

Appendix A-1. Vegetation Monitoring Data for Celery Fields Mitigation Site in March 2011.

[illegible]

Appendix A-1. Vegetation Monitoring Data for Celery Fields Mitigation Site in March 2011.

[illegible]

Appendix A-1. Vegetation Monitoring Data for Celery Fields Mitigation Site in March 2011.

[illegible]

Attachment B-2. Vegetation Monitoring Data for Celery Fields Mitigation Site in September 2011.

| South Cell Quantitative Monitoring Data Sheet | | | | | | | | Date | 9/26/2011 | | |
|---|------------------|----------|-----|-----|----------|-----|-----|------------|------------|------------|------------|
| Vegetation Monitoring Team | | RVF/SM | | | Transect | | | SC-2 | | | |
| Quadrat (-Zone) | | Quadrats | | | | | | | | | |
| Species | Water Depth (ft) | 1-B | 2-B | 3-B | 4-C | 5-C | 6-C | 7-D | 8-D | 9-D | 10-D |
| <i>Sagittaria lancifolia</i> | 70 | 70 | 60 | | | | | Open Water | Open Water | Open Water | Open Water |
| <i>Thalia geniculata</i> | | | | 95 | | | | | | | |
| <i>Scirpus californicus</i> | | | | 5 | 100 | 100 | | | | | |
| <i>Nymphaea odorata</i> | | | | | | | | | | | |
| <i>Ludwigia peploides</i> | 10 | | | | | | | | | | |
| <i>Leptochloa fascicularis</i> | 1 | | | | | | | | | | |
| Total Cover | 81 | 70 | 60 | 100 | 100 | 100 | 0 | 0 | 0 | 0 | 0 |
| Total Desirable Cover | 71 | 70 | 60 | 100 | 100 | 100 | 0 | 0 | 0 | 0 | 0 |
| Total Undesirable Cover | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | |
| Total Desirable Herbaceous Cover | 71 | 70 | 60 | 100 | 100 | 100 | 0 | 0 | 0 | 0 | 0 |
| Total Tree and Shrub Cover | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Desirable Zone D Cover | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Attachment B-2. Vegetation Monitoring Data for Celery Fields Mitigation Site in September 2011.

[illegible]

Attachment B-2. Vegetation Monitoring Data for Celery Fields Mitigation Site in September 2011.

[illegible]

Attachment B-2. Vegetation Monitoring Data for Celery Fields Mitigation Site in September 2011.

| South Cell Quantitative Monitoring Data Sheet | | | | | | | | | Date | 9/26/2011 | | | |
|---|------------------|----------|-----|------------|-----|----------|------------|-----|------|-----------|------|------|--|
| Vegetation Monitoring Team | | RVF/SM | | | | Transect | | | | | | SC-5 | |
| Quadrat (-Zone) | | Quadrats | | | | | | | | | | | |
| Species | Water Depth (ft) | 1-B | 2-D | 3-D | 4-D | 5-D | 6-D | 7-D | 8-D | 9-D | 10-D | | |
| <i>Spartina bakeri</i> | 40 | | | Open Water | | | Open Water | | | | | | |
| <i>Eleocharis interstincta</i> | 50 | 100 | | | | | | | | | | | |
| <i>Nymphaea odorata</i> | | | 30 | | 50 | 80 | | 2 | 30 | 10 | | | |
| Total Cover | 90 | 100 | 30 | 0 | 50 | 80 | 0 | 2 | 30 | 10 | | | |
| Total Desirable Cover | 90 | 100 | 30 | 0 | 50 | 80 | 0 | 2 | 30 | 10 | | | |
| Total Undesirable Cover | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| | | | | | | | | | | | | | |
| Total Desirable Herbaceous Cover | 90 | 100 | 30 | 0 | 50 | 80 | 0 | 2 | 30 | 10 | | | |
| Total Tree and Shrub Cover | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Total Desirable Zone D Cover | 0 | 100 | 30 | 0 | 50 | 80 | 0 | 2 | 30 | 10 | | | |

Attachment B-2. Vegetation Monitoring Data for Celery Fields Mitigation Site in September 2011.

[illegible]

Attachment B-2. Vegetation Monitoring Data for Celery Fields Mitigation Site in September 2011.

[illegible]

Attachment B-2. Vegetation Monitoring Data for Celery Fields Mitigation Site in September 2011.

[illegible]

Attachment B-2. Vegetation Monitoring Data for Celery Fields Mitigation Site in September 2011.

[illegible]

Attachment B-2. Vegetation Monitoring Data for Celery Fields Mitigation Site in September 2011.

[illegible]

Attachment B-2. Vegetation Monitoring Data for Celery Fields Mitigation Site in September 2011.

[illegible]

Attachment B-2. Vegetation Monitoring Data for Celery Fields Mitigation Site in September 2011.

[illegible]

Attachment B-2. Vegetation Monitoring Data for Celery Fields Mitigation Site in September 2011.

[illegible]

Attachment B-2. Vegetation Monitoring Data for Celery Fields Mitigation Site in September 2011.

[illegible]

First Semi-Annual Mitigation Monitoring Photos

**Celery Fields Mitigation Site First Semi-Annual Monitoring Report,
Photos Taken March 2011**



**Celery Fields Mitigation Site First Semi-Annual Monitoring Report,
Photos Taken March 2011**



**Celery Fields Mitigation Site First Semi-Annual Monitoring Report,
Photos Taken March 2011**



Celery Fields Mitigation Site First Semi-Annual Monitoring Report, Photos Taken March 2011



South Cell Mitigation Area Photo-point SC-7



South Cell Mitigation Area Photo-point SC-8

Celery Fields Mitigation Site First Semi-Annual Monitoring Report, Photos Taken March 2011



**Celery Fields Mitigation Site First Semi-Annual Monitoring Report,
Photos Taken March 2011**



**Celery Fields Mitigation Site First Semi-Annual Monitoring Report,
Photos Taken March 2011**



First Annual Mitigation Monitoring Photos

**Celery Fields Mitigation Site First Annual Monitoring Report,
Photos Taken September 2011**



**Celery Fields Mitigation Site First Annual Monitoring Report,
Photos Taken September 2011**



**Celery Fields Mitigation Site First Annual Monitoring Report,
Photos Taken September 2011**



**Celery Fields Mitigation Site First Annual Monitoring Report,
Photos Taken September 2011**



**Celery Fields Mitigation Site Time-Zero Assessment Report,
Photos Taken March 2011**



**Celery Fields Mitigation Site Time-Zero Assessment Report,
Photos Taken March 2011**



**Celery Fields Mitigation Site First Annual Monitoring Report,
Photos Taken September 2011**



| VHB Bird Data Collection Sheet for Celery Fields Stormwater Facility. | | | | | | | |
|---|-------------------------------|---------------------|--------------|-------------------|--------------|--|---|
| Date: | | April 28, 2011 | | Number Categories | | 1, 2-5, 6-10, 11-50, 51-100, 100-500, >500 | |
| Stations and Structures | | | | | | | |
| North Cell: WQ1, WQ2, S-6, S-7; Central Cell: WQ3, WQ4, S-10, S-13; South Cell: WQ5, S-14; Walker Tract: WQ6, WQ7, S-15, S-16 | | | | | | | |
| Bird Collection Personnel: | | | Start Time | 9:00:00 AM | End Time | 1:30:00 PM | |
| | | Numbers observed in | | | | Nearest WQ Station/ Structure | Habitat, Activities and Other Important Notes |
| VHB. Audubon, Other (Circle One) | | North Cell | Central Cell | South Cell | Walker Tract | | |
| GREBES | Pied-billed Grebe | | | | | | |
| PELICANS | American White Pelican | | | | | | |
| | Brown Pelican | | | | | | |
| CORMORANTS | Double-crested Cormorant | 2 | | 2 | | | |
| ANHINGAS | Anhinga | 7 | | 1 | | | |
| HERONS | Great Blue Heron | 1 | 6 | 3 | | | |
| | Great Egret | 6 | 4 | 24 | 2 | | |
| | Snowy Egret | 2 | 3 | 5 | 8 | | |
| | Cattle Egret | 2 | 1 | 1 | 4 | | |
| | Tricolored Heron | 1 | | | 1 | | |
| | Little Blue Heron | 1 | | 1 | | | |
| | Green Heron | | | | | | |
| | Black-crowned Night Heron* | | | | | | |
| | Yellow-crowned Night Heron | | | | | | |
| BITTERNS | American Bittern | | | | | | |
| | Least Bittern* | | | | | | |
| STORKS / IBIS | Wood Stork | 1 | | | | | |
| | Glossy Ibis | 1 | 3 | 4 | 6 | | |
| | White Ibis | 2 | 3 | | | | |
| | Roseate Spoonbill | | | | | | |
| GEESE | Canada Goose | | | | | | |
| | Snow Goose | | | | | | |
| DUCKS | Black-bellied Whistling Duck* | | 4 | | | | |
| | Fulvous Whistling Duck | | | | | | |
| | Mallard Hybrid* | | | | 1 | | |
| | Mottled Duck* | 7 | 4 | 4 | | | |
| | American Wigeon | | | | | | |
| | Northern Pintail | | | | | | |
| | Green-winged Teal | | | | | | |
| | Blue-winged Teal | 2 | 1 | | 2 | | |
| | Northern Shoveler | | | | | | |
| | Wood Duck* | | | | | | |
| | Redhead | | | | | | |
| | Ring-necked Duck | | | | | | |
| | Canvasback | | | | | | |
| | Gadwall | | | | | | |
| | Lesser Scaup | | | | | | |
| | Long-tailed Duck | | | | | | |
| | Bufflehead | | | | | | |
| | Ruddy Duck | | | | | | |
| | Hooded Merganser | | | | | | |
| | VULTURES | Turkey Vulture | | 2 | 4 | | |
| Black Vulture | | | 1 | | | | |
| RAPTORS | Northern Harrier | | | | | | |
| | Swallow-tailed Kite | | | | | | |
| | Sharp-shinned Hawk | | | | | | |
| | Cooper's Hawk | | | | | | |
| | Red-shouldered Hawk | | 1 | | | | |
| | Broad-winged Hawk | | | | | | |
| | Red-tailed Hawk | | | | | | |
| | Bald Eagle* | | 2 | | | | |
| | Osprey | | | | | | |
| | Crested Caracara | | | | | | |
| | Merlin | | | | | | |
| | American Kestrel | | | | | | |
| | Peregrine Falcon | | | | | | |
| | QUAIL | Northern Bobwhite* | | | | | |

| | | Numbers observed in | | | | Nearest WQ Station/ Structure | Habitat, Activities and Other Important Notes |
|---|--------------------------------|---------------------|--------------|------------|--------------|----------------------------------|---|
| VHB. Audubon, Other (Circle One) | | North Cell | Central Cell | South Cell | Walker Tract | | |
| KINGFISHER | Belted Kingfisher | | | | | | |
| WOODPECKERS | Red-bellied Woodpecker | | | | | | |
| | Pileated Woodpecker | | | | | | |
| | Red-headed Woodpecker | | | | | | |
| | Downy Woodpecker | | | | | | |
| | Northern Flicker | | | | | | |
| | Yellow-bellied Sapsucker | | | | | | |
| FLYCATCHERS | Eastern Wood-pewee | | | | | | |
| | Eastern Phoebe | | | | | | |
| | Western Kingbird | | | | | | |
| | Eastern Kingbird | | | | | | |
| | Great Crested Flycatcher | | | | | | |
| | Gray Kingbird | | | | | | |
| | Scissor-tailed Flycatcher | | | | | | |
| SHRIKE | Loggerhead Shrike | | | | | | |
| SWALLOWS | Tree Swallow | | | 1 | | | |
| | Northern Rough-winged Swallow* | | | | | | |
| | Barn Swallow* | | 6 | | | | |
| | Bank Swallow | | | | | | |
| | Cliff Swallow | | | | | | |
| | Purple Martin | | | | | | |
| TITMOUSE | Tufted Titmouse | | | | | | |
| JAYS/ CROWS | Blue Jay | | | | | | |
| | American Crow | | | | | | |
| | Fish Crow | 2 | | | | | |
| WRENS | Carolina Wren | | | | | | |
| | Marsh Wren | | | | | | |
| | Sedge Wren | | | | | | |
| | House Wren | | | | | | |
| | Ruby-crowned Kinglet | | | | | | |
| ROBIN/ BLUEBIRDS | American Robin | | | | | | |
| | Eastern Bluebird | | | | | | |
| THRUSHES | Hermit Thrush | | | | | | |
| MIMIDS | Northern Mockingbird | | | | | | |
| | Gray Catbird | | | | | | |
| | Brown Thrasher | | | | | | |
| STARLING | European Starling | | | | | | |
| PIPITS | American Pipit | | | | | | |
| WAXWINGS | Cedar Waxwing | | | | | | |
| GNATCATCHER | Blue-gray Gnatcatcher | | | | | | |
| VIREOS | White-eyed Vireo | | | | | | |
| WARBLERS | Red-eyed Vireo | | | | | | |
| | Blue-headed Vireo | | | | | | |
| | Yellow-throated Vireo | | | | | | |
| | Northern Parula | | | | | | |
| | Cerulean Warbler | | | | | | |
| | Tennessee Warbler | | | | | | |
| | Yellow Warbler | | | | | | |
| | Chestnut-sided Warbler | | | | | | |
| | Magnolia Warbler | | | | | | |
| | Blackburnian Warbler | | | | | | |
| | Yellow-rumped Warbler | | | | | | |
| | Yellow-throated Warbler | | | | | | |
| | Prairie Warbler | | | | | | |
| | Palm Warbler | | | | | | |
| | Pine Warbler | | | | | | |
| | Black and White Warbler | | | | | | |
| | American Redstart | | | | | | |
| | Ovenbird | | | | | | |
| | Northern Waterthrush | | | | | | |
| | Common Yellowthroat | | | | | | |
| | Hooded Warbler | | | | | | |

| VHB Bird Data Collection Sheet for Celery Fields Stormwater Facility. | | | | | | | |
|---|-------------------------------|---------------------|--------------|-------------------|--------------|--|---|
| Date: | | May 31, 2011 | | Number Categories | | 1, 2-5, 6-10, 11-50, 51-100, 100-500, >500 | |
| Stations and Structures | | | | | | | |
| North Cell: WQ1, WQ2, S-6, S-7; Central Cell: WQ3, WQ4, S-10, S-13; South Cell: WQ5, S-14; Walker Tract: WQ6, WQ7, S-15, S-16 | | | | | | | |
| Bird Collection Personnel: | | | Start Time | 7:00:00 AM | End Time | | |
| RVF | | Numbers observed in | | | | Nearest WQ Station/ Structure | Habitat, Activities and Other Important Notes |
| VHB. Audubon, Other (Circle One) | | North Cell | Central Cell | South Cell | Walker Tract | | |
| GREBES | Pied-billed Grebe | | | | | | 3 black necked stilt chicks in southern cell near Raymond Rd. near treated Leptochloa. 3 black-necked stilt babies near pavillion adjacent to Palmer Blvd. 1 sand hill crane nest with larger chick in it in Walker Trat on island near landscape buffer. 4 immature white ibis and 1 immature little blue heron. No water flowing over weir in Walker Tact.; 1.24 staff gauge in Walker Tract. |
| PELICANS | American White Pelican | | | | | | |
| | Brown Pelican | | | | | | |
| CORMORANTS | Double-crested Cormorant | 1 | | 1 | | | |
| ANHINGAS | Anhinga | 4 | 6 | 4 | 1 | | |
| HERONS | Great Blue Heron | 2 | 1 | 3 | | | |
| | Great Egret | | 6 | 21 | 1 | | |
| | Snowy Egret | | 4 | 16 | 4 | | |
| | Cattle Egret | 27 | 40 | 2 | | | |
| | Tricolored Heron | | 6 | 4 | | | |
| | Little Blue Heron | 1 | | 5 | 2 | | |
| | Green Heron | | | | | | |
| | Black-crowned Night Heron* | | | | | | |
| | Yellow-crowned Night Heron | | | | | | |
| BITTERNS | American Bittern | | | | | | |
| | Least Bittern* | | | | | | |
| STORKS / IBIS | Wood Stork | | | | | | |
| | Glossy Ibis | | 3 | 64 | 30 | | |
| | White Ibis | 3 | 5 | 7 | 9 | | |
| | Roseate Spoonbill | | | 11 | | | |
| GEESE | Canada Goose | | | | | | |
| | Snow Goose | | | | | | |
| DUCKS | Black-bellied Whistling Duck* | | 8 | 12 | 2 | | |
| | Fulvous Whistling Duck | | | | | | |
| | Mallard Hybrid* | | | | | | |
| | Mottled Duck* | 2 | 2 | 26 | 3 | | |
| | American Wigeon | | | | | | |
| | Northern Pintail | | | | | | |
| | Green-winged Teal | | | | | | |
| | Blue-winged Teal | | | | | | |
| | Northern Shoveler | | | | | | |
| | Wood Duck* | | | | | | |
| | Redhead | | | | | | |
| | Ring-necked Duck | | | | | | |
| | Canvasback | | | | | | |
| | Gadwall | | | | | | |
| | Lesser Scaup | | | | | | |
| | Long-tailed Duck | | | | | | |
| | Bufflehead | | | | | | |
| | Ruddy Duck | | | | | | |
| | Hooded Merganser | | | | | | |
| VULTURES | Turkey Vulture | | | | | | |
| | Black Vulture | 2 | | | | | |
| RAPTORS | Northern Harrier | | | | | | |
| | Swallow-tailed Kite | | | | | | |
| | Sharp-shinned Hawk | | | | | | |
| | Cooper's Hawk | | | | | | |
| | Red-shouldered Hawk | | 1 | 1 | | | |
| | Broad-winged Hawk | | | | | | |
| | Red-tailed Hawk | | | | | | |
| | Bald Eagle* | | | | | | |
| | Osprey | | 2 | | | | |
| | Crested Caracara | | | | | | |
| | Merlin | | | | | | |
| | American Kestrel | | | | | | |
| | Peregrine Falcon | | | | | | |
| | QUAIL | Northern Bobwhite* | | | | | |

| RVF | | Numbers observed in | | | | Nearest WQ Station/ Structure | Habitat, Activities and Other Important Notes |
|----------------------------------|--------------------------------|---------------------|--------------|------------|--------------|----------------------------------|---|
| VHB. Audubon, Other (Circle One) | | North Cell | Central Cell | South Cell | Walker Tract | | |
| HUMMINGBIRD | Ruby-throated Hummingbird | | | | | | |
| KINGFISHER | Belted Kingfisher | | | | | | |
| WOODPECKERS | Red-bellied Woodpecker | | | | | | |
| | Pileated Woodpecker | | | | | | |
| | Red-headed Woodpecker | | | | | | |
| | Downy Woodpecker | | | | | | |
| | Northern Flicker | | | | | | |
| | Yellow-bellied Sapsucker | | | | | | |
| FLYCATCHERS | Eastern Wood-pewee | | | | | | |
| | Eastern Phoebe | | | | | | |
| | Western Kingbird | | | | | | |
| | Eastern Kingbird | | | | | | |
| | Great Crested Flycatcher | | | | | | |
| | Gray Kingbird | | | | | | |
| | Scissor-tailed Flycatcher | | | | | | |
| SHRIKE | Loggerhead Shrike | | | | | | |
| SWALLOWS | Tree Swallow | | | | | | |
| | Northern Rough-winged Swallow* | | | | | | |
| | Barn Swallow* | | | | | | |
| | Bank Swallow | | | | | | |
| | Cliff Swallow | | | | | | |
| | Purple Martin | | 3 | | | | |
| TITMOUSE | Tufted Titmouse | | | | | | |
| JAYS/ CROWS | Blue Jay | | | | | | |
| | American Crow | | | | 2 | | |
| | Fish Crow | | | 1 | 1 | | |
| WRENS | Carolina Wren | | | | | | |
| | Marsh Wren | | | | | | |
| | Sedge Wren | | | | | | |
| | House Wren | | | | | | |
| | Ruby-crowned Kinglet | | | | | | |
| ROBIN/ BLUEBIRDS | American Robin | | | | | | |
| | Eastern Bluebird | | | | | | |
| THRUSHES | Hermit Thrush | | | | | | |
| MIMIDS | Northern Mockingbird | | | | | | |
| | Gray Catbird | | | | | | |
| | Brown Thrasher | | | | | | |
| STARLING | European Starling | 2 | | | | | |
| PIPITS | American Pipit | | | | | | |
| WAXWINGS | Cedar Waxwing | | | | | | |
| GNATCATCHER | Blue-gray Gnatcatcher | | | | | | |
| VIREOS | White-eyed Vireo | | | | | | |
| WARBLERS | Red-eyed Vireo | | | | | | |
| | Blue-headed Vireo | | | | | | |
| | Yellow-throated Vireo | | | | | | |
| | Northern Parula | | | | | | |
| | Cerulean Warbler | | | | | | |
| | Tennessee Warbler | | | | | | |
| | Yellow Warbler | | | | | | |
| | Chestnut-sided Warbler | | | | | | |
| | Magnolia Warbler | | | | | | |
| | Blackburnian Warbler | | | | | | |
| | Yellow-rumped Warbler | | | | | | |
| | Yellow-throated Warbler | | | | | | |
| | Prairie Warbler | | | | | | |
| | Palm Warbler | | | | | | |
| | Pine Warbler | | | | | | |
| | Black and White Warbler | | | | | | |
| | American Redstart | | | | | | |
| | Ovenbird | | | | | | |
| | Northern Waterthrush | | | | | | |
| | Common Yellowthroat | | | | | | |

| VHB Bird Data Collection Sheet for Celery Fields Stormwater Facility. | | | | | | |
|---|-------------------------------|--------------------|---|--|------------|---|
| Date: | June 27, 2011 | | Number Categories | 1, 2-5, 6-10, 11-50, 51-100, 100-500, >500 | | |
| Stations and Structures | | | <u>North Cell:</u> WQ1, WQ2, S-6, S-7; <u>Central Cell:</u> WQ3, WQ4, S-10, S-13; <u>South Cell:</u> WQ5, S-14; <u>Walker Tract:</u> WQ6, WQ7, S-15, S-16 | | | |
| Bird Collection Personnel: | | | | Start Time | 8:00:00 AM | End Time |
| RVF | | | Numbers observed in | | | |
| VHB. Audubon, Other (Circle One) | | | North Cell | Central Cell | South Cell | Walker Tract |
| GREBES | Pied-billed Grebe | | | | 1 | 3 |
| PELICANS | American White Pelican | | | | | |
| | Brown Pelican | | | | | |
| CORMORANTS | Double-crested Cormorant | | | | | |
| ANHINGAS | Anhinga | 9 | 6 | 18 | 8 | ****6 snowy egrets in willow on south side of north cell-roosting ****One mature and one subadult bald eagle (just under 5 years-head was starting to get white but body was still moddled like immature) resting together on osprey platform in Central Cell 4 moorhen chicks about 1/2 size of adult in north cell--3 smaller chicks in south cell ****approximately 15 baby stilts in South Cell and Walker Tract are still in the areas they were hatched-now most of them are 3/4 size of the adult-starting to take coloration and black and white pattern of the adults--no more stilts in relatively dry marsh Central Cell areas where chicks were seen previously |
| HERONS | Great Blue Heron | 2 | 4 | 4 | | |
| | Great Egret | 9 | 8 | 18 | 1 | |
| | Snowy Egret | 9 | | 25 | 7 | |
| | Cattle Egret | 5 | 10 | 7 | 5 | |
| | Tricolored Heron | 7 | 2 | 11 | | |
| | Little Blue Heron | 1 | 1 | 7 | 2 | |
| | Green Heron | 2 | | 1 | | |
| | Black-crowned Night Heron* | | | | | |
| BITTERNS | Yellow-crowned Night Heron | 3 | | | | |
| | American Bittern | | | 1 | 1 | |
| STORKS / IBIS | Least Bittern* | | | 2 | | |
| | Wood Stork | | | 3 | 3 | |
| | Glossy Ibis | 7 | 13 | 70 | 7 | |
| | White Ibis | 4 | 7 | 15 | 3 | |
| GEESE | Roseate Spoonbill | | | 5 | 3 | |
| | Canada Goose | | | | | |
| DUCKS | Snow Goose | | | | | |
| | Black-bellied Whistling Duck* | 5 | 15 | 8 | 7 | |
| | Fulvous Whistling Duck | | | | | |
| | Mallard Hybrid* | | | | | |
| | Mottled Duck* | 3 | | 14 | 7 | |
| | American Wigeon | | | | | |
| | Northern Pintail | | | | | |
| | Green-winged Teal | | | | | |
| | Blue-winged Teal | | | | | |
| | Northern Shoveler | | | | | |
| | Wood Duck* | | | | | |
| | Redhead | | | | | |
| | Ring-necked Duck | | | | | |
| | Canvasback | | | | | |
| | Gadwall | | | | | |
| | Lesser Scaup | | | | | |
| | Long-tailed Duck | | | | | |
| | Bufflehead | | | | | |
| | Ruddy Duck | | | | | |
| | Hooded Merganser | | | | | |
| VULTURES | Turkey Vulture | | | | | |
| | Black Vulture | | | | | |
| RAPTORS | Northern Harrier | | | | | |
| | Swallow-tailed Kite | | | | | |
| | Sharp-shinned Hawk | | | | | |
| | Cooper's Hawk | | | | | |
| | Red-shouldered Hawk | | | 1 | | |
| | Broad-winged Hawk | | | | | |
| | Red-tailed Hawk | | | | | |
| | Bald Eagle* | | 2 | | | |
| | Osprey | | 1 | 2 | | |
| | Crested Caracara | | | | | |
| | Merlin | | | | | |
| | American Kestrel | | | | | |
| | Peregrine Falcon | | | | | |
| | QUAIL | Northern Bobwhite* | | | | |

| RVF | | Numbers observed in | | | | Habitat, Activities and Other Important Notes |
|---|--------------------------------|---------------------|--------------|------------|--------------|---|
| VHB. Audubon, Other (Circle One) | | North Cell | Central Cell | South Cell | Walker Tract | |
| HUMMINGBIRD | Belted Kingfisher | | | | | |
| KINGFISHER | Red-bellied Woodpecker | | | | | |
| WOODPECKERS | Pileated Woodpecker | | | | | |
| | Red-headed Woodpecker | | | | | |
| | Downy Woodpecker | | | | | |
| | Northern Flicker | | | | | |
| | Yellow-bellied Sapsucker | | | | | |
| | Eastern Wood-pewee | | | | | |
| FLYCATCHERS | Eastern Phoebe | | | | | |
| | Western Kingbird | | | | | |
| | Eastern Kingbird | | | | | |
| | Great Crested Flycatcher | | | | | |
| | Gray Kingbird | | | | | |
| | Scissor-tailed Flycatcher | | | | | |
| | Loggerhead Shrike | | | | | |
| SHRIKE | Tree Swallow | | | | | |
| SWALLOWS | Northern Rough-winged Swallow* | | | | | |
| | Barn Swallow* | | | | | |
| | Bank Swallow | | | | | |
| | Cliff Swallow | | | | | |
| | Purple Martin | | | | | |
| | Tufted Titmouse | | | | | |
| TITMOUSE | Blue Jay | | | | | |
| JAYS/ CROWS | American Crow | | | | | |
| | Fish Crow | 1 | | | | |
| | Carolina Wren | | | | | |
| WRENS | Marsh Wren | | | | | |
| | Sedge Wren | | | | | |
| | House Wren | | | | | |
| | Ruby-crowned Kinglet | | | | | |
| | American Robin | | | | | |
| ROBIN/ BLUEBIRDS | Eastern Bluebird | | | | | |
| | Hermit Thrush | | | | | |
| THRUSHES | Northern Mockingbird | | | | | |
| MIMIDS | Gray Catbird | | | | | |
| | Brown Thrasher | | | | | |
| | European Starling | | | | | |
| STARLING | American Pipit | | | | | |
| PIPITS | Cedar Waxwing | | | | | |
| WAXWINGS | Blue-gray Gnatcatcher | | | | | |
| GNATCATCHER | White-eyed Vireo | | | | | |
| VIREOS | Red-eyed Vireo | | | | | |
| WARBLERS | Blue-headed Vireo | | | | | |
| | Yellow-throated Vireo | | | | | |
| | Northern Parula | | | | | |
| | Cerulean Warbler | | | | | |
| | Tennessee Warbler | | | | | |
| | Yellow Warbler | | | | | |
| | Chestnut-sided Warbler | | | | | |
| | Magnolia Warbler | | | | | |
| | Blackburnian Warbler | | | | | |
| | Yellow-rumped Warbler | | | | | |
| | Yellow-throated Warbler | | | | | |
| | Prairie Warbler | | | | | |
| | Palm Warbler | | | | | |
| | Pine Warbler | | | | | |
| | Black and White Warbler | | | | | |
| | American Redstart | | | | | |
| | Ovenbird | | | | | |
| | Northern Waterthrush | | | | | |
| | Common Yellowthroat | | | | | |
| | Hooded Warbler | | | | | |

| VHB Bird Data Collection Sheet for Celery Fields Stormwater Facility. | | | | | | |
|---|-------------------------------|---------------------|--|------------|--------------|---|
| Date: | July 25, 2011 | Number Categories | 1, 2-5, 6-10, 11-50, 51-100, 100-500, >500 | | | |
| Stations and Structures | | | | | | |
| North Cell: WQ1, WQ2, S-6, S-7; Central Cell : WQ3, WQ4, S-10, S-13; South Cell : WQ5, S-14; Walker Tract: WQ6, WQ7, S-15, S-16 | | | | | | |
| Bird Collection Personnnel: | | | Start Time | 8:00:00 AM | End Time | 12:30:00 PM |
| RVF & Jeanne Dubis (Sarasota Audubon) | | Numbers observed in | | | | Habitat, Activities and Other Important Notes |
| VHB. Audubon, Other (Circle One) | | North Cell | Central Cell | South Cell | Walker Tract | |
| GREBES | Pied-billed Grebe | | | 2 | | observed 6 black bellied whistling ducks in SC, 2 wood duck chicks in SC, 3 limpkin chicks with aggressive parents in North Cell; 3 juvenile bn stilts, probably more at size of parents, and approximately 10 moorhen chicks |
| PELICANS | American White Pelican | | | | | |
| | Brown Pelican | | | | | |
| CORMORANTS | Double-crested Cormorant | | | 2 | | |
| ANHINGAS | Anhinga | 10 | 7 | 28 | 2 | |
| HERONS | Great Blue Heron | 3 | 2 | 8 | 4 | |
| | Great Egret | 6 | 10 | 23 | 5 | |
| | Snowy Egret | 7 | 12 | 12 | 7 | |
| | Cattle Egret | 20 | 28 | 5 | | |
| | Tricolored Heron | | 7 | 14 | 6 | |
| | Little Blue Heron | | 4 | 8 | 5 | |
| | Green Heron | 1 | 1 | 4 | | |
| | Black-crowned Night Heron* | 1 | | 1 | | |
| Yellow-crowned Night Heron | | | | | | |
| BITTERNS | American Bittern | | | | | |
| | Least Bittern* | | | 9 | | |
| STORKS / IBIS | Wood Stork | | 1 | 3 | 2 | |
| | Glossy Ibis | | | 2 | 8 | |
| | White Ibis | 3 | 16 | 12 | 9 | |
| | Roseate Spoonbill | 1 | | | 1 | |
| GEESE | Canada Goose | | | | | |
| | Snow Goose | | | | | |
| DUCKS | Black-bellied Whistling Duck* | 1 | 20 | 26 | 4 | |
| | Fulvous Whistling Duck | | | | | |
| | Mallard Hybrid* | | | 5 | | |
| | Mottled Duck* | | 8 | 31 | 21 | |
| | American Wigeon | | | | | |
| | Northern Pintail | | | | | |
| | Green-winged Teal | | | | | |
| | Blue-winged Teal | | | | | |
| | Northern Shoveler | | | | | |
| | Wood Duck* | | | 10 | | |
| | Redhead | | | | | |
| | Ring-necked Duck | | | | | |
| | Canvasback | | | | | |
| | Gadwall | | | | | |
| | Lesser Scaup | | | | | |
| | Long-tailed Duck | | | | | |
| | Bufflehead | | | | | |
| | Ruddy Duck | | | | | |
| Hooded Merganser | | | | | | |
| VULTURES | Turkey Vulture | 1 | | | | |
| | Black Vulture | 2 | 4 | | | |
| RAPTORS | Northern Harrier | | | | | |
| | Swallow-tailed Kite | | | | | |
| | Sharp-shinned Hawk | | | | | |
| | Cooper's Hawk | | | | | |
| | Red-shouldered Hawk | | | | | |
| | Broad-winged Hawk | | | | | |
| | Red-tailed Hawk | | | | | |
| | Bald Eagle* | | | | | |
| | Osprey | | | 4 | 2 | |
| | Crested Caracara | | | | | |
| | Merlin | | | | | |
| | American Kestrel | | | | | |
| | Peregrine Falcon | | | | | |
| QUAIL | Northern Bobwhite* | | | | | |

| RVF & Jeanne Dubis (Sarasota Audubon) | | Numbers observed in | | | | Habitat, Activities and Other Important Notes |
|---|--------------------------------|---------------------|--------------|------------|--------------|---|
| VHB. Audubon, Other (Circle One) | | North Cell | Central Cell | South Cell | Walker Tract | |
| HUMMINGBIRD | Belted Kingfisher | | | 1 | | |
| KINGFISHER | Red-bellied Woodpecker | | | | | |
| WOODPECKERS | Pileated Woodpecker | | | | | |
| | Red-headed Woodpecker | | | | | |
| | Downy Woodpecker | | | | | |
| | Northern Flicker | | | | | |
| | Yellow-bellied Sapsucker | | | | | |
| | Eastern Wood-pewee | | | | | |
| FLYCATCHERS | Eastern Phoebe | | | | | |
| | Western Kingbird | | | | | |
| | Eastern Kingbird | | | | | |
| | Great Crested Flycatcher | | | | | |
| | Gray Kingbird | | | | | |
| | Scissor-tailed Flycatcher | | | | | |
| | Loggerhead Shrike | | | | | |
| SHRIKE | Tree Swallow | | | | | |
| SWALLOWS | Northern Rough-winged Swallow* | | | | | |
| | Barn Swallow* | | 1 | 5 | | |
| | Bank Swallow | | | | | |
| | Cliff Swallow | | | | | |
| | Purple Martin | | | | | |
| | Tufted Titmouse | | | | | |
| TITMOUSE | Blue Jay | | | | | |
| JAYS/ CROWS | American Crow | | | | | |
| | Fish Crow | | | | 1 | |
| | Carolina Wren | | | | | |
| WRENS | Marsh Wren | | | | | |
| | Sedge Wren | | | | | |
| | House Wren | | | | | |
| | Ruby-crowned Kinglet | | | | | |
| | American Robin | | | | | |
| ROBIN/ BLUEBIRDS | Eastern Bluebird | | | | | |
| | Hermit Thrush | | | | | |
| THRUSHES | Northern Mockingbird | 1 | | | | |
| MIMIDS | Gray Catbird | | | | | |
| | Brown Thrasher | | | | | |
| | European Starling | | | 1 | | |
| STARLING | American Pipit | | | | | |
| PIPITS | Cedar Waxwing | | | | | |
| WAXWINGS | Blue-gray Gnatcatcher | | | | | |
| GNATCATCHER | White-eyed Vireo | | | | | |
| VIREOS | Red-eyed Vireo | | | | | |
| WARBLERS | Blue-headed Vireo | | | | | |
| | Yellow-throated Vireo | | | | | |
| | Northern Parula | | | | | |
| | Cerulean Warbler | | | | | |
| | Tennessee Warbler | | | | | |
| | Yellow Warbler | | | | | |
| | Chestnut-sided Warbler | | | | | |
| | Magnolia Warbler | | | | | |
| | Blackburnian Warbler | | | | | |
| | Yellow-rumped Warbler | | | | | |
| | Yellow-throated Warbler | | | | | |
| | Prairie Warbler | | | | | |
| | Palm Warbler | | | | | |
| | Pine Warbler | | | | | |
| | Black and White Warbler | | | | | |
| | American Redstart | | | | | |
| | Ovenbird | | | | | |
| | Northern Waterthrush | | | | | |
| | Common Yellowthroat | | | | | |
| | Hooded Warbler | | | | | |

| VHB Bird Data Collection Sheet for Celery Fields Stormwater Facility. | | | | | | |
|---|-------------------------------|---------------------|--------------------------------|------------|--------------|---|
| Date: | August 26, 2011 | | Bird Collection Personnel: RVF | | | |
| Stations and Structures | | | | | | |
| North Cell: WQ1, WQ2, S-6, S-7; Central Cell: WQ3, WQ4, S-10, S-13; South Cell: WQ5, S-14; Walker Tract: WQ6, WQ7, S-15, S-16 | | | | | | |
| | | | Start Time | 9:00:00 AM | End Time | 1:30:00 PM |
| RVF & Jeanne Dubis (Sarasota Audubon) | | Numbers observed in | | | | Habitat, Activities and Other Important Notes |
| VHB. Audubon, Other (Circle One) | | North Cell | Central Cell | South Cell | Walker Tract | |
| GREBES | Pied-billed Grebe | | | | | |
| PELICANS | American White Pelican | | | | | |
| | Brown Pelican | | | | | |
| CORMORANTS | Double-crested Cormorant | | | 1 | | |
| ANHINGAS | Anhinga | 5 | 6 | 10 | 4 | |
| HERONS | Great Blue Heron | 3 | 3 | 3 | 3 | |
| | Great Egret | 3 | 8 | 20 | 9 | |
| | Snowy Egret | 3 | 3 | 4 | 3 | |
| | Cattle Egret | | 13 | 43 | 7 | |
| | Tricolored Heron | 5 | 2 | 8 | 4 | |
| | Little Blue Heron | 1 | 6 | | 1 | |
| | Green Heron | | | | | |
| | Black-crowned Night Heron* | | | | | |
| Yellow-crowned Night Heron | | | | | | |
| BITTERNS | American Bittern | | | | | |
| | Least Bittern* | | | | | |
| STORKS / IBIS | Wood Stork | | | | | |
| | Glossy Ibis | 3 | 1 | 2 | 1 | |
| | White Ibis | 3 | 15 | | 8 | |
| | Roseate Spoonbill | | | | | |
| GEESE | Canada Goose | | | | | |
| | Snow Goose | | | | | |
| DUCKS | Black-bellied Whistling Duck* | 5 | 14 | 51 | 13 | |
| | Fulvous Whistling Duck | | | | | |
| | Mallard Hybrid* | | | | | |
| | Mottled Duck* | | | 35 | 42 | |
| | American Wigeon | | | | | |
| | Northern Pintail | | | | | |
| | Green-winged Teal | | | | | |
| | Blue-winged Teal | 2 | | 3 | | |
| | Northern Shoveler | | | | | |
| | Wood Duck* | | | | | |
| | Redhead | | | | | |
| | Ring-necked Duck | | | | | |
| | Canvasback | | | | | |
| | Gadwall | | | | | |
| | Lesser Scaup | | | | | |
| | Long-tailed Duck | | | | | |
| | Bufflehead | | | | | |
| | Ruddy Duck | | | | | |
| | Hooded Merganser | | | | | |
| | VULTURES | Turkey Vulture | | | | |
| Black Vulture | | | 1 | | | |
| RAPTORS | Northern Harrier | | | | | |
| | Swallow-tailed Kite | | | | | |
| | Sharp-shinned Hawk | | | | | |
| | Cooper's Hawk | | | | | |
| | Red-shouldered Hawk | | 1 | 2 | | |
| | Broad-winged Hawk | | | | | |
| | Red-tailed Hawk | | | | | |
| | Bald Eagle* | | 1 | | | |
| | Osprey | 1 | 2 | 3 | 2 | |
| | Crested Caracara | | | | | |
| | Merlin | | | | | |
| | American Kestrel | | | | | |
| | Peregrine Falcon | | | | | |
| | QUAIL | Northern Bobwhite* | | | | |

| RVF & Jeanne Dubis (Sarasota Audubon) | | Numbers observed in | | | | Habitat, Activities and Other Important Notes |
|---|--------------------------------|---------------------|--------------|------------|--------------|---|
| VHB. Audubon, Other (Circle One) | | North Cell | Central Cell | South Cell | Walker Tract | |
| KINGFISHER | Belted Kingfisher | | | 2 | | |
| WOODPECKERS | Red-bellied Woodpecker | | | | | |
| | Pileated Woodpecker | | | | | |
| | Red-headed Woodpecker | | | | | |
| | Downy Woodpecker | | | | | |
| | Northern Flicker | | | | | |
| | Yellow-bellied Sapsucker | | | | | |
| | Eastern Wood-pewee | | | | | |
| | | | | | | |
| FLYCATCHERS | Eastern Phoebe | | | | | |
| | Western Kingbird | | | | | |
| | Eastern Kingbird | | | | | |
| | Great Crested Flycatcher | | | | | |
| | Gray Kingbird | | | | | |
| | Scissor-tailed Flycatcher | | | | | |
| SHRIKE | Loggerhead Shrike | | | | | |
| SWALLOWS | Tree Swallow | | | | | |
| | Northern Rough-winged Swallow* | | | | | |
| | Barn Swallow* | | | | | |
| | Bank Swallow | | | | | |
| | Cliff Swallow | | | | | |
| | Purple Martin | | | | | |
| TITMOUSE | Tufted Titmouse | | | | | |
| JAYS/ CROWS | Blue Jay | | | | | |
| | American Crow | | | | | |
| | Fish Crow | | | | | |
| WRENS | Carolina Wren | | | | | |
| | Marsh Wren | | | | | |
| | Sedge Wren | | | | | |
| | House Wren | | | | | |
| | Ruby-crowned Kinglet | | | | | |
| ROBIN/ BLUEBIRDS | American Robin | | | | | |
| | Eastern Bluebird | | | | | |
| THRUSHES | Hermit Thrush | | | | | |
| MIMIDS | Northern Mockingbird | | 1 | | | |
| | Gray Catbird | | | | | |
| | Brown Thrasher | | | | | |
| STARLING | European Starling | | | | | |
| PIPITS | American Pipit | | | | | |
| WAXWINGS | Cedar Waxwing | | | | | |
| GNATCATCHER | Blue-gray Gnatcatcher | | | | | |
| VIREOS | White-eyed Vireo | | | | | |
| | Red-eyed Vireo | | | | | |
| | Blue-headed Vireo | | | | | |
| | Yellow-throated Vireo | | | | | |
| WARBLERS | Northern Parula | | | | | |
| | Cerulean Warbler | | | | | |
| | Tennessee Warbler | | | | | |
| | Yellow Warbler | | | | | |
| | Chestnut-sided Warbler | | | | | |
| | Magnolia Warbler | | | | | |
| | Blackburnian Warbler | | | | | |
| | Yellow-rumped Warbler | | | | | |
| | Yellow-throated Warbler | | | | | |
| | Prairie Warbler | | | | | |
| | Palm Warbler | | | | | |
| | Pine Warbler | | | | | |
| | Black and White Warbler | | | | | |
| | American Redstart | | | | | |
| | Ovenbird | | | | | |
| | Northern Waterthrush | | | | | |
| | Common Yellowthroat | | | | | |
| | Hooded Warbler | | | | | |
| | | | | | | |

| VHB Bird Data Collection Sheet for Celery Fields Stormwater Facility. | | | | | | |
|---|-------------------------------|---------------------|---------------------------------|-------------|--------------|---|
| Date: | September 23, 2011 | | Bird Collection Personnnel: RVF | | | |
| Stations and Structures | | | | | | |
| North Cell: WQ1, WQ2, S-6, S-7; Central Cell : WQ3, WQ4, S-10, S-13; South Cell : WQ5, S-14; Walker Tract: WQ6, WQ7, S-15, S-16 | | | | | | |
| | | | Start Time | 10:00:00 AM | End Time | 3:30:00 PM |
| RVF | | Numbers observed in | | | | Habitat, Activities and Other Important Notes |
| VHB. Audubon, Other (Circle One) | | North Cell | Central Cell | South Cell | Walker Tract | |
| GREBES | Pied-billed Grebe | | | | | Northern Harrier attacked a cattle egret and was plucking feathers for approximately 5 minutes before a turkey vulture swooped in and it flushed it off its prey, then cattle egret got up, flew away to shrub along lake bank and appeared dazed and relatively immobile 11 black bellied whistling duck chicks were observed with two adults presumably the parents |
| PELICANS | American White Pelican | | | | | |
| | Brown Pelican | | | | | |
| CORMORANTS | Double-crested Cormorant | 1 | | 1 | | |
| ANHINGAS | Anhinga | 10 | 8 | 19 | | |
| HERONS | Great Blue Heron | 2 | 3 | 3 | | |
| | Great Egret | 3 | 13 | 22 | 7 | |
| | Snowy Egret | 3 | 1 | 1 | 3 | |
| | Cattle Egret | 10 | 22 | 52 | | |
| | Tricolored Heron | 1 | 1 | 4 | 1 | |
| | Little Blue Heron | 3 | 4 | 1 | 1 | |
| | Green Heron | | | | | |
| | Black-crowned Night Heron* | | 1 | | | |
| Yellow-crowned Night Heron | | | | | | |
| BITTERNS | American Bittern | | | | | |
| | Least Bittern* | | | | | |
| STORKS / IBIS | Wood Stork | | 2 | | | |
| | Glossy Ibis | | | 1 | | |
| | White Ibis | 1 | 23 | | 2 | |
| | Roseate Spoonbill | | | | | |
| GEESE | Canada Goose | | | | | |
| | Snow Goose | | | | | |
| DUCKS | Black-bellied Whistling Duck* | | 6 | 44 | 5 | |
| | Fulvous Whistling Duck | | | | | |
| | Mallard Hybrid* | | | 3 | 3 | |
| | Mottled Duck* | 2 | | 25 | 36 | |
| | American Wigeon | | | | | |
| | Northern Pintail | | | | | |
| | Green-winged Teal | | | | | |
| | Blue-winged Teal | | 1 | 4 | 24 | |
| | Northern Shoveler | | | | | |
| | Wood Duck* | | | 1 | | |
| | Redhead | | | | | |
| | Ring-necked Duck | | | | | |
| | Canvasback | | | | | |
| | Gadwall | | | | | |
| | Lesser Scaup | | | | | |
| | Long-tailed Duck | | | | | |
| | Bufflehead | | | | | |
| | Ruddy Duck | | | | | |
| Hooded Merganser | | | | | | |
| VULTURES | Turkey Vulture | 1 | | 1 | | |
| | Black Vulture | | 2 | 1 | | |
| RAPTORS | Northern Harrier | 1 | | | | |
| | Swallow-tailed Kite | | | | | |
| | Sharp-shinned Hawk | | | | | |
| | Cooper's Hawk | | | | | |
| | Red-shouldered Hawk | 1 | 1 | 3 | | |
| | Broad-winged Hawk | | | | | |
| | Red-tailed Hawk | | | | | |
| | Bald Eagle* | | 1 | 1 | | |
| | Osprey | 1 | 1 | 3 | 2 | |
| | Crested Caracara | | | | | |
| | Merlin | | | | | |
| | American Kestrel | | | | | |
| | Peregrine Falcon | | | | | |
| QUAIL | Northern Bobwhite* | | | | | |

| RVF | | Numbers observed in | | | | Habitat, Activities and Other Important Notes |
|---|--------------------------------|---------------------|--------------|------------|--------------|---|
| VHB. Audubon, Other (Circle One) | | North Cell | Central Cell | South Cell | Walker Tract | |
| KINGFISHER | Belted Kingfisher | | 2 | 3 | 1 | |
| WOODPECKERS | Red-bellied Woodpecker | | | | | |
| | Pileated Woodpecker | | | | | |
| | Red-headed Woodpecker | | | | | |
| | Downy Woodpecker | | | | | |
| | Northern Flicker | | | | | |
| | Yellow-bellied Sapsucker | | | | | |
| | Eastern Wood-pewee | | | | | |
| FLYCATCHERS | Eastern Phoebe | | | | | |
| | Western Kingbird | | | | | |
| | Eastern Kingbird | | | | | |
| | Great Crested Flycatcher | | | | | |
| | Gray Kingbird | | | | | |
| | Scissor-tailed Flycatcher | | | | | |
| SHRIKE | Loggerhead Shrike | | | | | |
| SWALLOWS | Tree Swallow | | | | | |
| | Northern Rough-winged Swallow* | | | | | |
| | Barn Swallow* | | | 30 | | |
| | Bank Swallow | | | | | |
| | Cliff Swallow | | | | | |
| | Purple Martin | | | | | |
| TITMOUSE | Tufted Titmouse | | | | | |
| JAYS/ CROWS | Blue Jay | | | | | |
| | American Crow | | 5 | | | |
| | Fish Crow | | | 5 | | |
| WRENS | Carolina Wren | | | | | |
| | Marsh Wren | | | | | |
| | Sedge Wren | | | | | |
| | House Wren | | | | | |
| | Ruby-crowned Kinglet | | | | | |
| ROBIN/ BLUEBIRDS | American Robin | | | | | |
| | Eastern Bluebird | | | | | |
| THRUSHES | Hermit Thrush | | | | | |
| MIMIDS | Northern Mockingbird | | | | | |
| | Gray Catbird | | | | | |
| | Brown Thrasher | | | | | |
| STARLING | European Starling | | 12 | | | |
| PIPITS | American Pipit | | | | | |
| WAXWINGS | Cedar Waxwing | | | | | |
| GNATCATCHER | Blue-gray Gnatcatcher | | | | | |
| VIREOS | White-eyed Vireo | | | | | |
| | Red-eyed Vireo | | | | | |
| | Blue-headed Vireo | | | | | |
| | Yellow-throated Vireo | | | | | |
| WARBLERS | Northern Parula | | | | | |
| | Cerulean Warbler | | | | | |
| | Tennessee Warbler | | | | | |
| | Yellow Warbler | | | | | |
| | Chestnut-sided Warbler | | | | | |
| | Magnolia Warbler | | | | | |
| | Blackburnian Warbler | | | | | |
| | Yellow-rumped Warbler | | | | | |
| | Yellow-throated Warbler | | | | | |
| | Prairie Warbler | | | | | |
| | Palm Warbler | | | | | |
| | Pine Warbler | | | | | |
| | Black and White Warbler | | | | | |
| | American Redstart | | | | | |
| | Ovenbird | | | | | |
| | Northern Waterthrush | | | | | |
| | Common Yellowthroat | | | | | |
| | Hooded Warbler | | | | | |

| VHB Bird Data Collection Sheet for Celery Fields Stormwater Facility. | | | | | | |
|---|-------------------------------|---------------------|--|------------|--------------|--|
| Date: | October 31, 2011 | | Bird Collection Personnnel: RVF/ Jeannie Dubis (1/2 South Cell and all of Walker tract) | | | |
| Stations and Structures | | | | | | |
| North Cell: WQ1, WQ2, S-6, S-7; Central Cell : WQ3, WQ4, S-10, S-13; South Cell : WQ5, S-14; Walker Tract: WQ6, WQ7, S-15, S-16 | | | | | | |
| | | | Start Time | 8:45:00 AM | End Time | 2:45:00 PM |
| RVF | | Numbers observed in | | | | Habitat, Activities and Other Important Notes |
| VHB. Audubon, Other (Circle One) | | North Cell | Central Cell | South Cell | Walker Tract | |
| GREBES | Pied-billed Grebe | | 2 | 4 | | 2 immature eagles in North Cell and 1 adult in South Cell; sand pipers were observed along the weir at south end of Walker Tract |
| PELICANS | American White Pelican | | | | | |
| | Brown Pelican | | | | | |
| CORMORANTS | Double-crested Cormorant | 2 | 1 | 2 | 1 | |
| ANHINGAS | Anhinga | 10 | 6 | 18 | 11 | |
| HERONS | Great Blue Heron | 2 | 4 | 8 | 3 | |
| | Great Egret | 3 | 7 | 22 | 5 | |
| | Snowy Egret | 2 | 2 | 1 | 1 | |
| | Cattle Egret | 20 | 10 | 4 | | |
| | Tricolored Heron | 2 | 3 | 2 | 1 | |
| | Little Blue Heron | 4 | 5 | 1 | 1 | |
| | Green Heron | | | 1 | | |
| | Black-crowned Night Heron* | | | | | |
| | Yellow-crowned Night Heron | | | | | |
| BITTERNS | American Bittern | | | | | |
| | Least Bittern* | | | | | |
| STORKS / IBIS | Wood Stork | | 3 | 1 | | |
| | Glossy Ibis | | 52 | | 2 | |
| | White Ibis | 7 | 70 | 7 | 2 | |
| | Roseate Spoonbill | 1 | | | | |
| GEESE | Canada Goose | | | | | |
| | Snow Goose | | | | | |
| DUCKS | Black-bellied Whistling Duck* | | 20 | 15 | | |
| | Fulvous Whistling Duck | | | | | |
| | Mallard Hybrid* | | | | | |
| | Mottled Duck* | 11 | 2 | 9 | 4 | |
| | American Wigeon | | | | | |
| | Northern Pintail | | | | | |
| | Green-winged Teal | | | 1 | | |
| | Blue-winged Teal | | 6 | 27 | | |
| | Northern Shoveler | | | | | |
| | Wood Duck* | | | | | |
| | Redhead | | | | | |
| | Ring-necked Duck | | | | | |
| | Canvasback | | | | | |
| | Gadwall | | | | | |
| | Lesser Scaup | | | | | |
| | Long-tailed Duck | | | | | |
| | Bufflehead | | | | | |
| | Ruddy Duck | | | | | |
| | Hooded Merganser | | | | | |
| | VULTURES | Turkey Vulture | | | 2 | |
| Black Vulture | | | 3 | 8 | | |
| RAPTORS | Northern Harrier | | | | | |
| | Swallow-tailed Kite | | | | | |
| | Sharp-shinned Hawk | | | | | |
| | Cooper's Hawk | | | | | |
| | Red-shouldered Hawk | 1 | 2 | | 1 | |
| | Broad-winged Hawk | | | | | |
| | Red-tailed Hawk | | | | | |
| | Bald Eagle* | 2 | | 1 | | |
| | Osprey | 2 | 1 | 3 | 1 | |
| | Crested Caracara | | | | | |
| | Merlin | | | | | |
| | American Kestrel | | 1 | | | |
| | Peregrine Falcon | | | | | |
| | QUAIL | Northern Bobwhite* | | | | |

| RVF | | Numbers observed in | | | | Habitat, Activities and Other Important Notes |
|---|--------------------------------|---------------------|--------------|------------|--------------|---|
| VHB. Audubon, Other (Circle One) | | North Cell | Central Cell | South Cell | Walker Tract | |
| KINGFISHER | Belted Kingfisher | 1 | 1 | 2 | 1 | |
| WOODPECKERS | Red-bellied Woodpecker | | | | | |
| | Pileated Woodpecker | | | | | |
| | Red-headed Woodpecker | | | | | |
| | Downy Woodpecker | | | | | |
| | Northern Flicker | | | | | |
| | Yellow-bellied Sapsucker | | | | | |
| | Eastern Wood-pewee | | | | | |
| FLYCATCHERS | Eastern Phoebe | | | | | |
| | Western Kingbird | | | | | |
| | Eastern Kingbird | | | | | |
| | Great Crested Flycatcher | | | | | |
| | Gray Kingbird | | | | | |
| | Scissor-tailed Flycatcher | | | | | |
| SHRIKE | Loggerhead Shrike | | 1 | | 2 | |
| SWALLOWS | Tree Swallow | | | | 1 | |
| | Northern Rough-winged Swallow* | | | | | |
| | Barn Swallow* | 30 | | | | |
| | Bank Swallow | | | | | |
| | Cliff Swallow | | | | | |
| | Purple Martin | | | | | |
| TITMOUSE | Tufted Titmouse | | | | | |
| JAYS/ CROWS | Blue Jay | | | | | |
| | American Crow | | | | | |
| | Fish Crow | | | | | |
| WRENS | Carolina Wren | | | | | |
| | Marsh Wren | | 3 | 13 | | |
| | Sedge Wren | | | | | |
| | House Wren | | | | | |
| | Ruby-crowned Kinglet | | | | | |
| ROBIN/ BLUEBIRDS | American Robin | | | | | |
| | Eastern Bluebird | | | | | |
| THRUSHES | Hermit Thrush | | | | | |
| MIMIDS | Northern Mockingbird | | 1 | | 1 | |
| | Gray Catbird | | | | | |
| | Brown Thrasher | | | | | |
| STARLING | European Starling | | | | | |
| PIPITS | American Pipit | | | | | |
| WAXWINGS | Cedar Waxwing | | | | | |
| GNATCATCHER | Blue-gray Gnatcatcher | | | | | |
| VIREOS | White-eyed Vireo | | | | | |
| | Red-eyed Vireo | | | | | |
| | Blue-headed Vireo | | | | | |
| | Yellow-throated Vireo | | | | | |
| WARBLERS | Northern Parula | | | | | |
| | Cerulean Warbler | | | | | |
| | Tennessee Warbler | | | | | |
| | Yellow Warbler | | | | | |
| | Chestnut-sided Warbler | | | | | |
| | Magnolia Warbler | | | | | |
| | Blackburnian Warbler | | | | | |
| | Yellow-rumped Warbler | | 4 | | | |
| | Yellow-throated Warbler | | | | | |
| | Prairie Warbler | | | | | |
| | Palm Warbler | | 15 | 27 | 4 | |
| | Pine Warbler | | | | | |
| | Black and White Warbler | | | | | |
| | American Redstart | | | | | |
| | Ovenbird | | | | | |
| | Northern Waterthrush | | | | | |
| | Common Yellowthroat | | | | | |
| | Hooded Warbler | | | | | |

| VHB Bird Data Collection Sheet for Celery Fields Stormwater Facility. | | | | | | |
|---|-------------------------------|---------------------|--------------|------------|--------------|---|
| Date: | November 22, 2011 | rained yesterday | RVF/ BU | | | |
| Stations and Structures | | | | | | |
| North Cell: WQ1, WQ2, S-6, S-7; Central Cell: WQ3, WQ4, S-10, S-13; South Cell: WQ5, S-14; Walker Tract: WQ6, WQ7, S-15, S-16 | | | | | | |
| | | | Start Time | 7:20:00 AM | End Time | 2:00:00 PM |
| RVF | | Numbers observed in | | | | Habitat, Activities and Other Important Notes |
| VHB. Audubon, Other (Circle One) | | North Cell | Central Cell | South Cell | Walker Tract | |
| GREBES | Pied-billed Grebe | 4 | 2 | 1 | | |
| PELICANS | American White Pelican | | | | | |
| | Brown Pelican | | | | | |
| CORMORANTS | Double-crested Cormorant | 2 | 1 | 6 | | |
| ANHINGAS | Anhinga | 15 | 12 | 24 | 6 | |
| HERONS | Great Blue Heron | 3 | 2 | 12 | 4 | |
| | Great Egret | 1 | 14 | 23 | 5 | |
| | Snowy Egret | 2 | | 3 | | |
| | Cattle Egret | 3 | | 1 | 29 | |
| | Tricolored Heron | 4 | 4 | 12 | | |
| | Little Blue Heron | 4 | 5 | 3 | | |
| | Green Heron | | | | | |
| | Black-crowned Night Heron* | | | | | |
| BITTERNS | Yellow-crowned Night Heron | | | | | |
| | American Bittern | | | | | |
| | Least Bittern* | | | | | |
| | Wood Stork | 1 | 3 | 1 | | |
| STORKS / IBIS | Glossy Ibis | 4 | 1 | 35 | 4 | |
| | White Ibis | 16 | 30 | 22 | | |
| | Roseate Spoonbill | 1 | | 3 | | |
| | | | | | | |
| GEESE | Canada Goose | | | | | |
| | Snow Goose | | | | | |
| DUCKS | Black-bellied Whistling Duck* | | 10 | 2 | | |
| | Fulvous Whistling Duck | | | | | |
| | Mallard Hybrid* | | 2 | | | |
| | Mottled Duck* | 26 | | 30 | 10 | |
| | American Wigeon | | | | | |
| | Northern Pintail | | | | | |
| | Green-winged Teal | | | 8 | | |
| | Blue-winged Teal | 10 | 3 | 134 | 10 | |
| | Northern Shoveler | | | 5 | | |
| | Wood Duck* | | | | | |
| | Redhead | | | | | |
| | Ring-necked Duck | | | | | |
| | Canvasback | | | | | |
| | Gadwall | | | | | |
| | Lesser Scaup | | | | | |
| | Long-tailed Duck | | | | | |
| | Bufflehead | 2 | | | | |
| | Ruddy Duck | | | | | |
| | Hooded Merganser | | | | | |
| | VULTURES | Turkey Vulture | | 1 | | |
| Black Vulture | | | 1 | 2 | | |
| RAPTORS | Northern Harrier | 2 | 1 | 2 | | |
| | Swallow-tailed Kite | | | | | |
| | Sharp-shinned Hawk | | | | | |
| | Cooper's Hawk | | | | | |
| | Red-shouldered Hawk | | | | | |
| | Broad-winged Hawk | | | | | |
| | Red-tailed Hawk | 1 | 2 | 1 | | |
| | Bald Eagle* | 1 | 1 | 1 | | |
| | Osprey | | 2 | 3 | 2 | |
| | Crested Caracara | | | | | |
| | Merlin | | | | | |
| | American Kestrel | | 2 | | | |
| | Peregrine Falcon | | | | | |
| QUAIL | Northern Bobwhite* | | | | | |

| RVF | | Numbers observed in | | | | Habitat, Activities and Other Important Notes |
|---|--------------------------------|---------------------|--------------|------------|--------------|---|
| VHB. Audubon, Other (Circle One) | | North Cell | Central Cell | South Cell | Walker Tract | |
| KINGFISHER | Belted Kingfisher | 1 | 2 | 4 | 1 | |
| WOODPECKERS | Red-bellied Woodpecker | | | | | |
| | Pileated Woodpecker | | | | | |
| | Red-headed Woodpecker | | | | | |
| | Downy Woodpecker | | | | | |
| | Northern Flicker | | | | | |
| | Yellow-bellied Sapsucker | | | | | |
| | Eastern Wood-pewee | | | | | |
| FLYCATCHERS | Eastern Phoebe | | | | | |
| | Western Kingbird | | | | | |
| | Eastern Kingbird | | | | | |
| | Great Crested Flycatcher | | | | | |
| | Gray Kingbird | | | | | |
| | Scissor-tailed Flycatcher | | | | | |
| SHRIKE | Loggerhead Shrike | | 1 | | | |
| SWALLOWS | Tree Swallow | 50 | | 100 | | |
| | Northern Rough-winged Swallow* | | | | | |
| | Barn Swallow* | | | | | |
| | Bank Swallow | | | | | |
| | Cliff Swallow | | | | | |
| | Purple Martin | | | | | |
| TITMOUSE | Tufted Titmouse | | | | | |
| JAYS/ CROWS | Blue Jay | | | | | |
| | American Crow | | 7 | 6 | | |
| | Fish Crow | | | | | |
| WRENS | Carolina Wren | | | | | |
| | Marsh Wren | | | | | |
| | Sedge Wren | | | | | |
| | House Wren | | | | | |
| | Ruby-crowned Kinglet | | | | | |
| ROBIN/ BLUEBIRDS | American Robin | | | | | |
| | Eastern Bluebird | | | | | |
| THRUSHES | Hermit Thrush | | | | | |
| MIMIDS | Northern Mockingbird | | 1 | | | |
| | Gray Catbird | | | | | |
| | Brown Thrasher | | | | | |
| STARLING | European Starling | | | 2 | | |
| PIPITS | American Pipit | | | | | |
| WAXWINGS | Cedar Waxwing | | | | | |
| GNATCATCHER | Blue-gray Gnatcatcher | | | | | |
| VIREOS | White-eyed Vireo | | | | | |
| | Red-eyed Vireo | | | | | |
| | Blue-headed Vireo | | | | | |
| | Yellow-throated Vireo | | | | | |
| WARBLERS | Northern Parula | | | | | |
| | Cerulean Warbler | | | | | |
| | Tennessee Warbler | | | | | |
| | Yellow Warbler | | | | | |
| | Chestnut-sided Warbler | | | | | |
| | Magnolia Warbler | | | | | |
| | Blackburnian Warbler | | | | | |
| | Yellow-rumped Warbler | | | | | |
| | Yellow-throated Warbler | | 1 | | | |
| | Prairie Warbler | | | | | |
| | Palm Warbler | 85 | 120 | 12 | 10 | |
| | Pine Warbler | | | | | |
| | Black and White Warbler | | | | | |
| | American Redstart | | | | | |
| | Ovenbird | | | | | |
| | Northern Waterthrush | | | | | |
| | Common Yellowthroat | 3 | 2 | | | |
| | Hooded Warbler | | | | | |



Vanasse Hangen Brustlin, Inc.

www.vhb.com